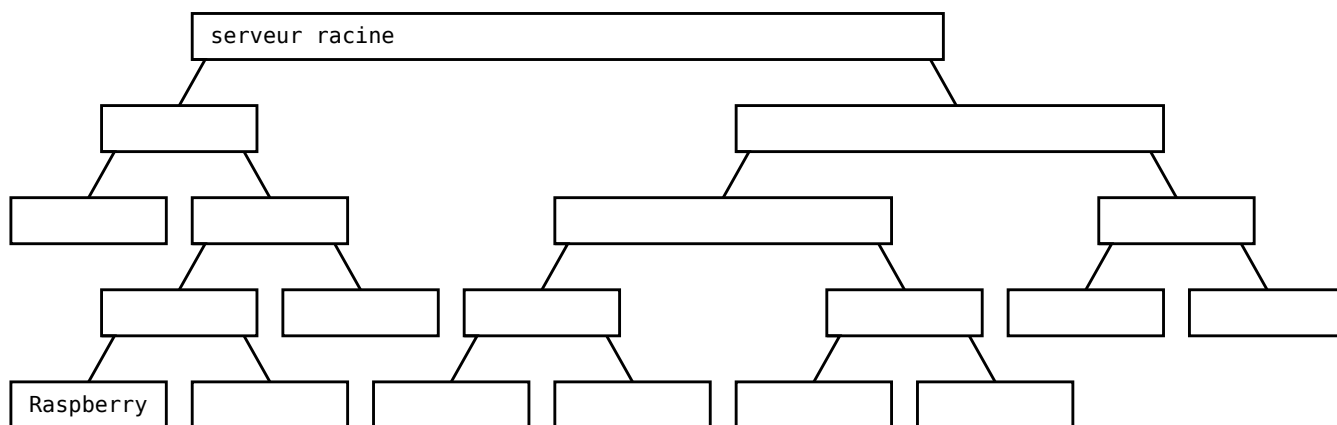
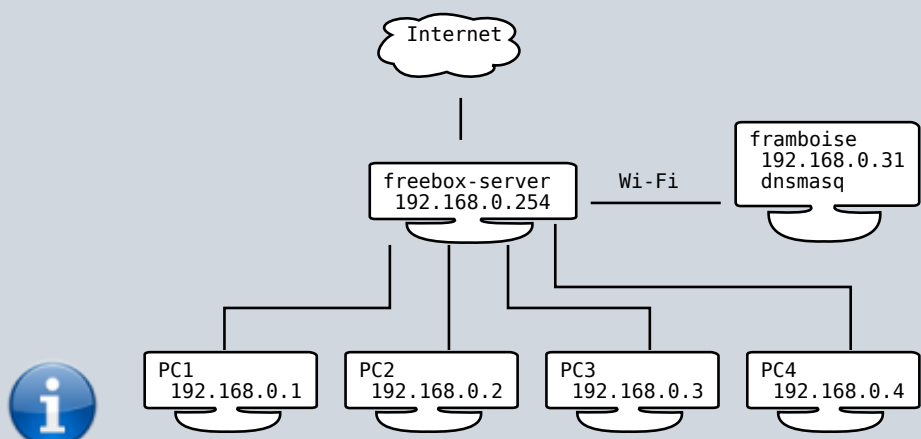


DnsMasq : utiliser votre Raspberry Pi comme serveur DNS (et accélérer Internet)

Voici un schéma des serveurs DNS ; le Raspberry Pi est au bas de l'arbre, le nœud du haut est le serveur racine qui connaît tous les noms de domaine existants :



Voici un exemple de réseau dans lequel un Raspberry Pi est le serveur DNS :



Ce réseau local comporte autour d'une freebox :

- quatre PCs : PC1, PC2, PC3, PC4
- un Raspberry pi sur lequel est installé **dnsmasq** dont on utilise les deux fonctionnalités :
 - DHCP ⇒ attribue aux clients du réseau local :
 - adresses IP
 - noms d'hôtes
 - DNS
 - domaines

2. DNS :

- résout les adresses du domaine local
- sert de de cache DNS
- transfère aux DNS externes s'il ne sait pas résoudre en local

Pré-requis

Installation

Connectez-vous à votre Raspberry Pi via SSH
Mettez à jour votre système :

```
pi@framboise4:~ $ sudo apt update  
pi@framboise4:~ $ sudo apt upgrade
```

Installez le package **DNSMasq** :

```
pi@framboise4:~ $ sudo apt install  
dnsmasq
```



DNSMasq est maintenant installé.

Configuration

Voir :

- [Comment configurer Dnsmasq, serveur dns et dhcp léger](#)
- [Dnsmasq.conf : options](#)



On ne touche pas à :

- **/etc/resolv.conf** qui renvoie vers **127.0.0.1** (dnsmasq installé sur cette machine)
 - ⇒ remplacé par **/etc/resolv.dnsmasq**
- 2. **/etc/dnsmasq.conf** (fichier de

configuration principal, entièrement en commentaire)

- o ⇒ remplacé par **/etc/dnsmasq.d/local.conf**

Les fichiers de configuration à utiliser sont :

Fichier à utiliser		au lieu de
/etc/hosts	résolution des noms d'hôte du réseau	
/etc/resolv.dnsmasq	serveurs DNS à utiliser	/etc/resolv.conf
/etc/dnsmasq.d/local.conf	fichier de configuration dans lequel une ligne demande d'utiliser /etc/resolv.dnsmasq	/etc/dnsmasq.conf

Configuration du Raspberry



On ne touche pas au fichier de configuration /etc/dnsmasq.conf.

La configuration sera écrite dans /etc/dnsmasq.d/*.conf

Pour une configuration basique, éditez avec les droits d'administration le fichier **/etc/dnsmasq.d/basique.conf** :

[/etc/dnsmasq.d/basique.conf](#)

domain-



```
needed  
bogus-  
priv  
expand-  
hosts  
domain=  
me.local
```

- **domain-needed** : n'envoyer des requêtes DNS au serveur DNS principal que pour le nom de domaine
- **bogus-priv** : pas de requête DNS au serveur DNS principal s'il s'agit d'une adresse IP locale
- **expand-hosts** : servira à ajouter un faux nom de domaine pour nos appareils locaux
- **domain=me.local** : un nom de domaine local : Si un hôte se nomme pc, on peut y accéder avec pc.me.local

2. Redémarrez DNSMasq pour appliquer les modifications :

```
pi@framboise4:~  
$ sudo systemctl  
restart  
dnsmasq.service
```

3. Pour créer un hôte local (comme pc.me.local), Éditez avec les droits

d'administration le fichier **/etc/hosts** pour ajouter à la fin une ligne pour cet hôte :

`/etc/hosts`

```
192.168  
.1.17  
pc
```

Cette ligne dit au Raspberry Pi que le nom pc permet d'atteindre l'IP 192.168.1.17 : Le Raspberry Pi peut désormais utiliser pc comme nom d'hôte et tout ordinateur utilisant le Raspberry Pi comme serveur DNS peut utiliser pc.me.local.



Fichier **/etc/hosts** du serveur DNS

Inutile d'associer freebox-server = 192.168.0.254, cela ne fonctionnera pas, même si une règle dhcp-host est spécifiée dans le fichier de configuration.



La



freebox-server est en effet configurée en IP statique sur la freebox (192.168.0.254). Elle ne lance pas de requête DHCP → dnsmaq ne reçoit donc pas de requête DHCP de la part de la freebox.

De même pour le Raspberry Pi qui héberge le serveur dnsmaq et est configuré en IP statique (bail statique dans la box ou fichier /etc/network/interfaces).

Mais en mettant ces adresses dans /etc/hosts, dnsmaq



est configuré par défaut pour les lire.

Dans le fichier /etc/hosts, il ne faut pas indiquer **framboise** pour 127.0.0.1 sinon dnsmasq répondra à une requête DNS externe par la réponse framboise → 127.0.0.1, 192.168.0.31. Le PC distant contactera alors 127.0.0.1 (donc lui-même, alors qu'il pensait contacter framboise)

Voici un exemple de contenu du fichier /etc/hosts de framboise :

[/etc/hosts](#)

```
127.0.0.1
```

```
localho  
st  
192.168  
.0.31  
framboi  
se  
192.168  
.0.31  
dns.loc  
al
```

**Fichier
/etc/dnsmasq.d/lo
cal.conf (pour ne
pas toucher à
/etc/dnsmasq.con
f)**

Voir
[http://skimpax.web4me
.fr/wiki/doku.php/linux/
dnsmasq](http://skimpax.web4me.fr/wiki/doku.php/linux/dnsmasq)

[/etc/dnsmasq.d/local.co
nf](#)



```
# Ne  
jamais  
faire  
sortir  
d'adres  
ses  
locales  
# -  
Ne  
jamais  
transme  
ttr  
les  
noms  
simples  
(sans  
point  
ni  
domaine  
)  
domain-  
needed
```




```
# -  
Ne  
jamais  
transme  
ttr  
les  
adresse  
s dans  
les  
espaces  
d'adres  
sage  
non-  
routés.  
bogus-  
priv  
  
#  
Fichier  
contena  
nt la  
définit  
ion des  
serveur  
s en  
amont  
# (au  
lieu de  
/etc/re  
solv.co  
nf)  
resolv-  
file=/e  
tc/reso  
lv.dnsm  
asq  
  
#  
Essayer  
avec  
chaque  
serveur  
dans  
l'ordre  
du  
fichier  
ci-  
dessus  
strict-  
order
```



```
# Teste
les
changem
ents du
fichier
de
résolut
ion et
le
relit
no-poll

# Add
other
name
servers
here,
with
domain
specs
if they
are for
# non-
public
domains
.
#server
=/local
net/192
.168.0.
1

#
Example
of
routing
PTR
queries
to
nameser
vers:
this
will
send
all
#
address
->name
queries
for
```



```
192.168
.3/24
to
nameser
ver
10.1.2.
3
#server
=/3.168
.192.in
-
addr.ar
pa/10.1
.2.3

# Add
local-
only
domains
here,
queries
in
these
domains
are
answere
d
# from
/etc/ho
sts or
DHCP
only.
#local=
/localn
et/

# Add
domains
which
you
want to
force
to an
IP
address
here.
# The
example
below
send
any
```



```
host in
doublec
lick.ne
t to a
local
#
webserv
er.
#adres
s=/doub
leclick
.net/12
7.0.0.1

# nom
de
l'inter
face
(par
exemple
eth0)
interfa
ce=eth0

# Pour
que
dnsmaq
ne lise
pas
/etc/ho
sts
# no-
hosts

# pour
qu'un
nom de
domaine
soit
automat
iquemen
t
ajouté
aux
noms
simples
du
fichier
hosts.
expand-
```



```
hosts
#
domaine
pour
dnsmasq
(facult
atif ;
fait
les
actions
suivant
es :
# 1)
Permet
aux
hôtes
DHCP
d'avoir
des
noms de
domaine
complet
s, tant
que la
partie
domaine
corresp
ond à
ce
paramèt
re.
# 3)
Fournit
le nom
de
domaine
pour
"expand
-hosts"
domain=
maison.
lan

#
active
le
serveur
DHCP
intégré
,
fournir
```



la
plage
d'adres
ses
disponi
bles et
éventue
llement
une
durée
de bail
dhcp-
range=1
92.168.
0.100,1
92.168.
0.150,2
4h

Baux
statiqu
es avec
:
adresse
MAC,nom
,adress
e IP,
durée
du bail

Baux
permane
nts
dhcp-
host=00
:24:d4:
af:a8:0
c,freeb
ox-
server,
192.168
.0.254,
infini
te
dhcp-
host=00
:24:d4:
7c:59:5
3,freeb
ox-



```
player,
192.168
.0.253,
infinite
dhcp-
host=2C
:B0:5D:
8B:6C:1
2,swnet
gear,19
2.168.0
.239,in
finite
dhcp-
host=14
:DA:E9:
6B:B2:0
3,omv,1
92.168.
0.250,i
nfinite
dhcp-
host=00
:50:43:
01:51:9
A,sheeb
ian,192
.168.0.
252,inf
inite
dhcp-
host=00
:22:F4:
42:A3:B
1,picun
tu,192.
168.0.2
04,inf
inite
#
Baux à
durée
limitée
dhcp-
host=d0
:66:7b:
03:fa:6
6,samsu
ngtv,19
2.168.0
```



```
.20,48h
dhcp-
host=00
:1e:8f:
61:a4:0
a,impri
mante,1
92.168.
0.21,48
h
dhcp-
host=E0
:2A:82:
5B:34:F
8,domad
ix,192.
168.0.1
0,48h

#
Donner
à la
machine
qui
annonce
se
nommer
"Squeez
eboxTou
ch"
l'adres
se IP
192.168
.0.115
et un
bail
permane
nt
dhcp-
host=Sq
ueezebo
xTouch,
192.168
.0.115,
infini
te

#
Remplac
er la
```




```
route
par
défaut
fournie
par
Dnsmasq
(qui
suppose
que le
routeur
est sur
la même
machine
que
dnsmasq
)
#
ici:
mettre
l'IP de
la
freebox
comme
routeur
par
défaut
dhcp-
option=
option:
router,
192.168
.0.254

# Set
the
cachesi
ze
here.
cache-
size=25
6

#
ajouter
une
directi
ve de
journal
isation
, non
include
```



```
par  
défaut  
log-  
facilit  
y=/var/  
log/dns  
maq.lo  
g
```

```
#  
Pour le  
débogag  
e,  
journal  
iser  
chaque  
requête  
DNS qui  
passe  
par  
Dnsmaq  
.log-  
queries
```

```
#  
journal  
iser  
beaucou  
p  
d'infor  
mations  
supplém  
entaire  
s sur  
les  
transac  
tions  
DHCP.  
log-  
dhcp
```

**Fichier
/etc/resolv.dnsma
sq (pour ne pas
toucher à
/etc/resolv.conf)**



Le fichier resolv.conf renvoie vers dnsmasq qui est installé sur cette machine :

Le fichier /etc/resolv.dnsmasq spécifie les serveurs DNS externes à utiliser par dnsmasq :

[/etc/resolv.conf](#)

```
nameserver  
127.0.0.1
```



Dnsmasq a été configuré pour respecter l'ordre de ce fichier (les préférés en premiers), cf. directive strict-order

Voici un exemple :

[/etc/resolv.dnsmasq](#)

```
# Free  
nameser  
ver  
212.27.  
40.240  
nameser  
ver  
212.27.  
40.241
```

```
#  
OpenDNS  
nameser  
ver  
208.67.  
222.222  
nameser  
ver  
208.67.  
220.220
```

```
# OVH  
nameser  
ver  
91.121.  
161.184  
nameser  
ver  
91.121.  
164.227  
nameser  
ver  
188.165  
.197.14  
4
```

```
#  
Google  
nameser  
ver  
8.8.8.8  
nameser  
ver  
4.4.4.4
```



Journalisation

Lorsqu'on active les traces dans dnsmasq, on se rend compte que c'est tout de suite très verbeux, notamment à causes des requêtes DNS. On configure donc les traces avec logrotate, de façon à ne pas saturer de disque.

Configurer dnsmasq

On peut activer indépendamment les traces DNS et DHCP. Un exemple avec les deux activés (commenter log-queries ou log-dhcp pour inhiber) :

```
# Define the log
output
log-
facility=/var/lo
g/dnsmasq.log

# For debugging
purposes, log
each DNS query
as it passes
through
# dnsmasq.
log-queries

# Log lots of
extra
information
about DHCP
transactions.
log-dhcp
```

Les adresses IP statiques



Solution sur framboise
:

Dans **/etc/hosts**,
indiquer les hôtes
ayant une adresse IP
statique et configurer
dnsmasq pour lire le
fichier **/etc/hosts** au
démarrage. Pour cela,
commenter la règle
suivante :

```
#no-hosts
```



Dans le
fichier
/etc/hosts,
il ne faut
pas
indiquer
'framboise
' pour
127.0.0.1
sinon
dnsmasq
répondra
à une
requête
DNS
externe
par la
réponse
framboise
→
127.0.0.1,
192.168.0.
250.
L'hôte
distant
contactera
donc
127.0.0.1
(c'est-à-
dire lui-
même,
alors qu'il
pensait
contacter





framboise)

Contenu de /etc/hosts de framboise

On spécifie les hôtes avec une adresse IP statique, donc non allouée pas dnsmasq.

[/etc/hosts](#)

```
127.0.0.1
localhost
192.168.0.250
sheebian
sheebian.maison.lan
```



Contenu de /etc/resolv.conf de sheebian

Ce fichier spécifie le serveur DNS à utiliser, donc renvoie vers dnsmasq qui est installé sur cette machine.

[/etc/resolv.conf](#)

```
nameserver
127.0.0.1
```



Contenu de **/etc/resolv.dnsmaq de framboise**

Cf la page officielle de
man en français :
<http://www.linuxcertif.com/man/8/dnsmaq/>

recopiée ici :
[Paramètres de
dnsmaq.conf](#)

Les directives de
configuration seront
écrites dans un fichier
**/etc/dnsmaq.d/local
.conf** créé pour
l'occasion et pris en
charge
automatiquement ¹⁾

Ce fichier spécifie en
particulier les DNS
externes à utiliser par
dnsmaq (lignes
nameserver).
Dnsmaq a été
configuré pour
respecter l'ordre de ce
fichier (les préférés en
premiers), cf. directive
strict-order

[/etc/dnsmaq.d/local.co
nf](#)

```
# Free  
nameser  
ver  
212.27.  
40.240  
nameser  
ver  
212.27.  
40.241  
  
#  
OpenDNS  
nameser
```





```
ver
208.67.
222.222
nameser
ver
208.67.
220.220

# OVH
nameser
ver
91.121.
161.184
nameser
ver
91.121.
164.227
nameser
ver
188.165
.197.14
4

#
Google
nameser
ver
8.8.8.8
nameser
ver
4.4.4.4
```

éditez avec les droits d'administration le fichier **/etc/dnsmasq.d/local.conf** pour paramétrer les adresses IP voulues comme ceci :

On commence par empêcher de faire sortir sur internet les requêtes de domaines locaux :

Pour que dnsmasq ajoute automatiquement le nom de domaine quand il sert la



demande, ajoutez l'option **expand-hosts** et la définition du nom de domaine (**domain=**).

Avec **expand-hosts**, la recherche DNS pour **hostname.your_domain.com** sauf si **your_domain.com** est spécifié dans l'option **adresse**. Par exemple,

```
domain=your_domain.com
expand-hosts
address=/zirconium.your_domain.com/zr.your_domain.com/192.168.1.31
```



Pour faire des recherches DNS inverses, utiliser **ptr record** :

```
address=/host.example.net/10.1.2.30
ptr-record=30.2.1.10.in-addr.arpa,"host.example.net"
```

Pour créer des baux statiques, utiliser la méthode **dhcp-host** pour les adresses ci-dessus, mais avec des adresses MAC pour ceux qui en ont besoin, par exemple :

```
# This entry is simply a static DNS address, great for
```



```
mapping print
servers, etc to
names
dhcp-
host=zinc,192.16
8.1.30
# This entry
assigns the
given IP address
to the MAC
address for
static IP
addresses
# Note that the
IP address
listed does NOT
have to be in
the DHCP range
given, just on
the same subnet
dhcp-
host=11:22:33:44
:55:66,zinc,192.
168.1.30,infini
e
```



```
domain-needed
bogus-priv
```

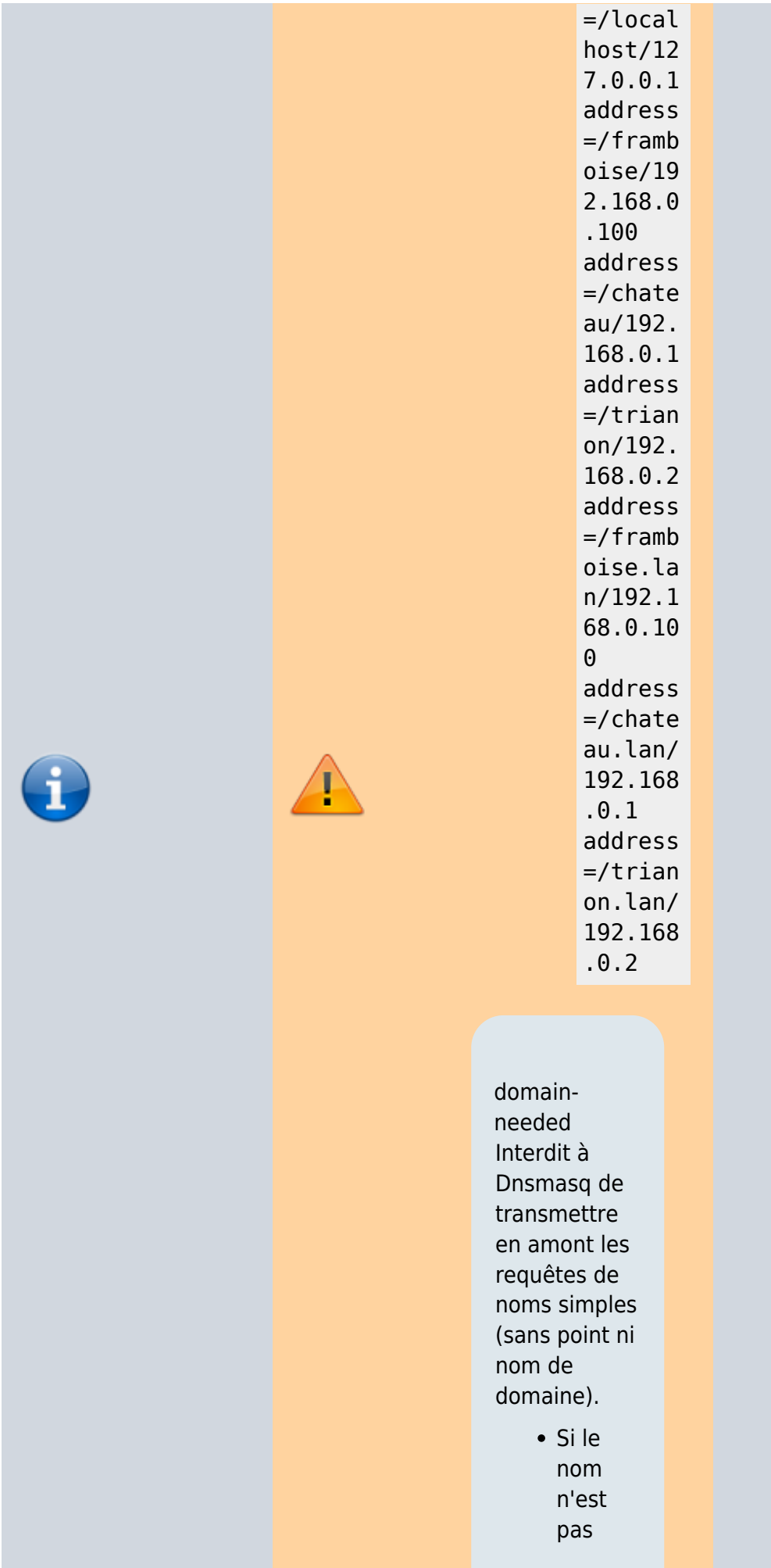
[/etc/dnsmasq.d/local.conf](#)

```
domain-
needed
bogus-
priv
cache-
size=10
24
```

```
expand-
hosts
domain=
lan
```

```
resolv-
file=/e
tc/reso
lv.dnsm
asq
```

		<pre># Free nameserver 212.27.40.240 nameserver 212.27.40.241 # OpenDNS nameserver 208.67.222.222 nameserver 208.67.220.220 # OVH nameserver 91.121.161.184 nameserver 91.121.164.227 nameserver 188.165.197.144 # Google nameserver 8.8.8.8 nameserver 4.4.4.4 # Adresses à forcer address</pre>
---	---	---



The screenshot shows a terminal window with a light blue background. On the left side, there is a blue circular icon with a white lowercase 'i'. In the center, there is a yellow triangular warning icon with a black exclamation mark. On the right side, there is a white rectangular box containing the following text:

```
=/local  
host/12  
7.0.0.1  
address  
=/framb  
oise/19  
2.168.0  
.100  
address  
=/chate  
au/192.  
168.0.1  
address  
=/trian  
on/192.  
168.0.2  
address  
=/framb  
oise.la  
n/192.1  
68.0.10  
0  
address  
=/chate  
au.lan/  
192.168  
.0.1  
address  
=/trian  
on.lan/  
192.168  
.0.2
```

Below the warning icon, there is a light blue rounded rectangular box containing the following text:

domain-needed
Interdit à
Dnsmasq de
transmettre
en amont les
requêtes de
noms simples
(sans point ni
nom de
domaine).

- Si le
nom
n'est
pas





dans
/etc/hosts ou
dans la
liste
des
baux
DHCP,
dnsmasq
répond
"non
trouvé".

- Avec **bogus-priv**, cela évite de faire sortir les requêtes de domaines locaux

bogus-priv
dnsmasq ne transmet pas aux serveurs DNS amont les requêtes DNS inverses pour des adresses IP privées (ie 192.168.x.x, etc...) qui ne sont ni dans **/etc/hosts** ni dans les baux DHCP.

- Il retourne dans ce cas "no such



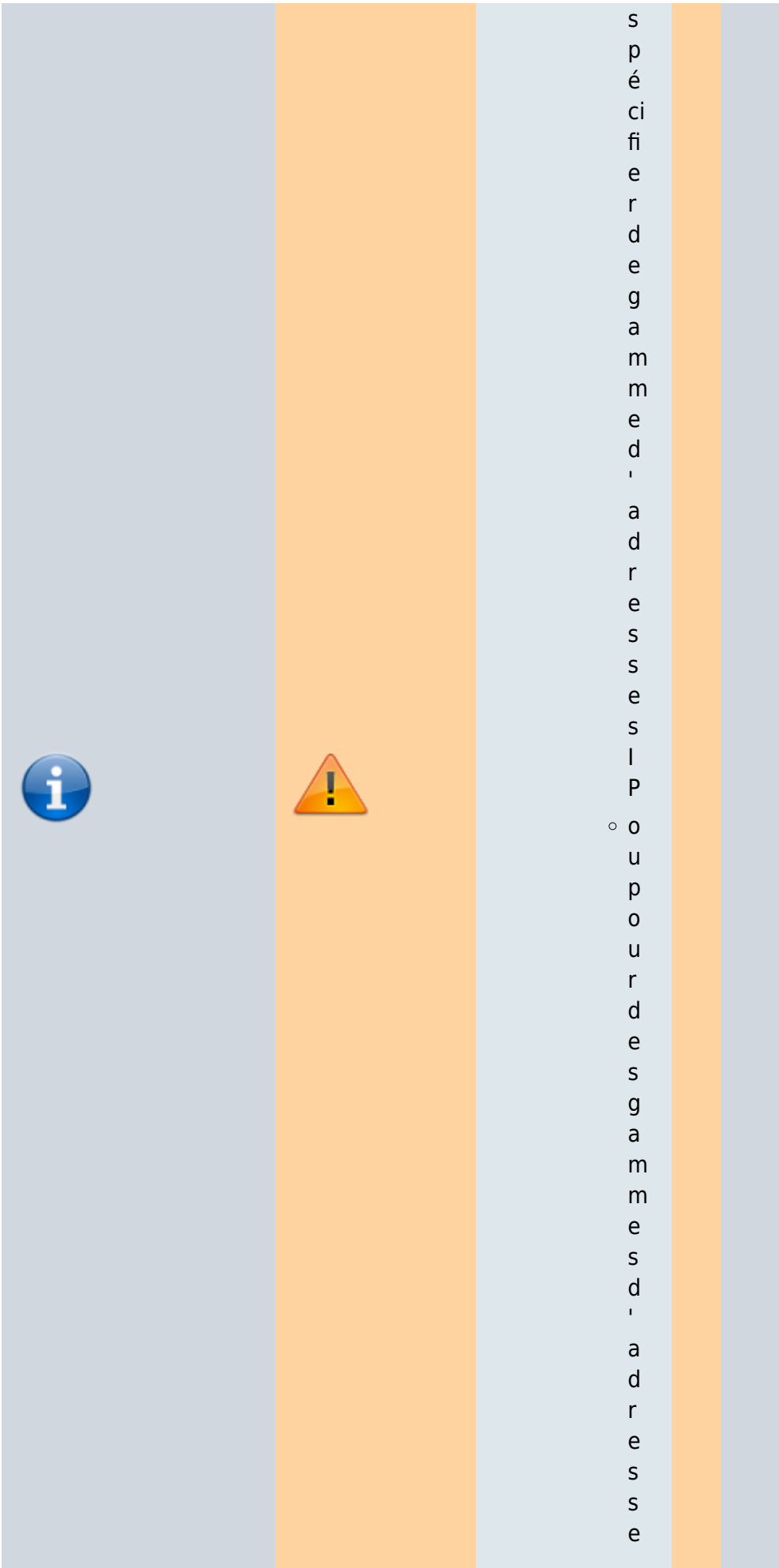
domain
”.

cache-size=<taille>
taille du
cache de
Dnsmasq



- valeur par défaut : 150 noms.
- une valeur de zéro désactive le cache.

domain=<domaine>[,<gamme d'adresses>]
domaine du serveur DHCP.

- Ce domaine local sera ajouté aux noms des machines assignées par le DHCP
- Le domaine peut être donné :
 - s
 - a
 - n
 - s



The image shows a vertical bar with a light blue background, a central orange stripe, and a grey stripe on the right. On the left side of the light blue area, there is a blue circular icon with a white lowercase letter 'i'. In the center of the orange stripe, there is a yellow triangular warning icon with a black exclamation mark. On the right side of the grey stripe, there is vertical text in a monospaced font: 's', 'p', 'é', 'c', 'i', 'f', 'i', 'e', 'r', 'd', 'e', 'g', 'a', 'm', 'm', 'e', 'd', ' ', 'a', 'd', 'r', 'e', 's', 's', 'e', 's', 'l', 'p', ' ', 'o', 'u', 'p', 'o', 'u', 'r', 'd', 'e', 's', 'g', 'a', 'm', 'm', 'e', 's', 'd', ' ', 'a', 'd', 'r', 'e', 's', 's', 'e'.



S
I
P
li
m
it
é
e
s.

3. Cela a deux effets : le serveur DHCP retourne le domaine à tous les hôtes qui le demandent cela spécifie le domaine valide pour les hôtes DHCP configurés.

4. cela empêche un hôte sur le LAN de fournir via DHCP un nom tel que par exemple "microsoft.com"

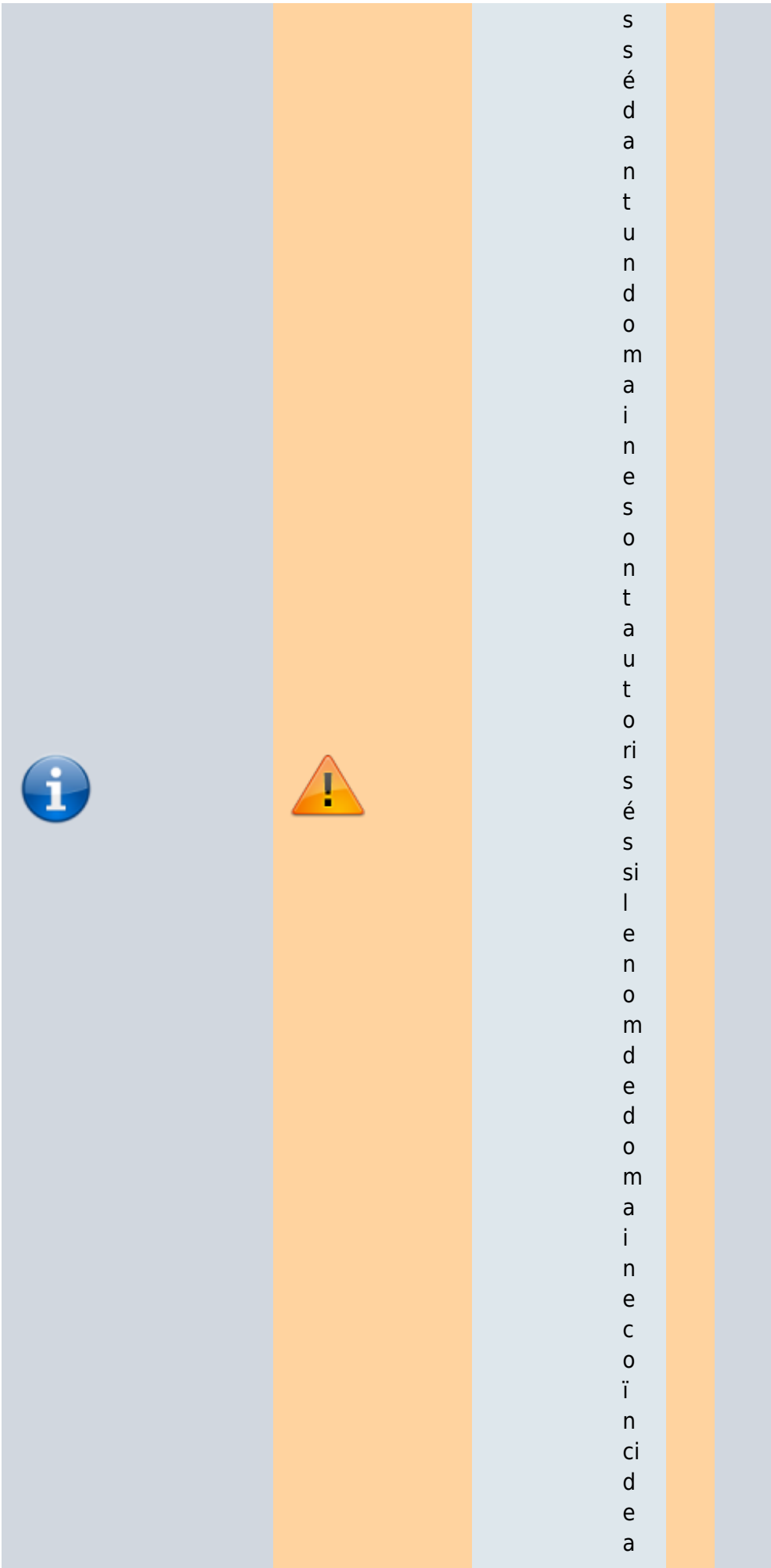


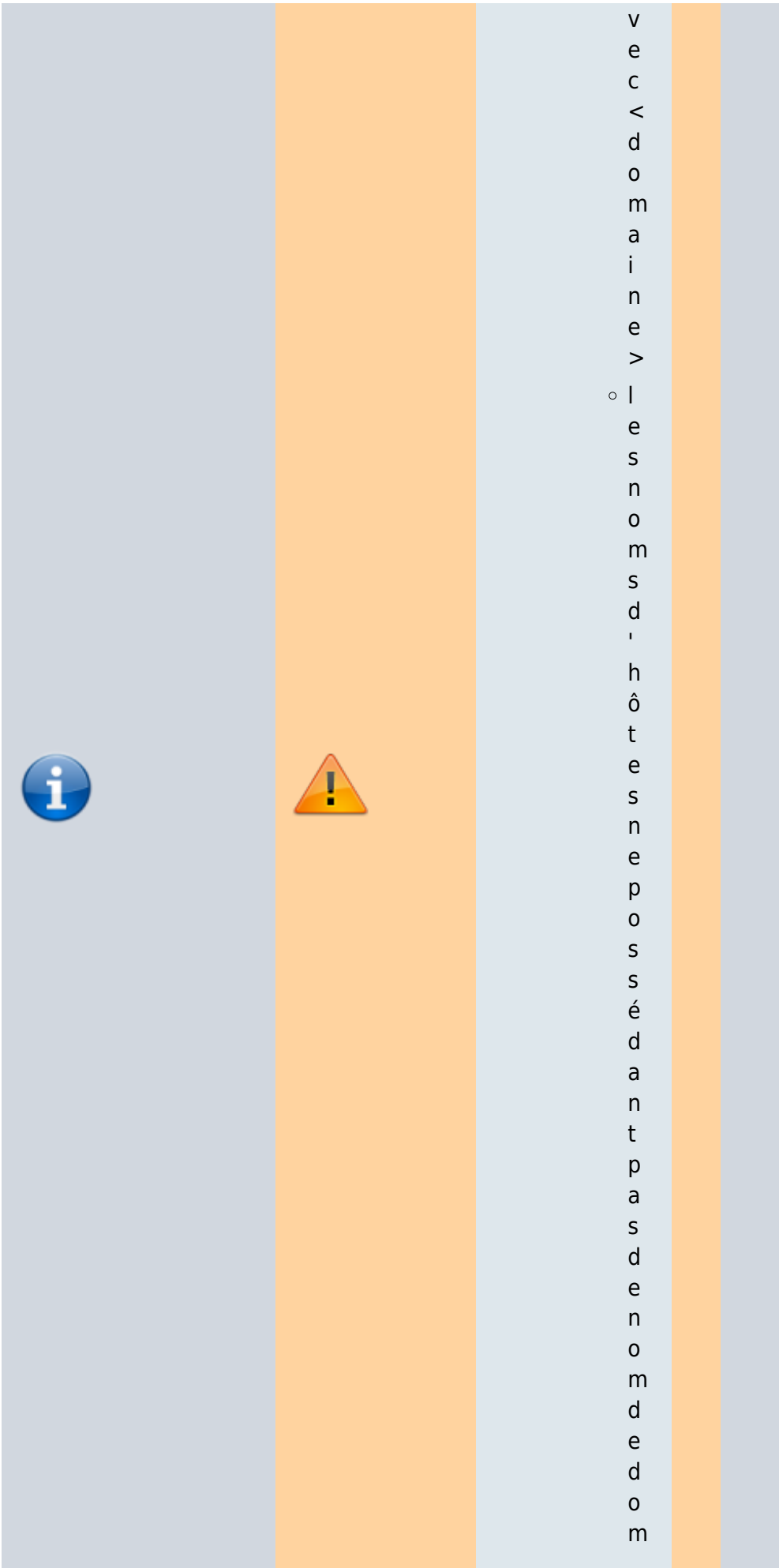
” et capture r illégitimement du trafic.

5. Si aucun nom de domaine n'est spécifié, les noms d'hôtes avec un nom de domaine (avec un point) seront interdits et enregistrés dans le journal (logs).

6. Si un suffixe est fourni,

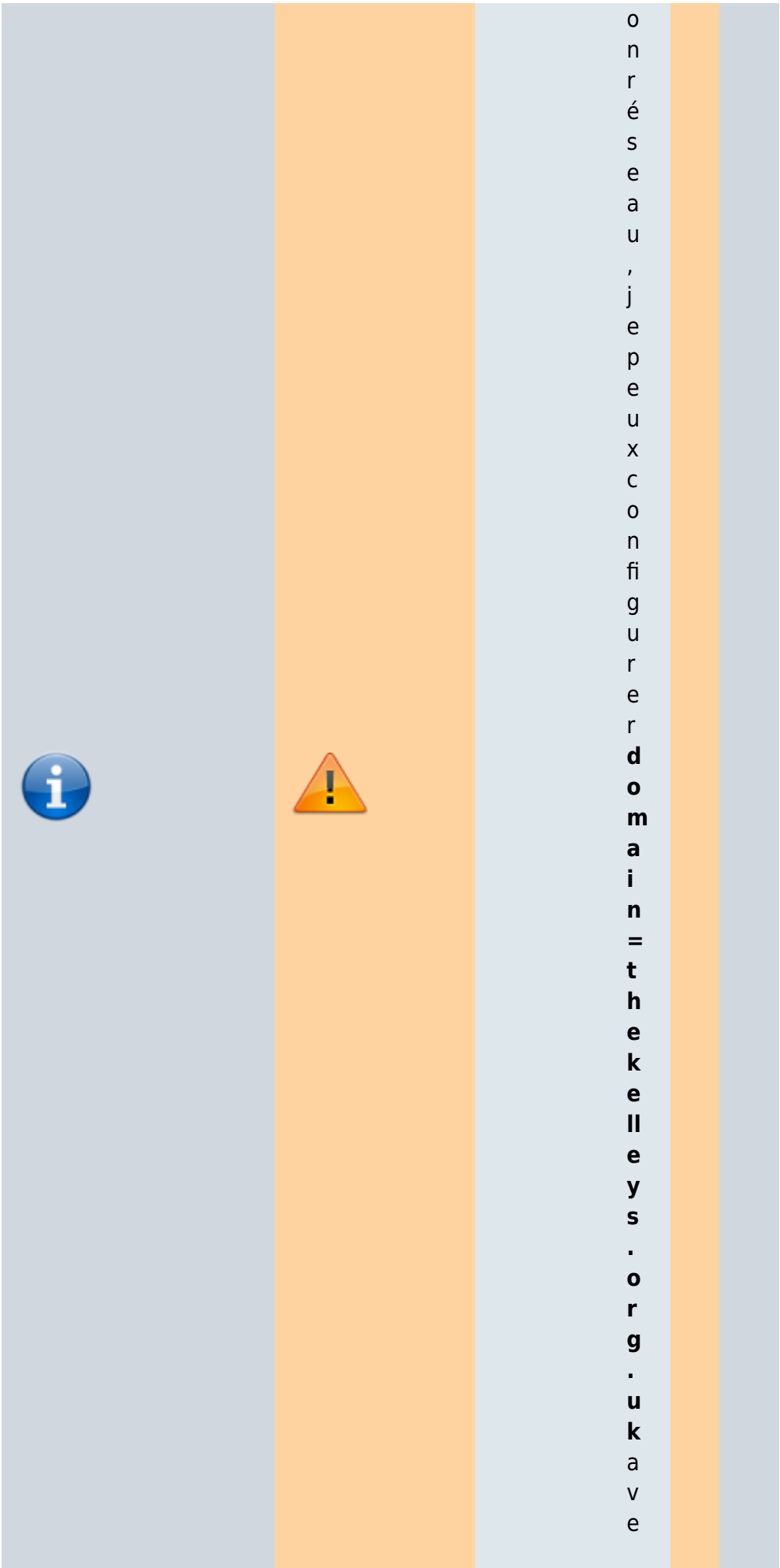
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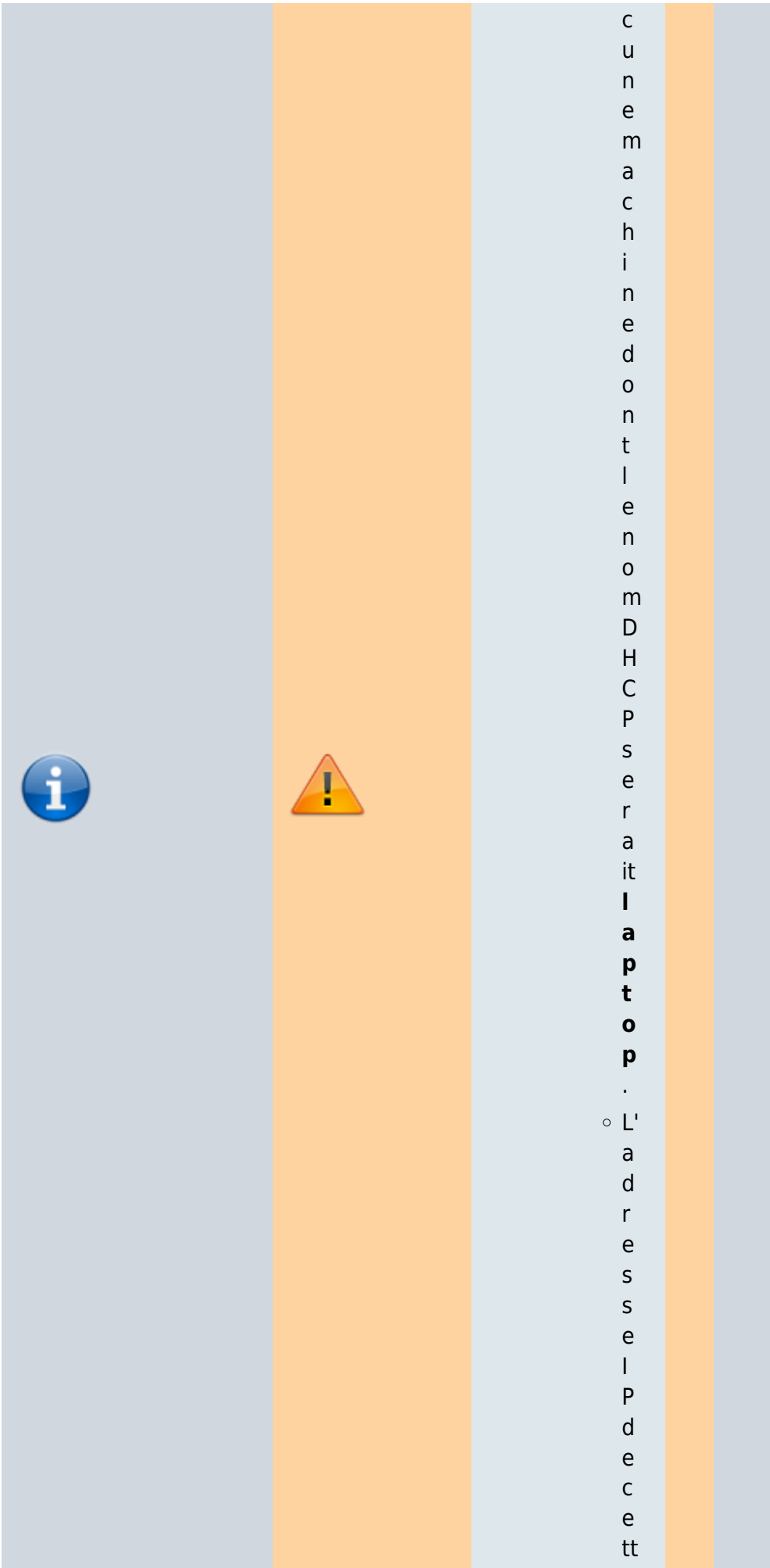


The navigation bar features a light blue background with a vertical orange highlight. On the left side, there is a blue circular icon with a white lowercase 'i'. In the center, there is a yellow triangular warning icon with a black exclamation mark. On the right side, the following menu items are listed vertically: 'v', 'e', 'c', '<', 'd', 'o', 'm', 'a', 'i', 'n', 'e', '>', '◦ l', 'e', 's', 'n', 'o', 'm', 's', 'd', '-', 'h', 'ô', 't', 'e', 's', 'n', 'e', 'p', 'o', 's', 's', 'é', 'd', 'a', 'n', 't', 'p', 'a', 's', 'd', 'e', 'n', 'o', 'm', 'd', 'e', 'd', 'o', 'm'.

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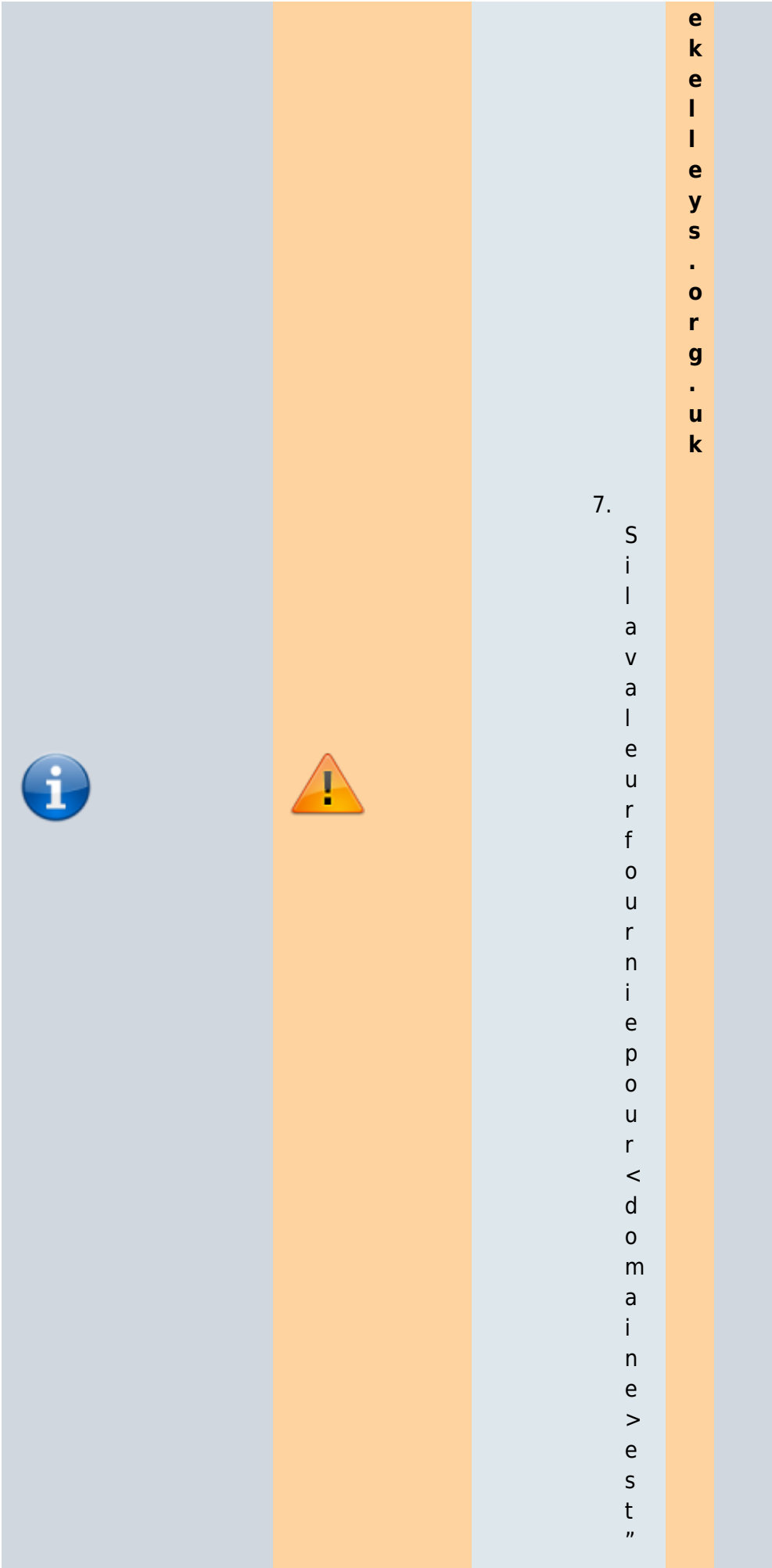
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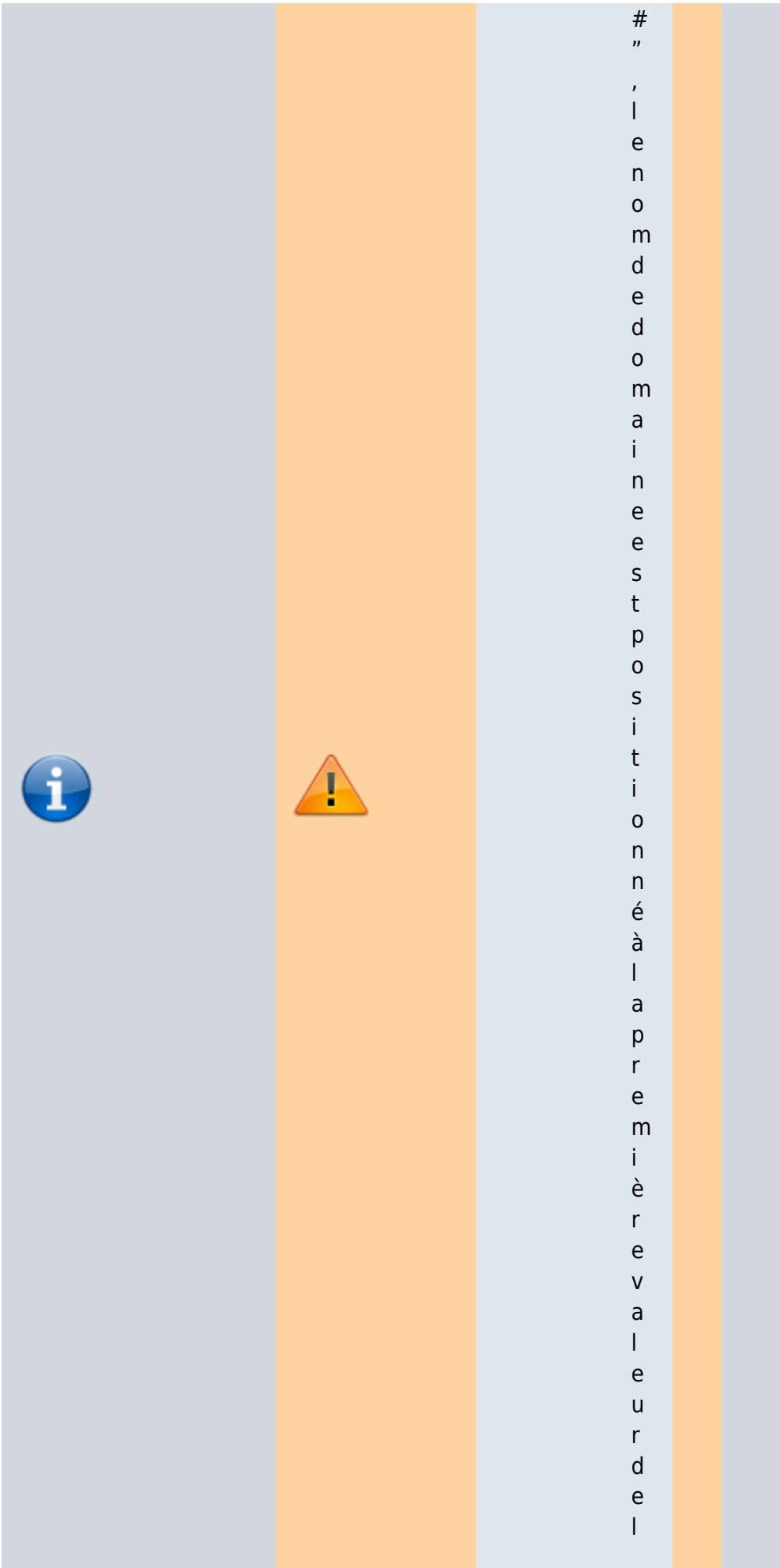
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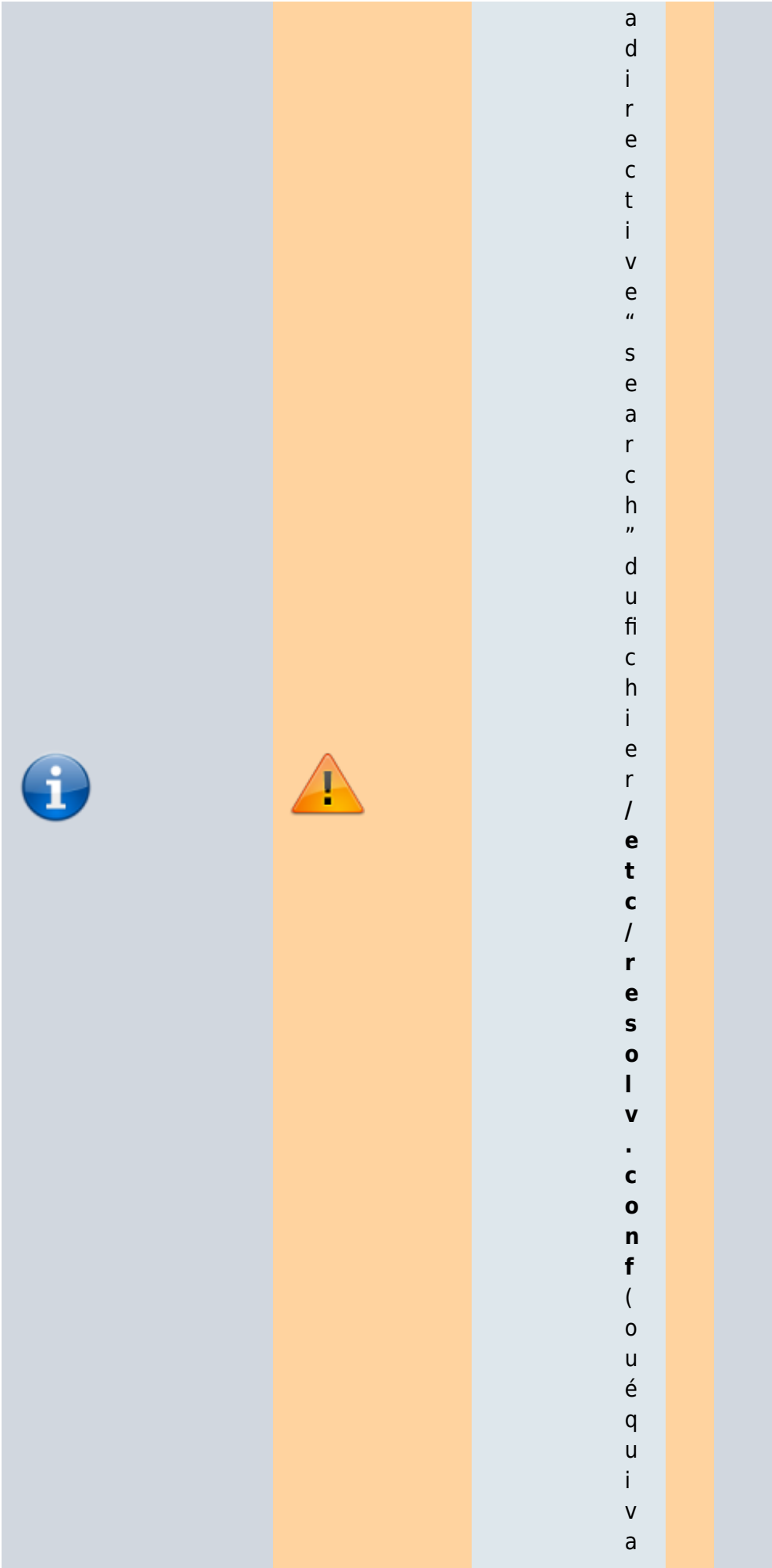
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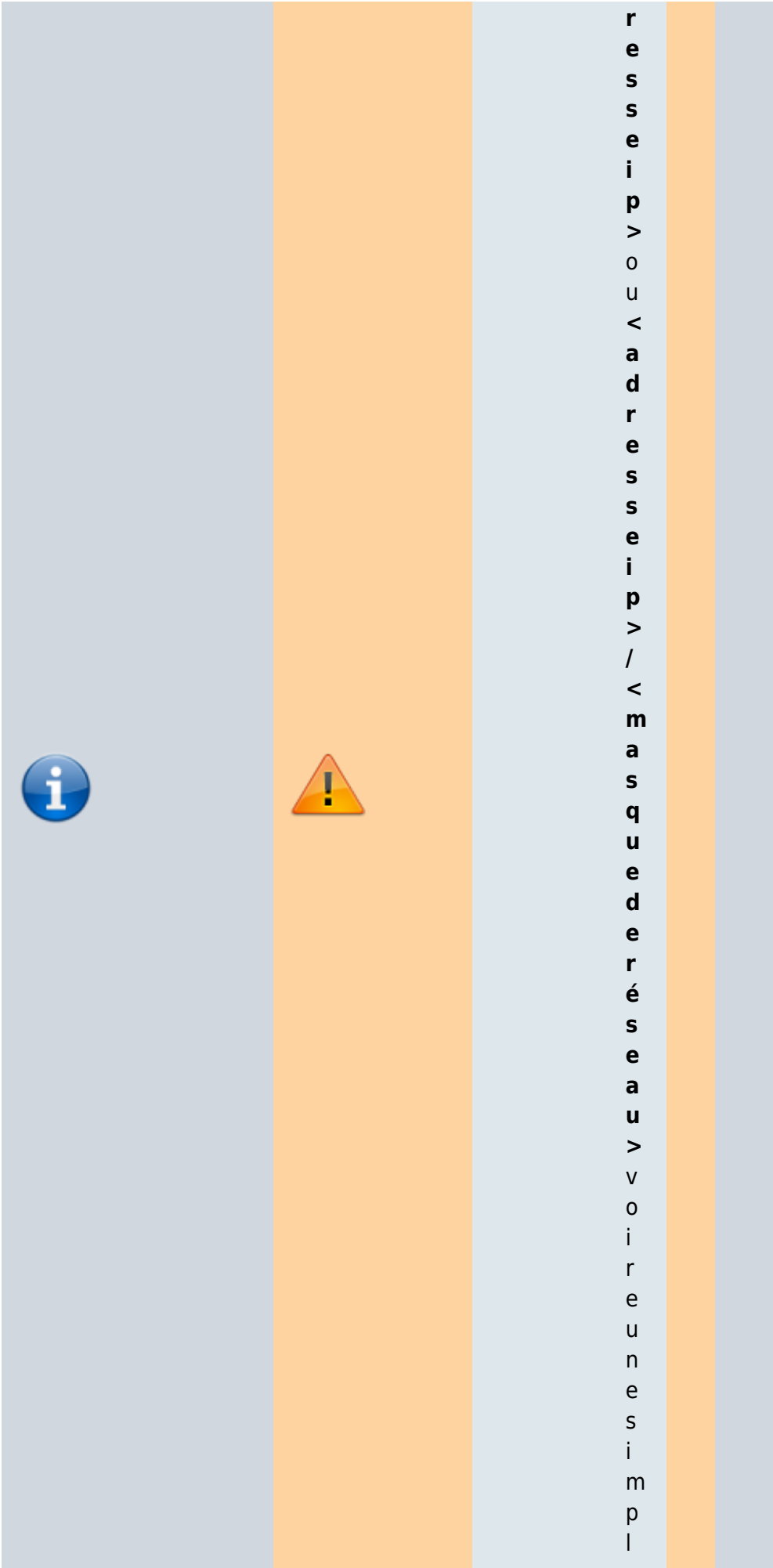
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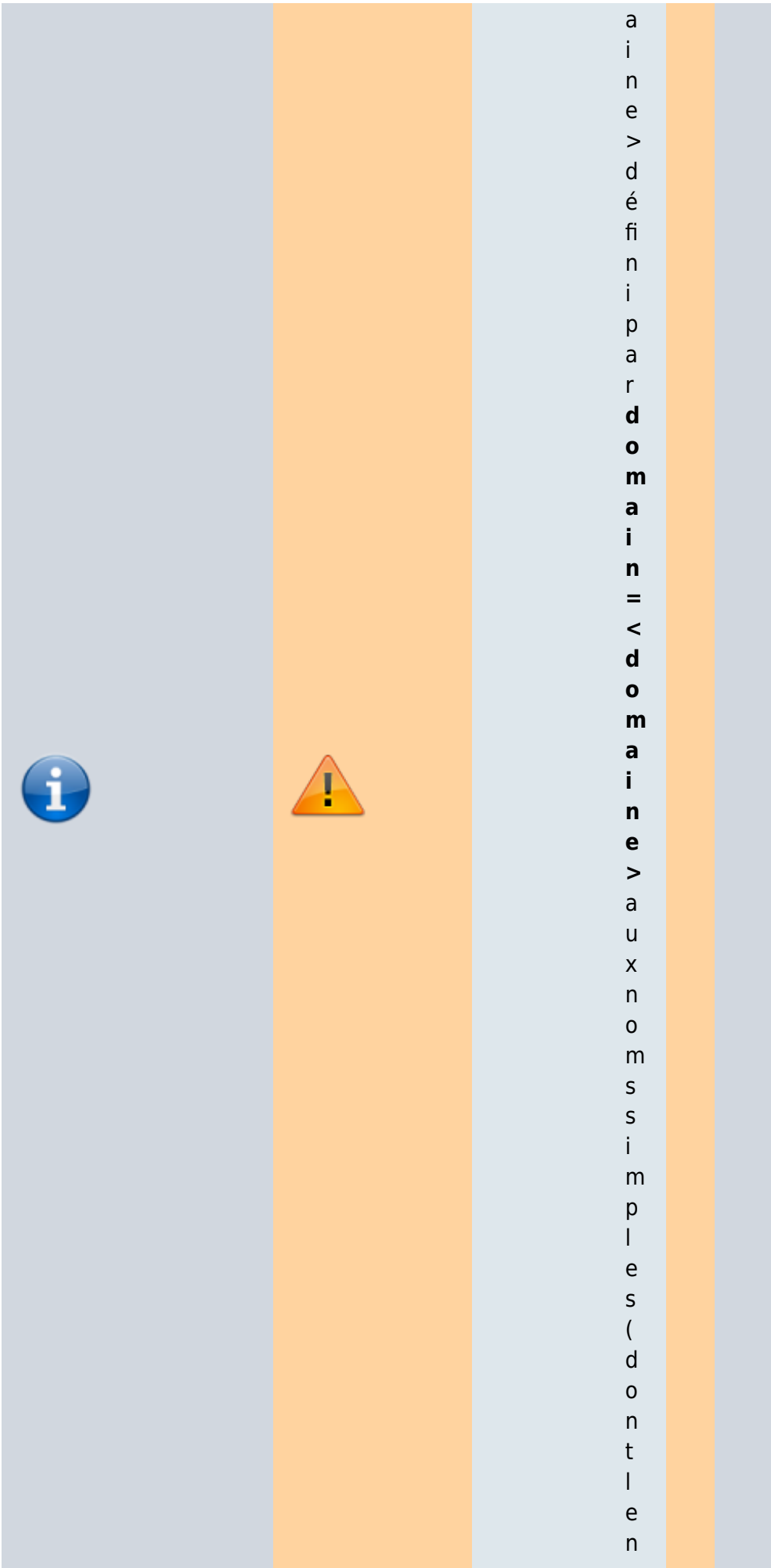
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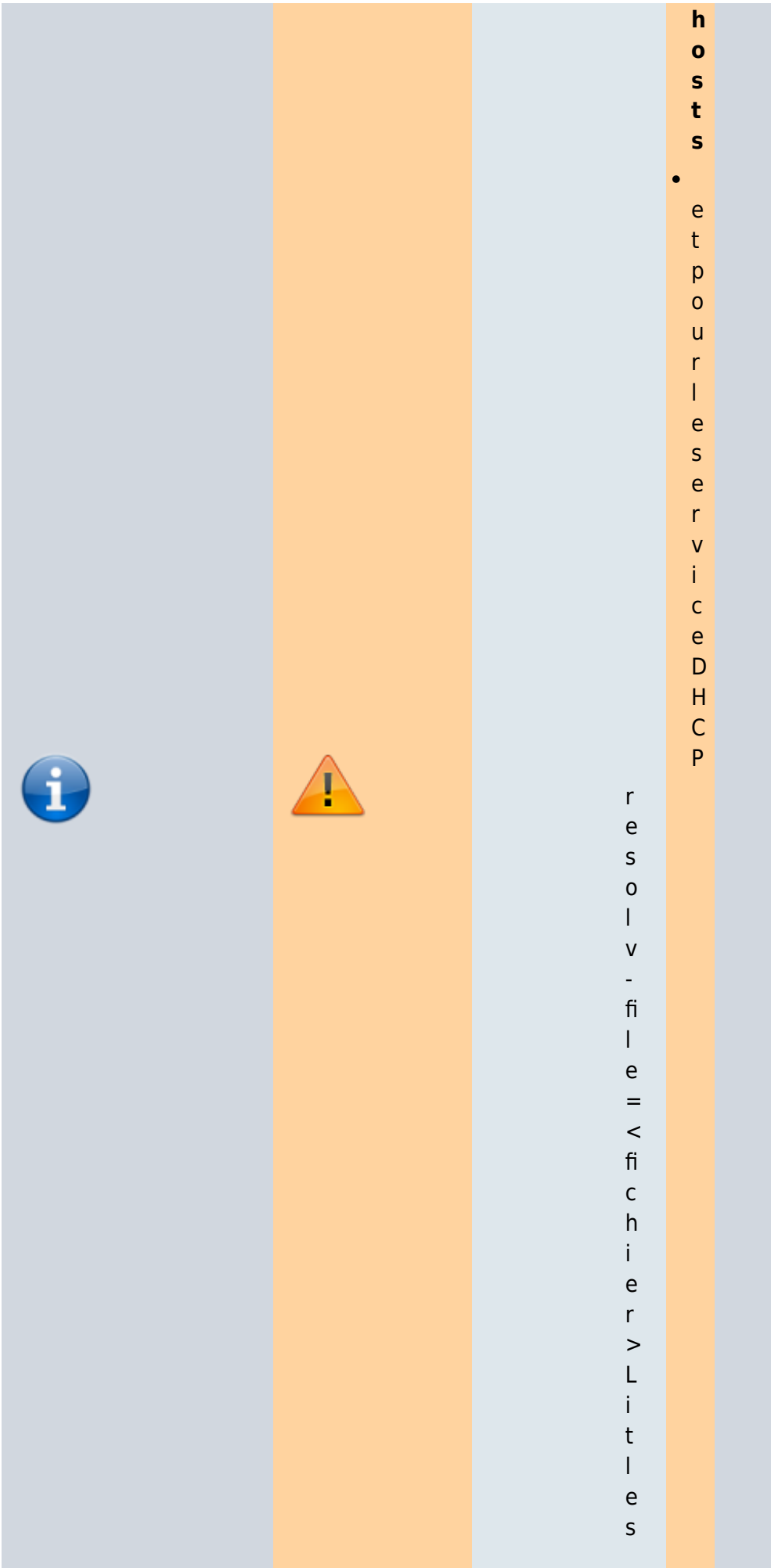


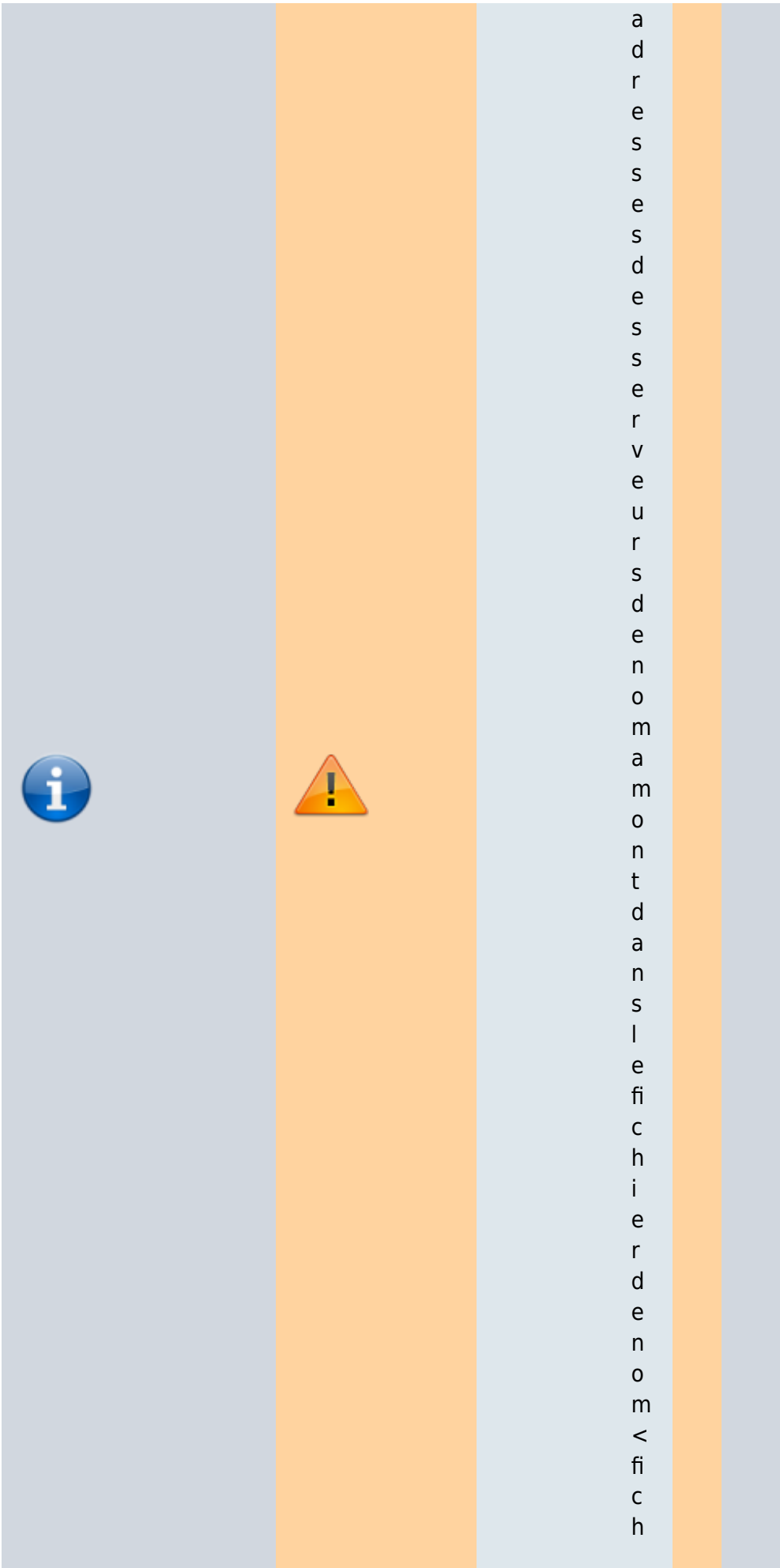
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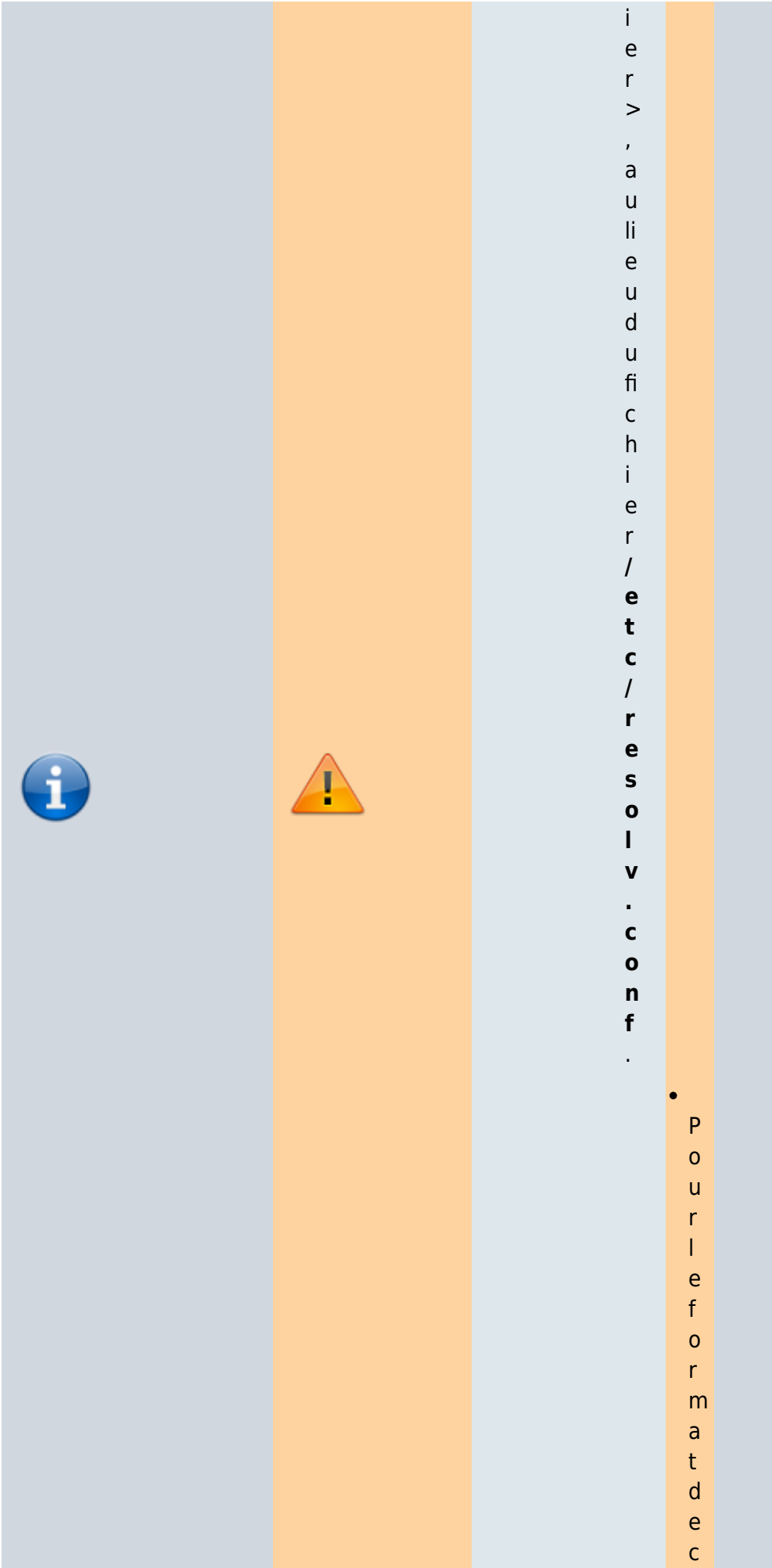


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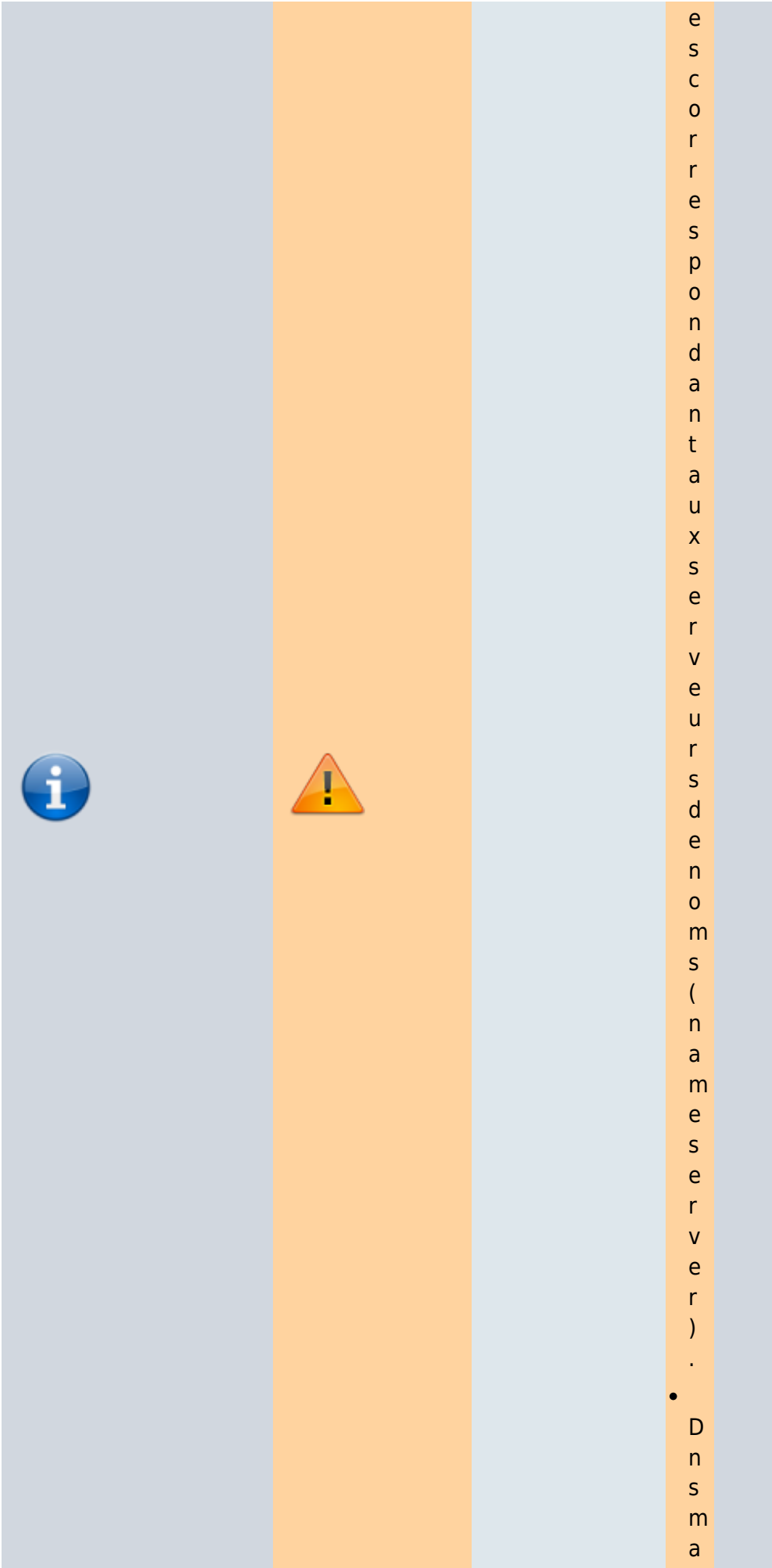


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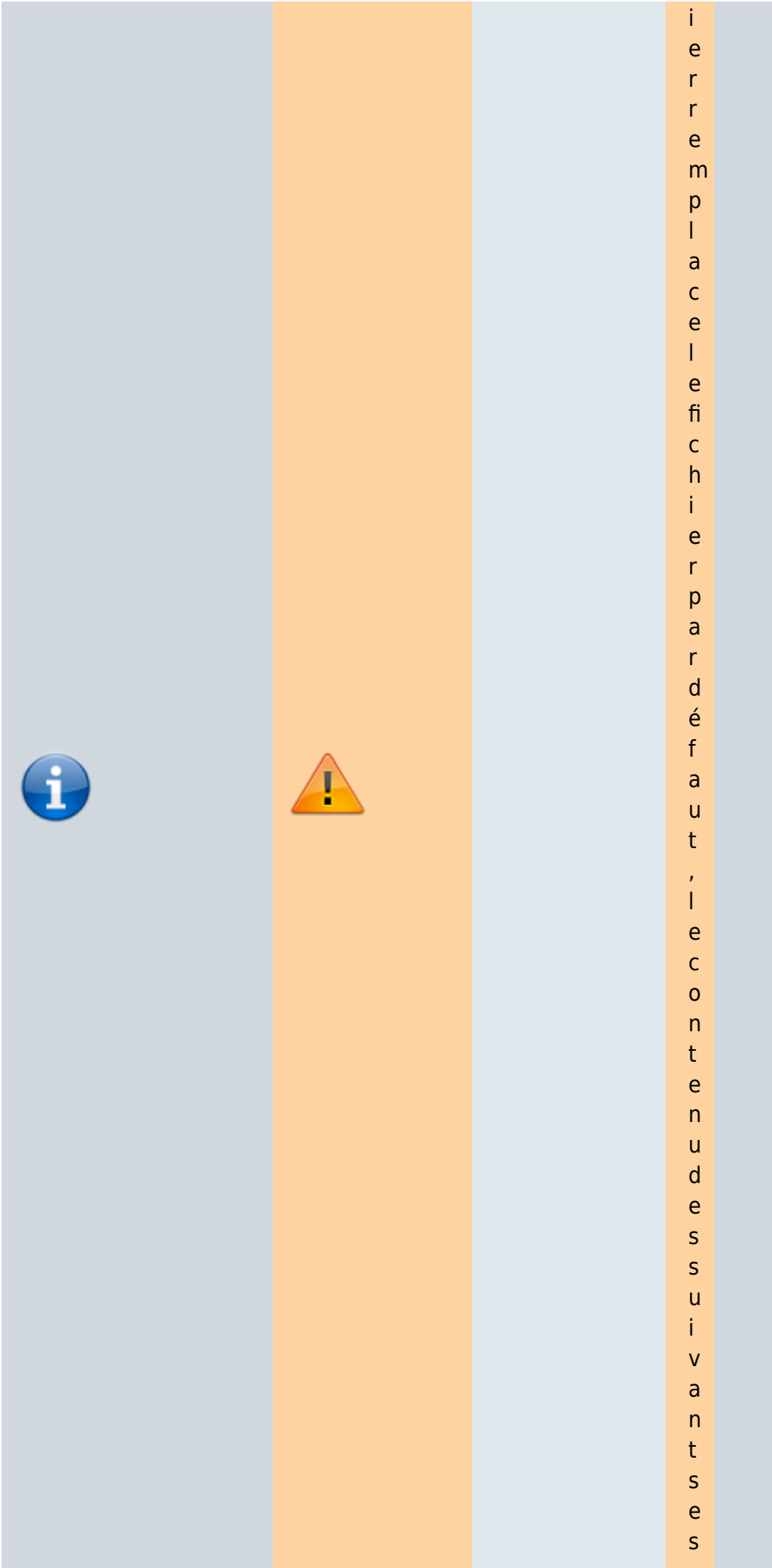




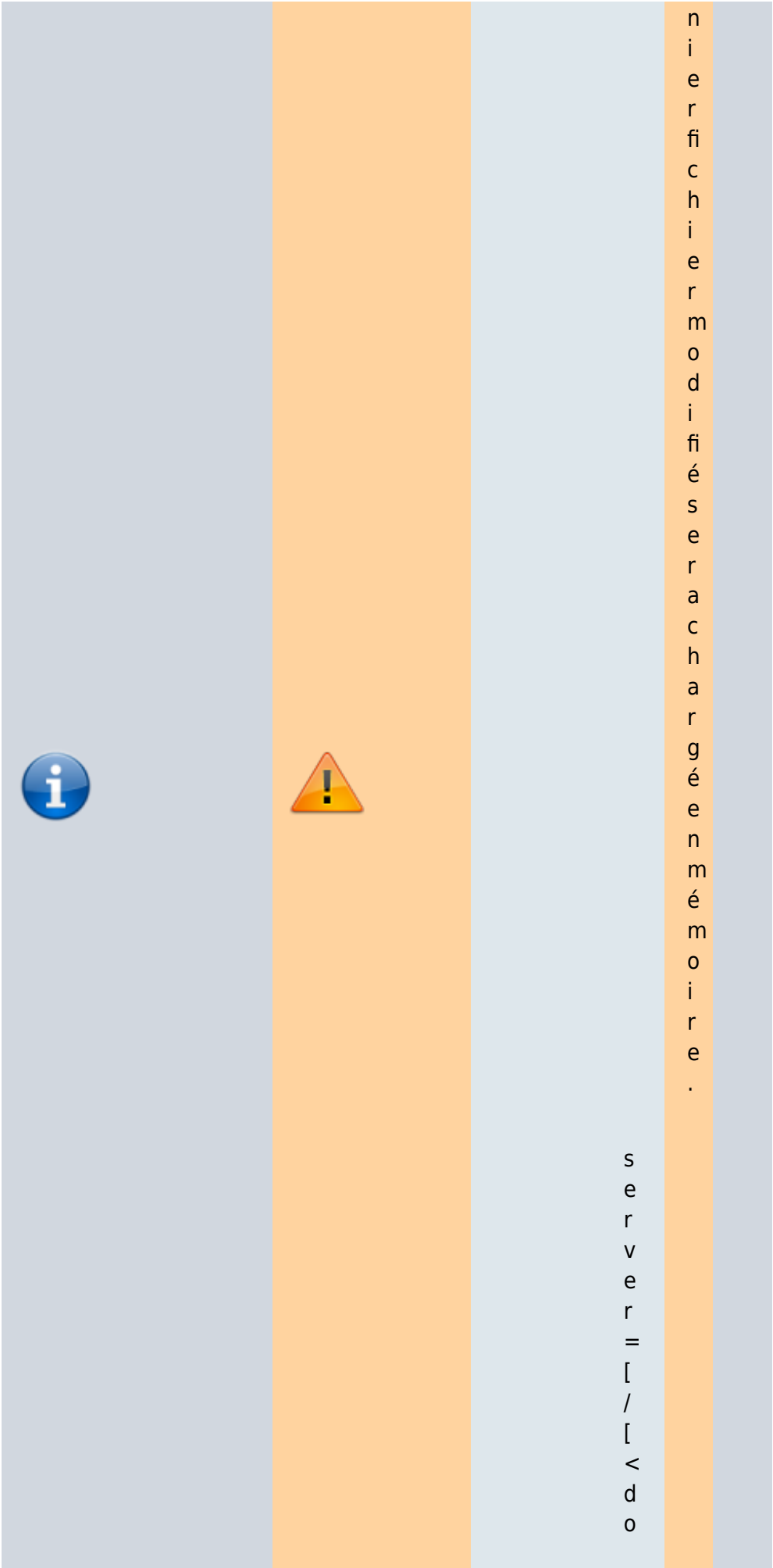
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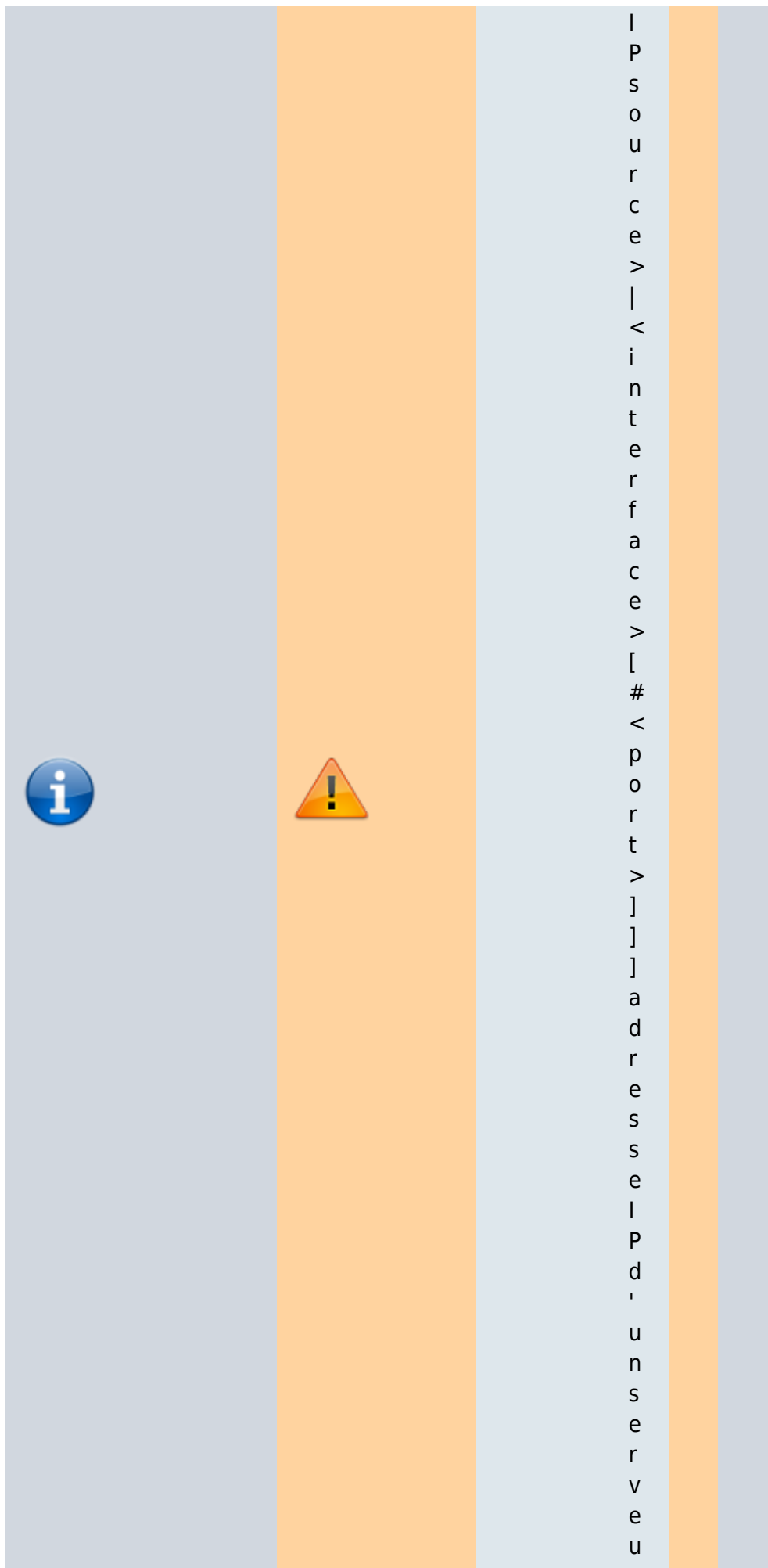




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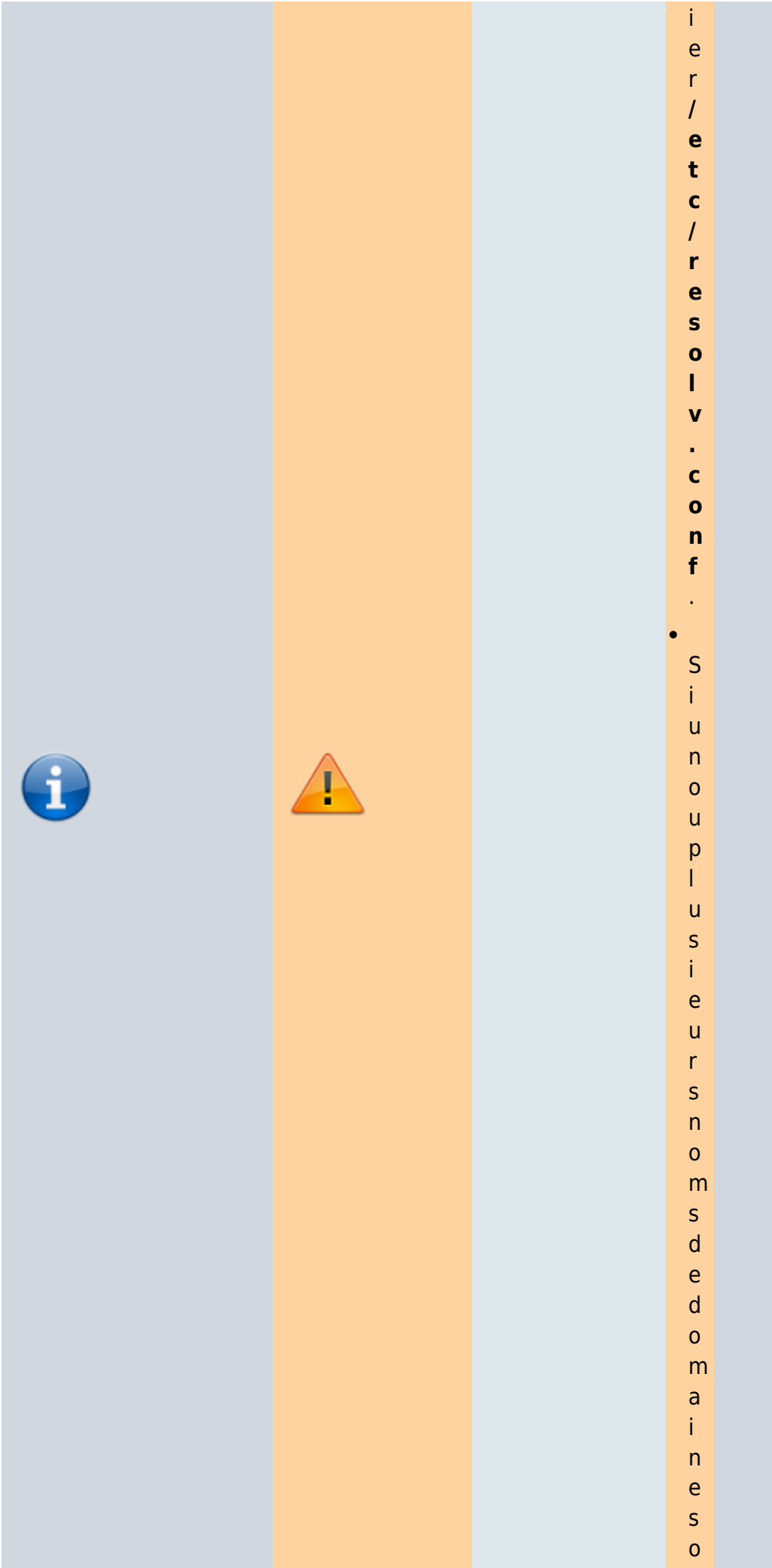
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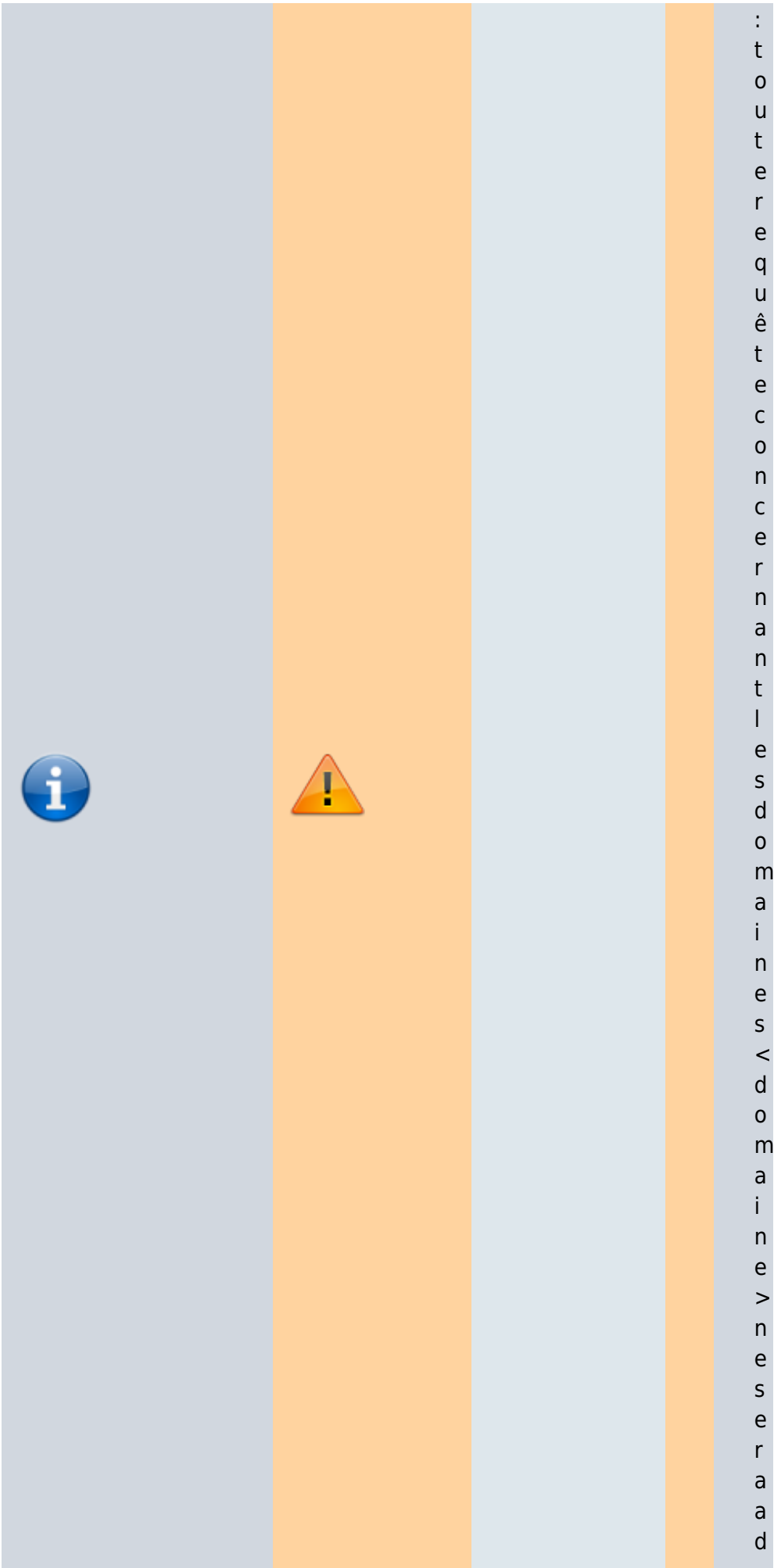
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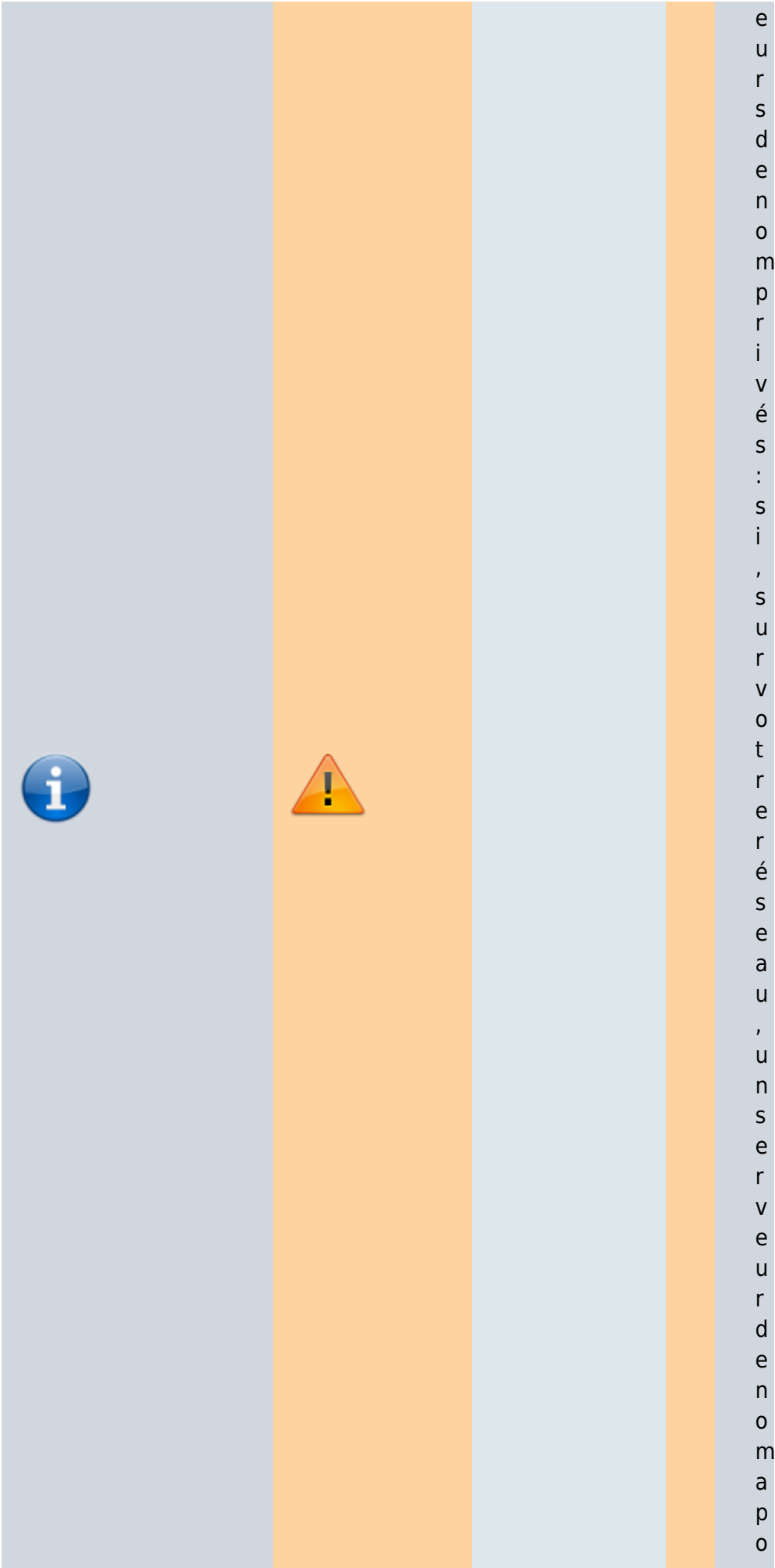


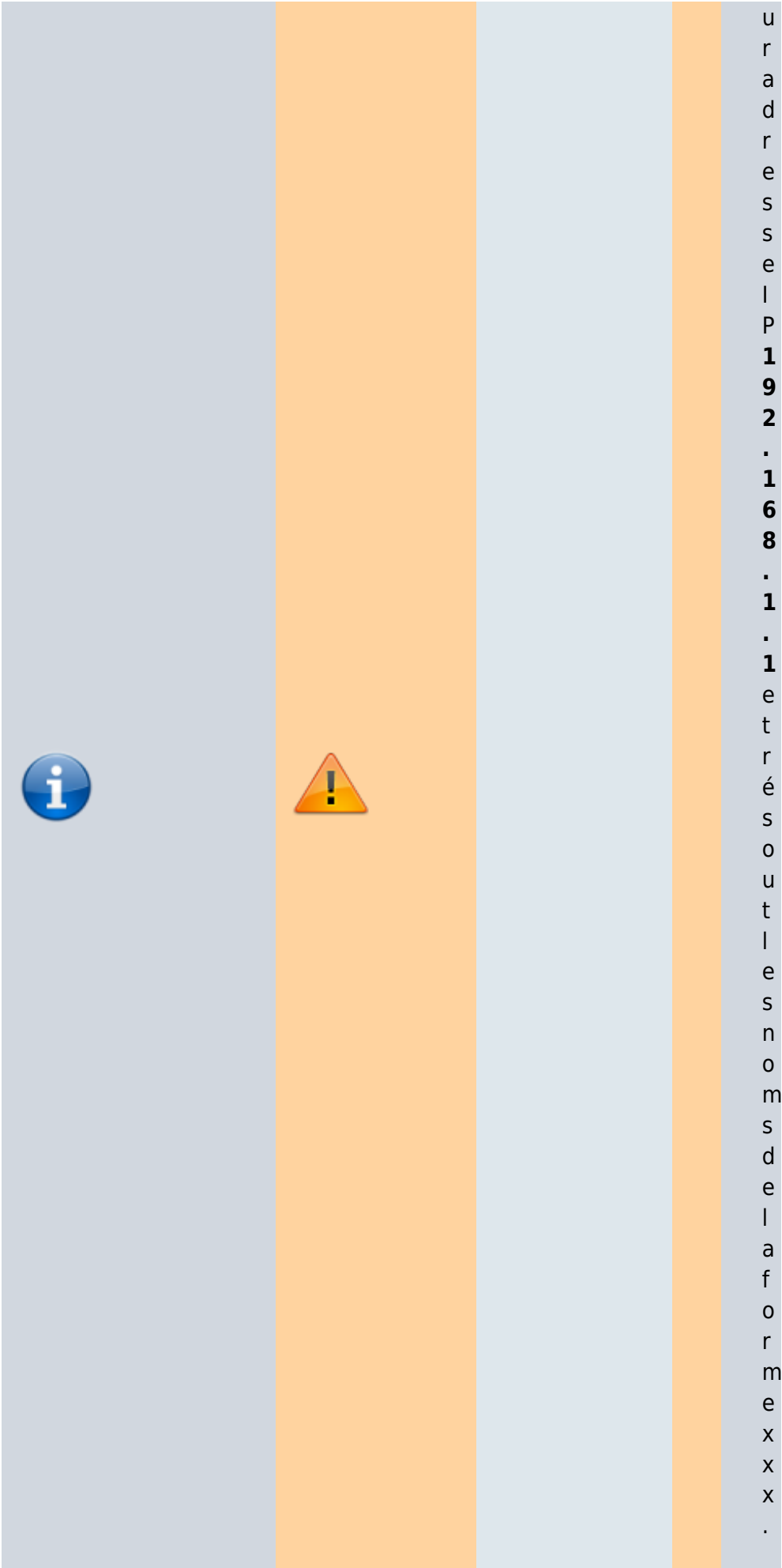
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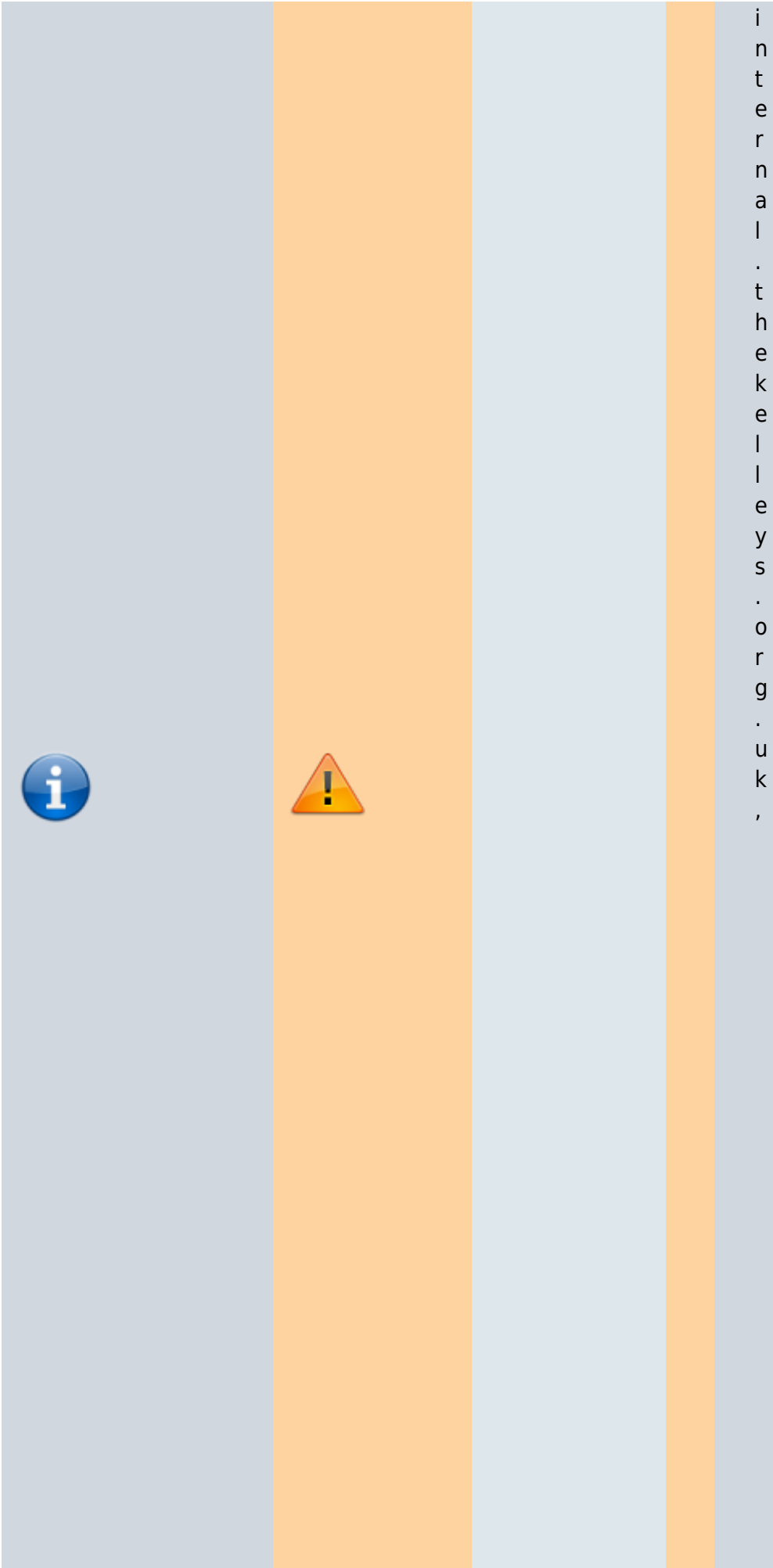


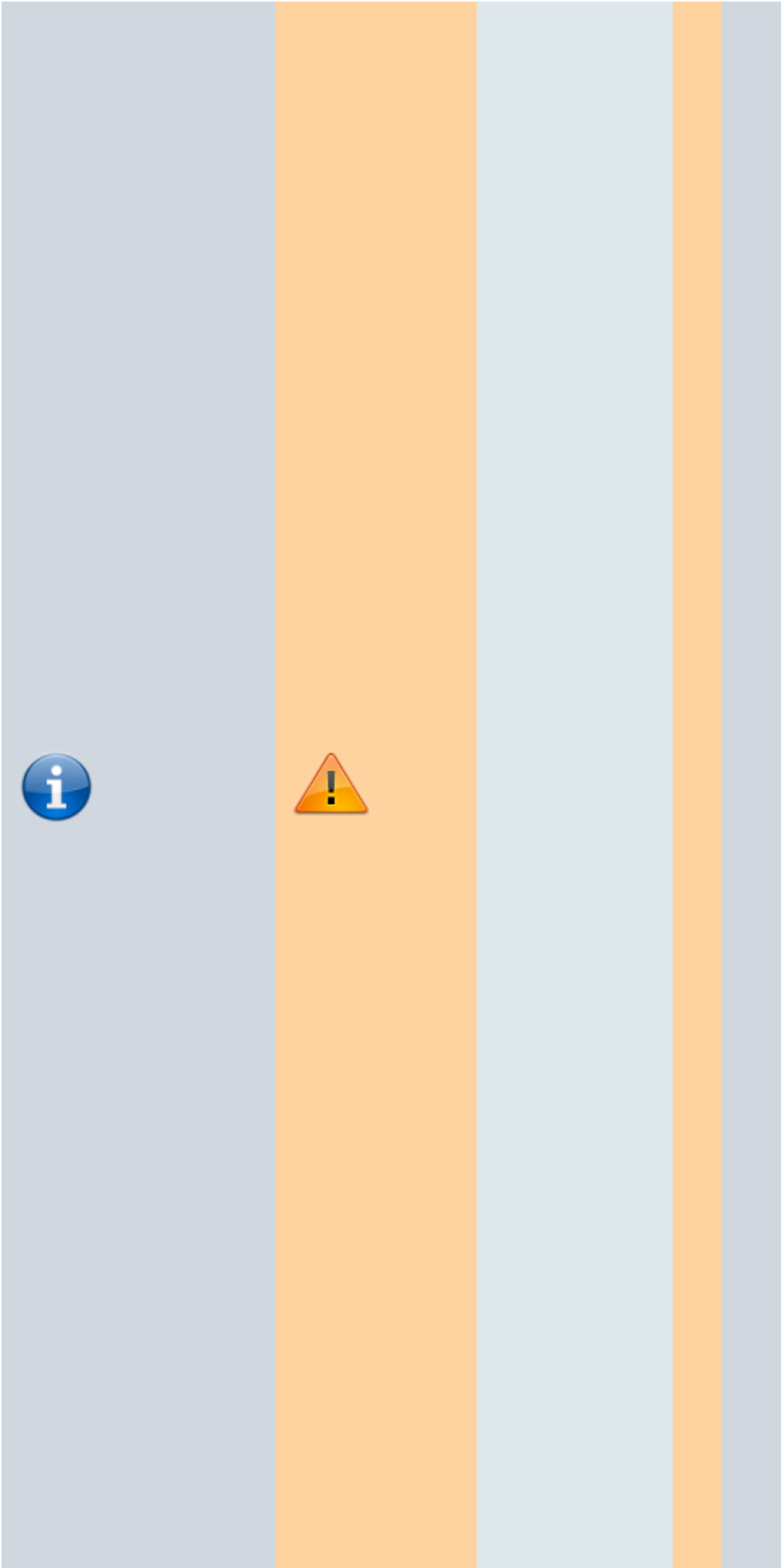
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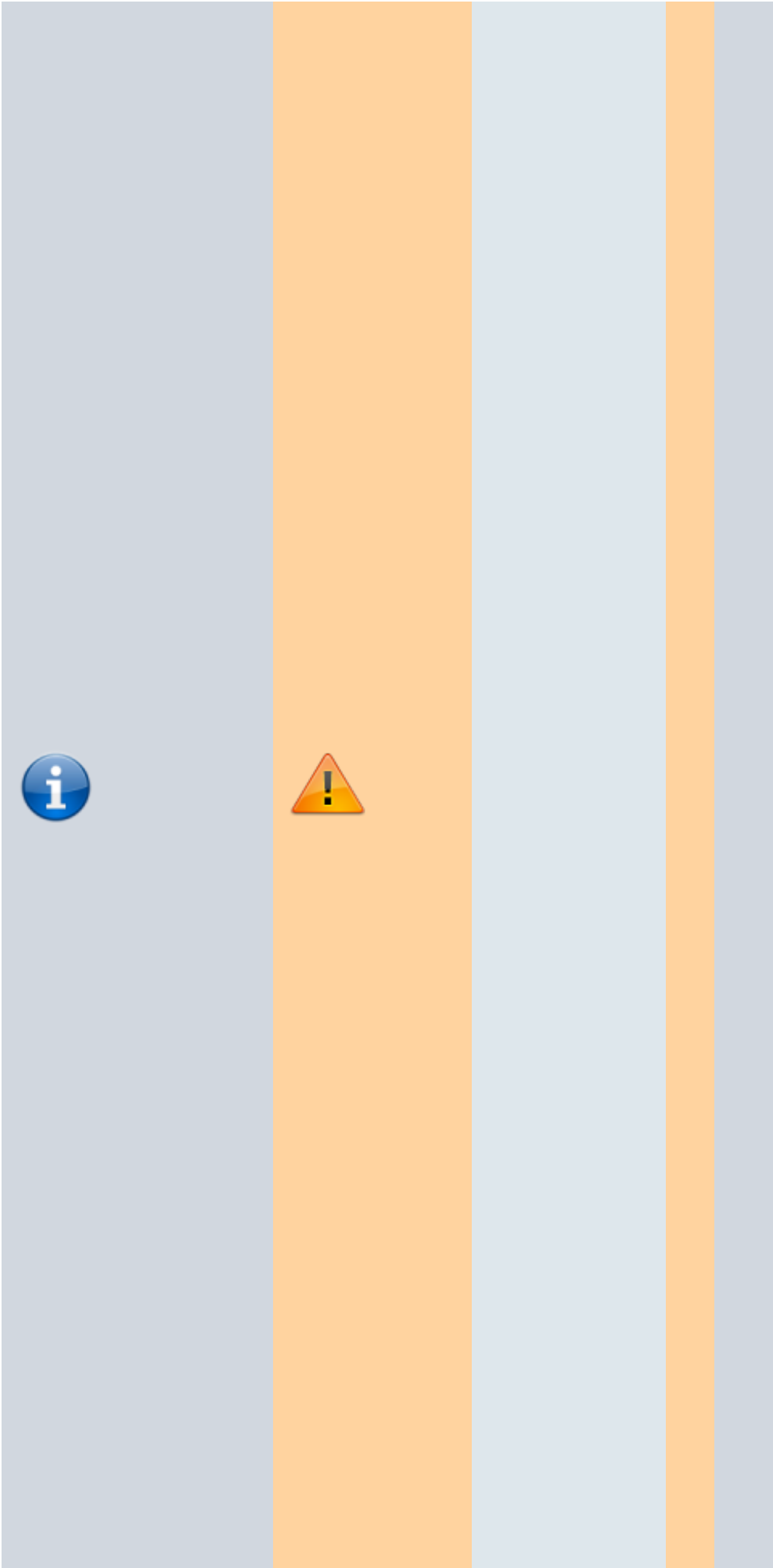


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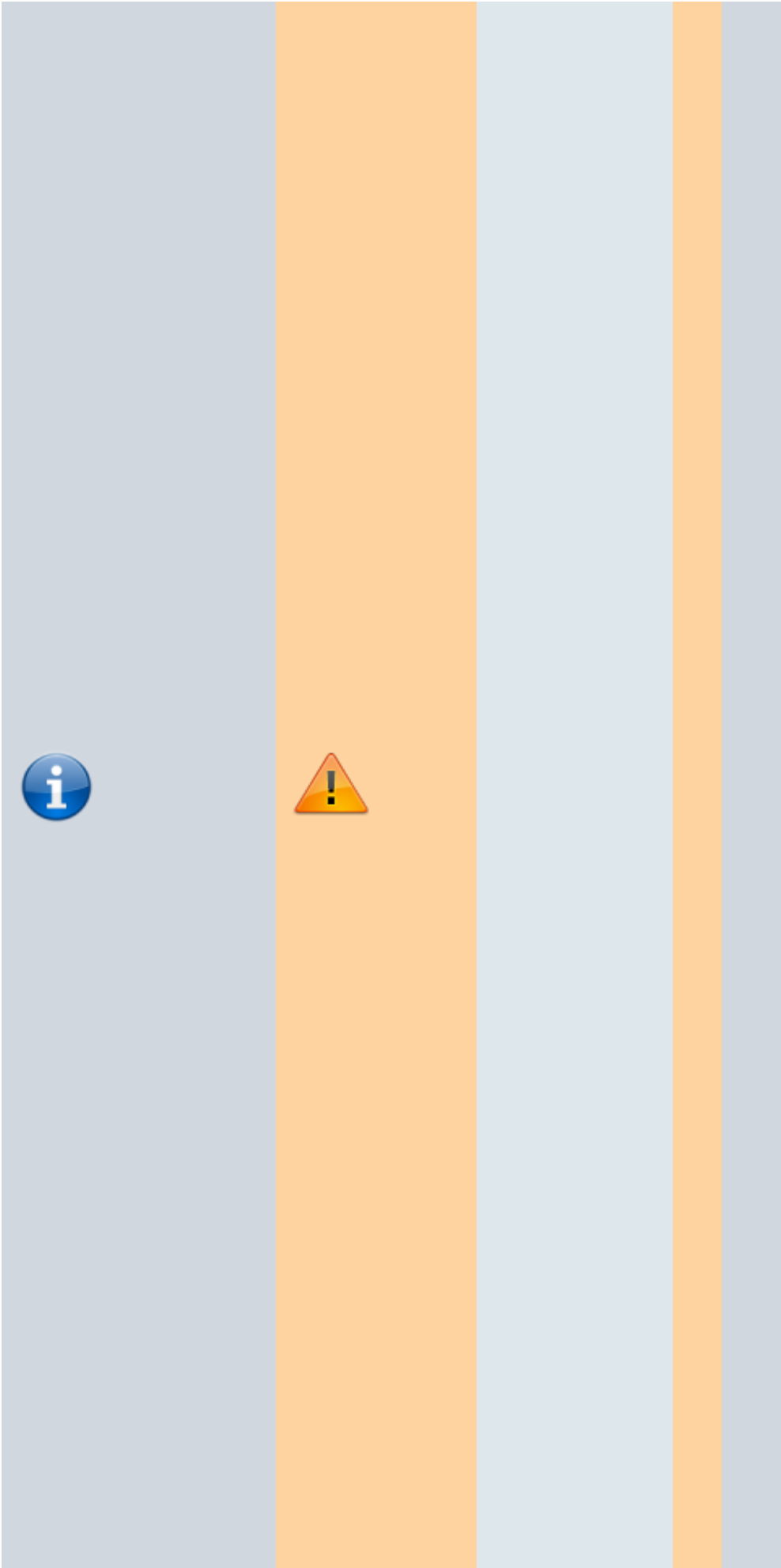




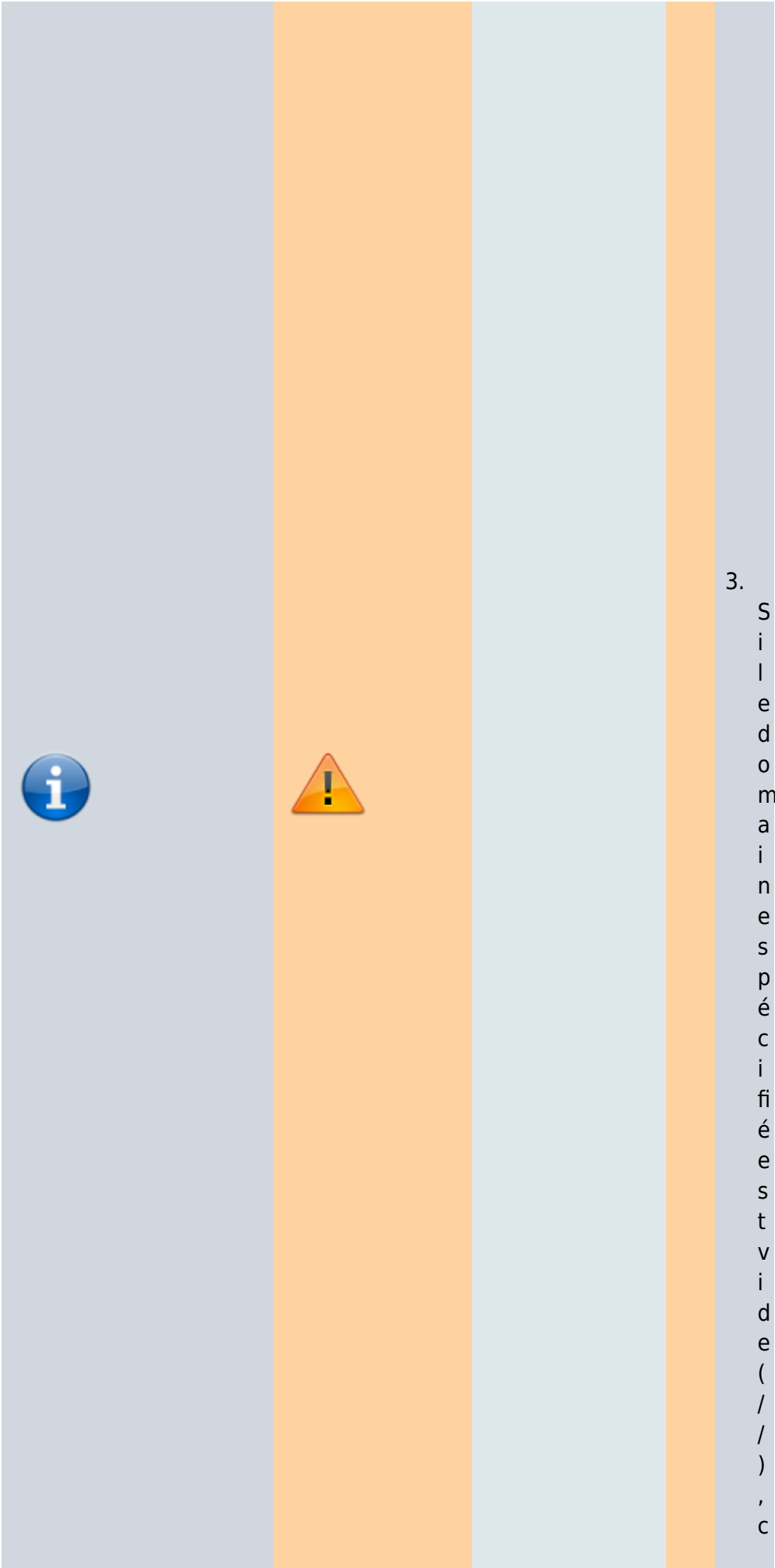
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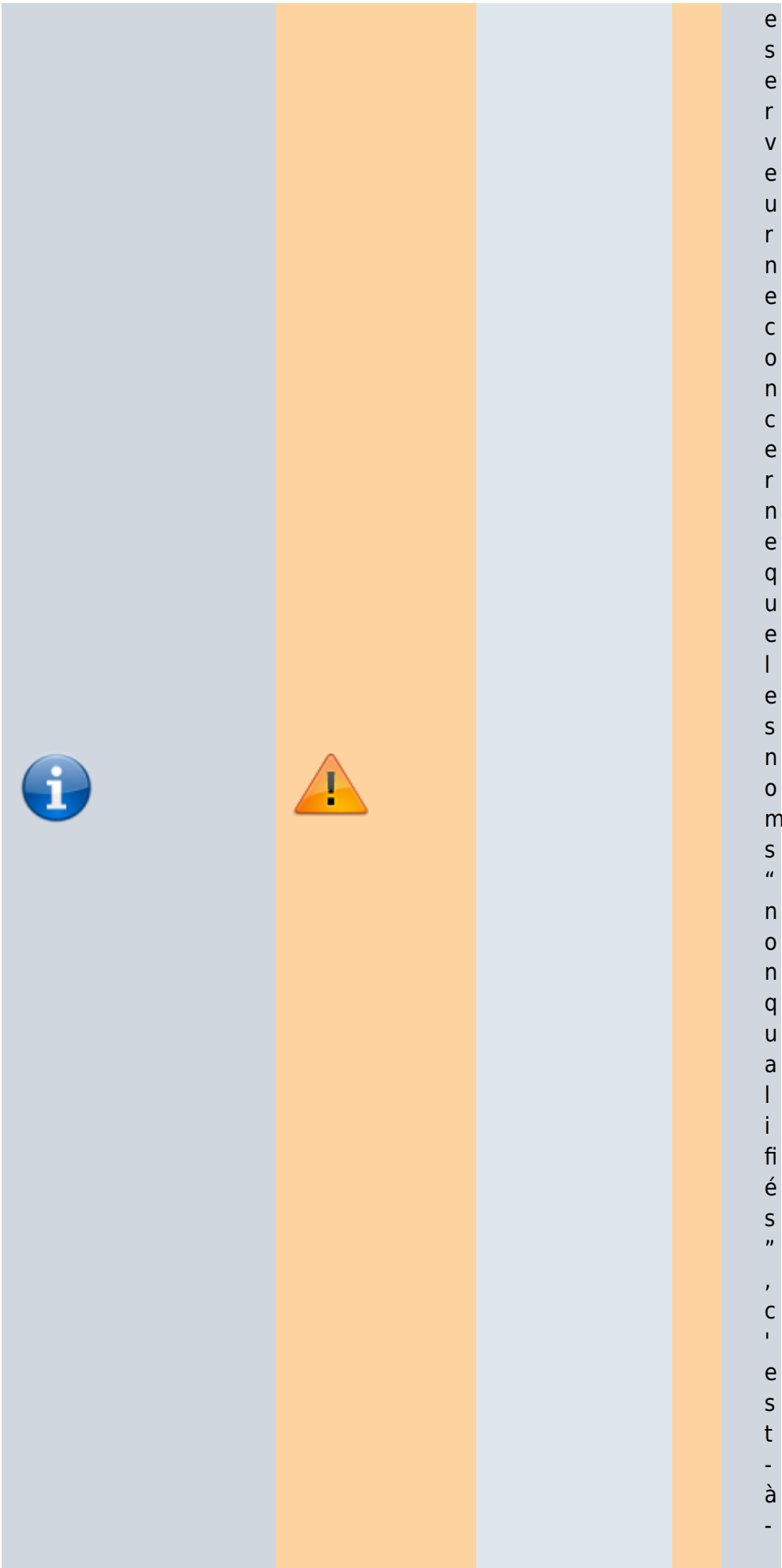


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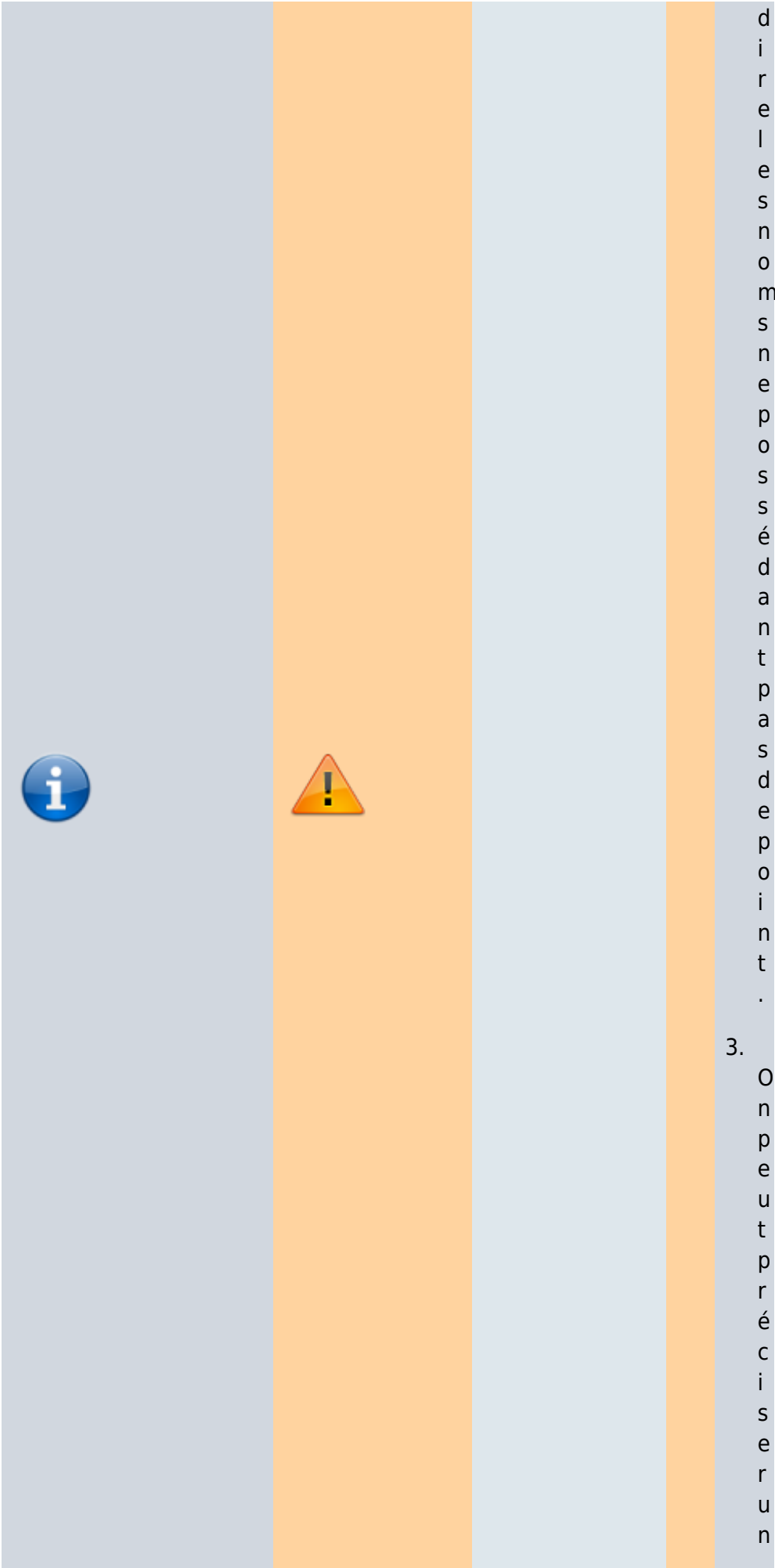


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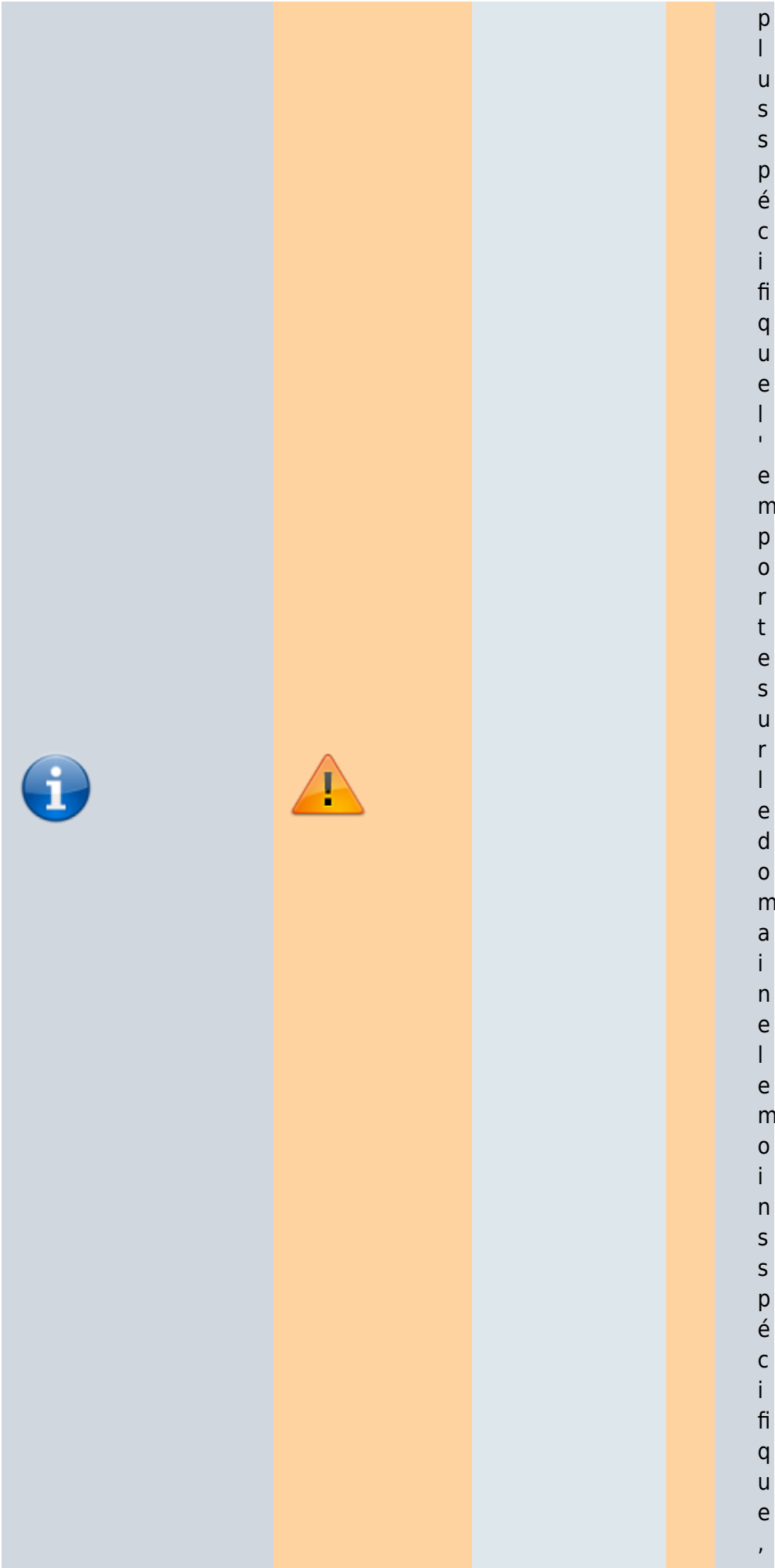


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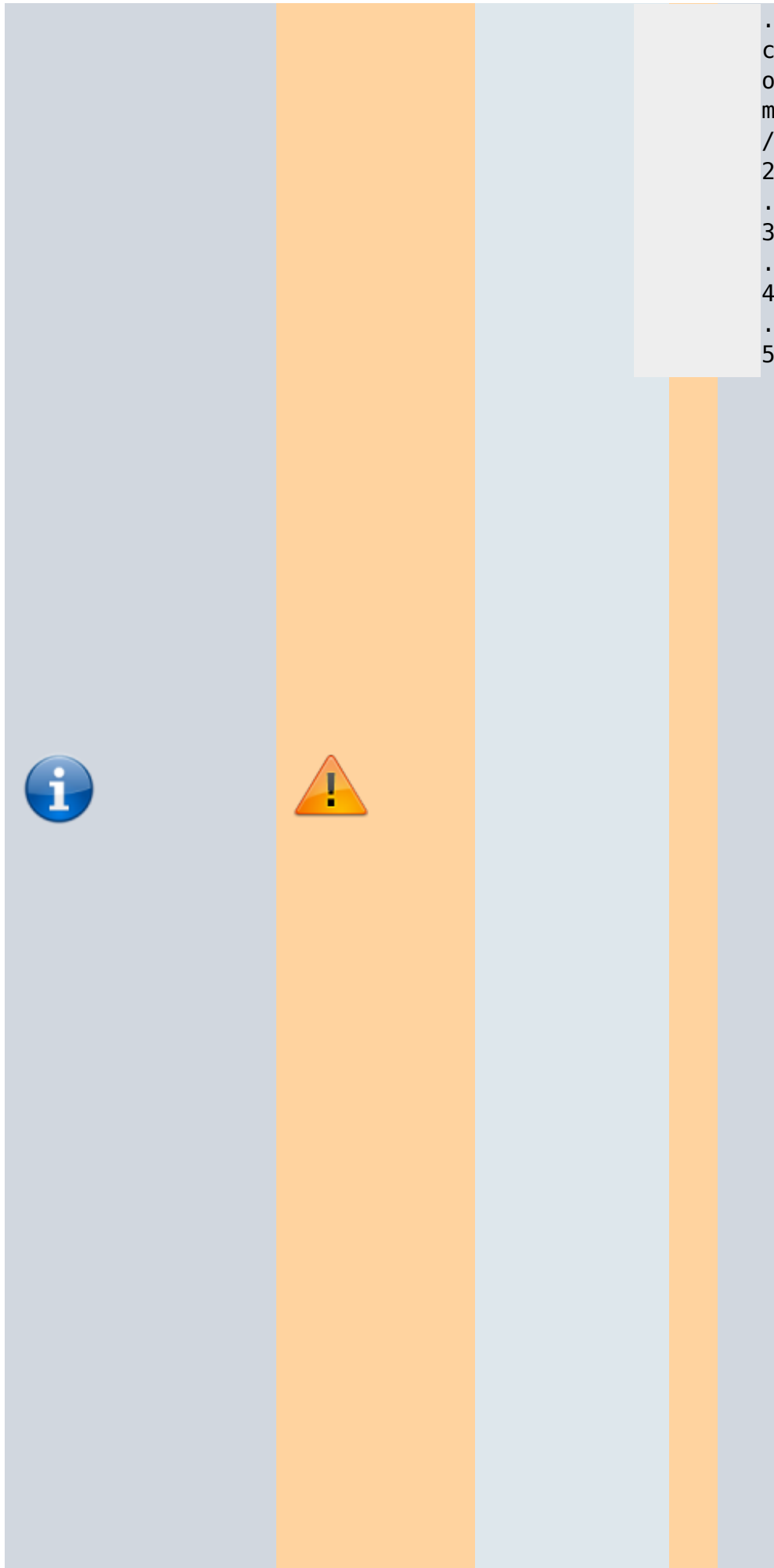
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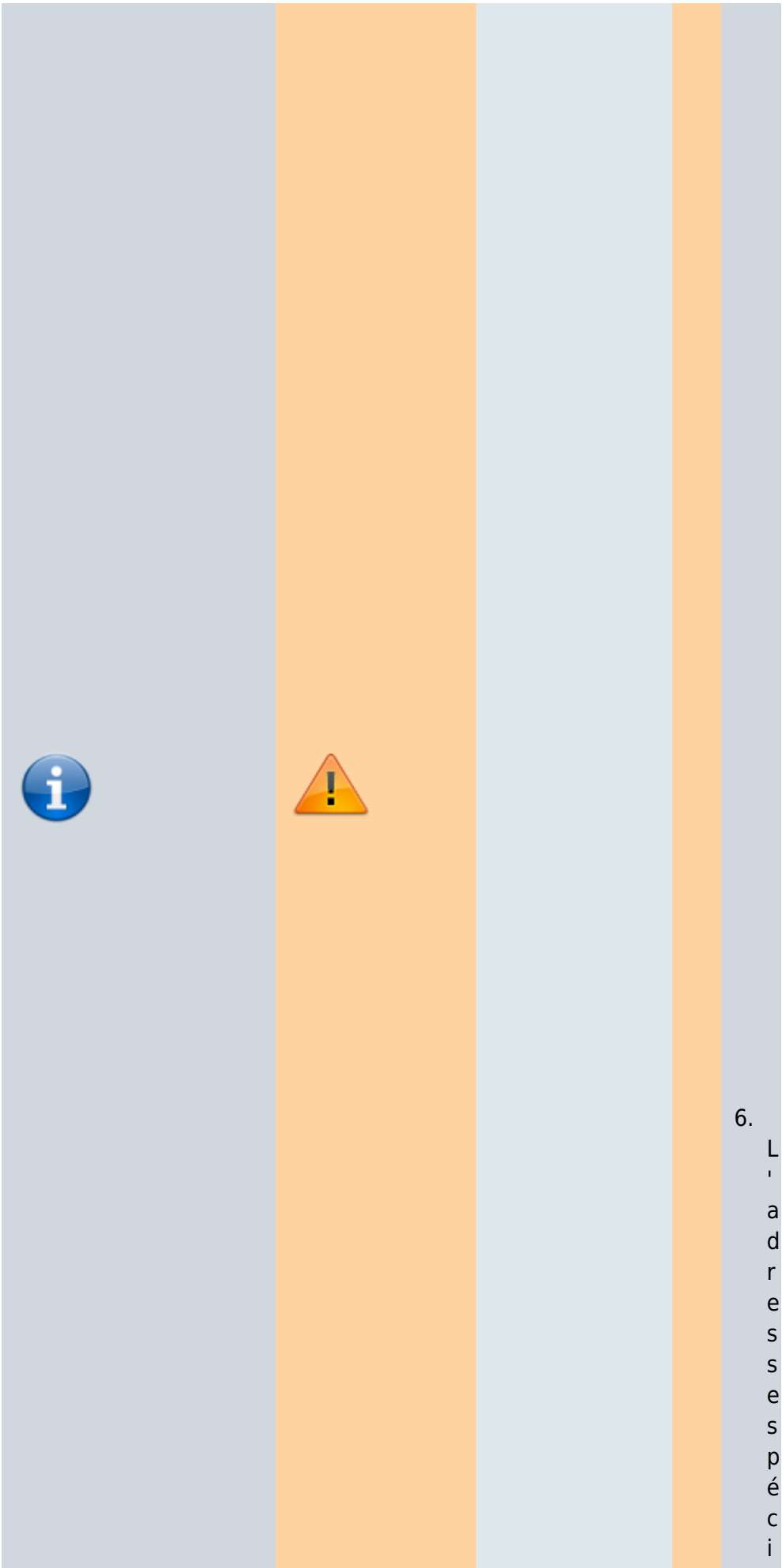


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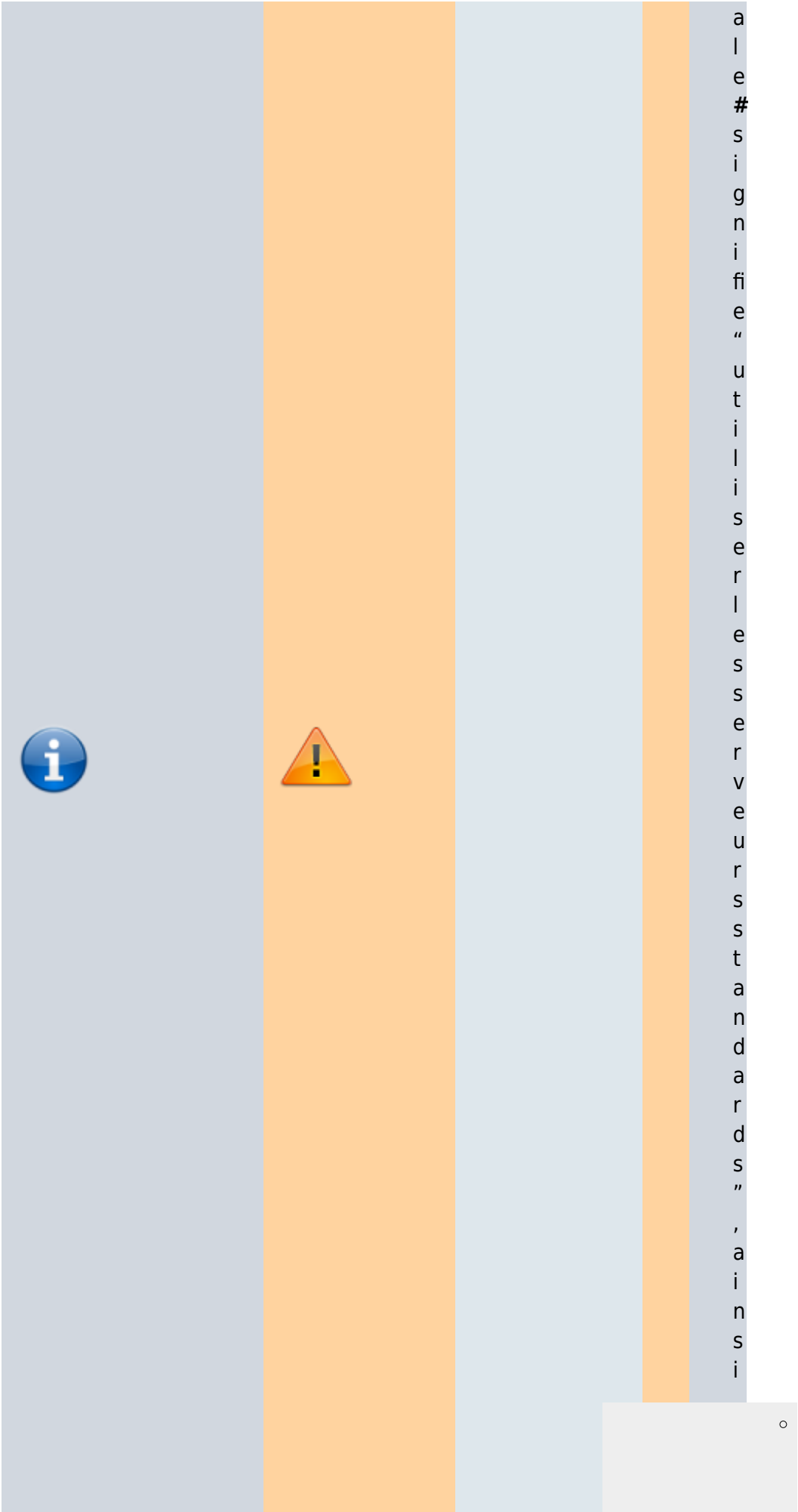
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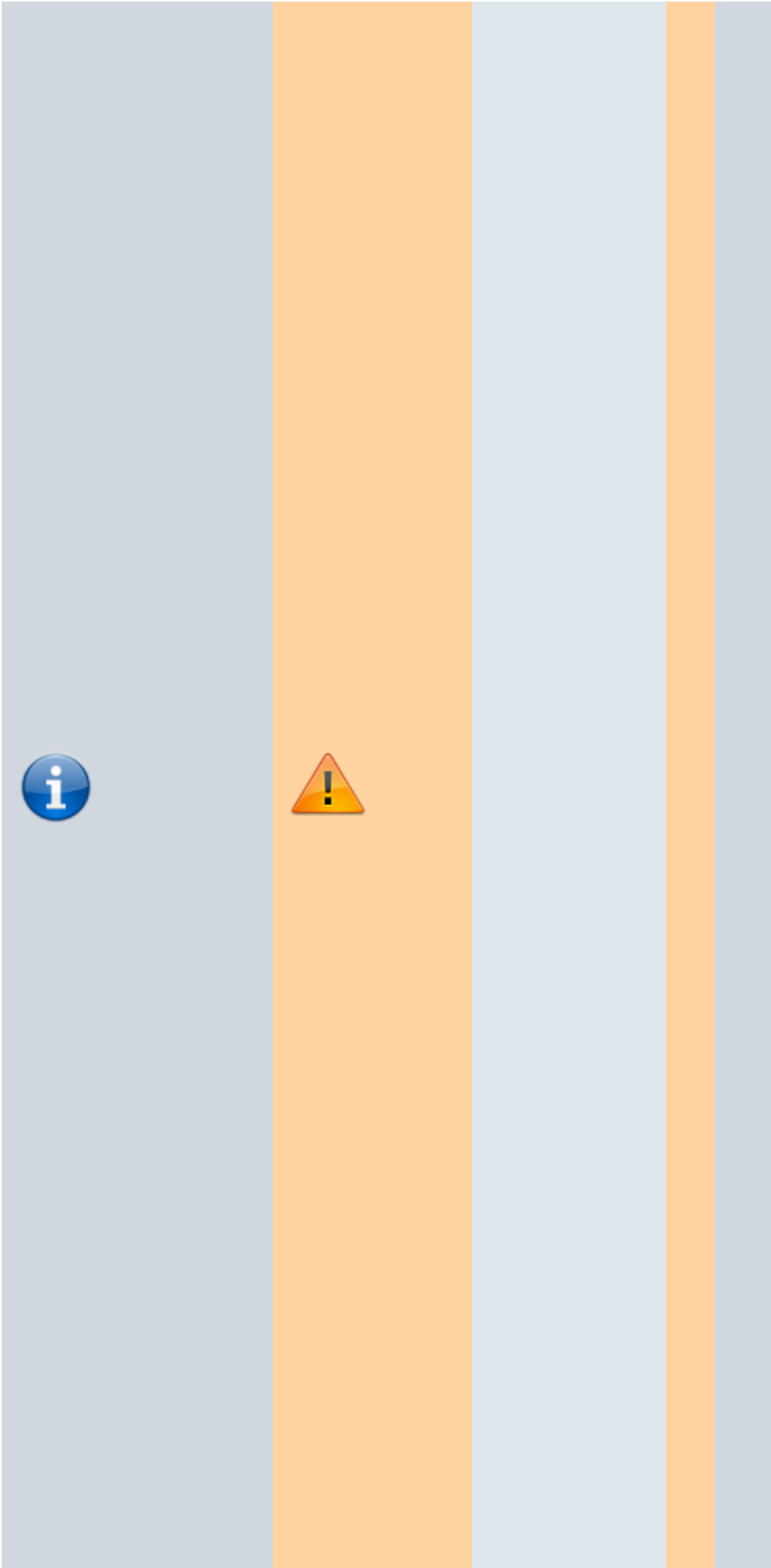
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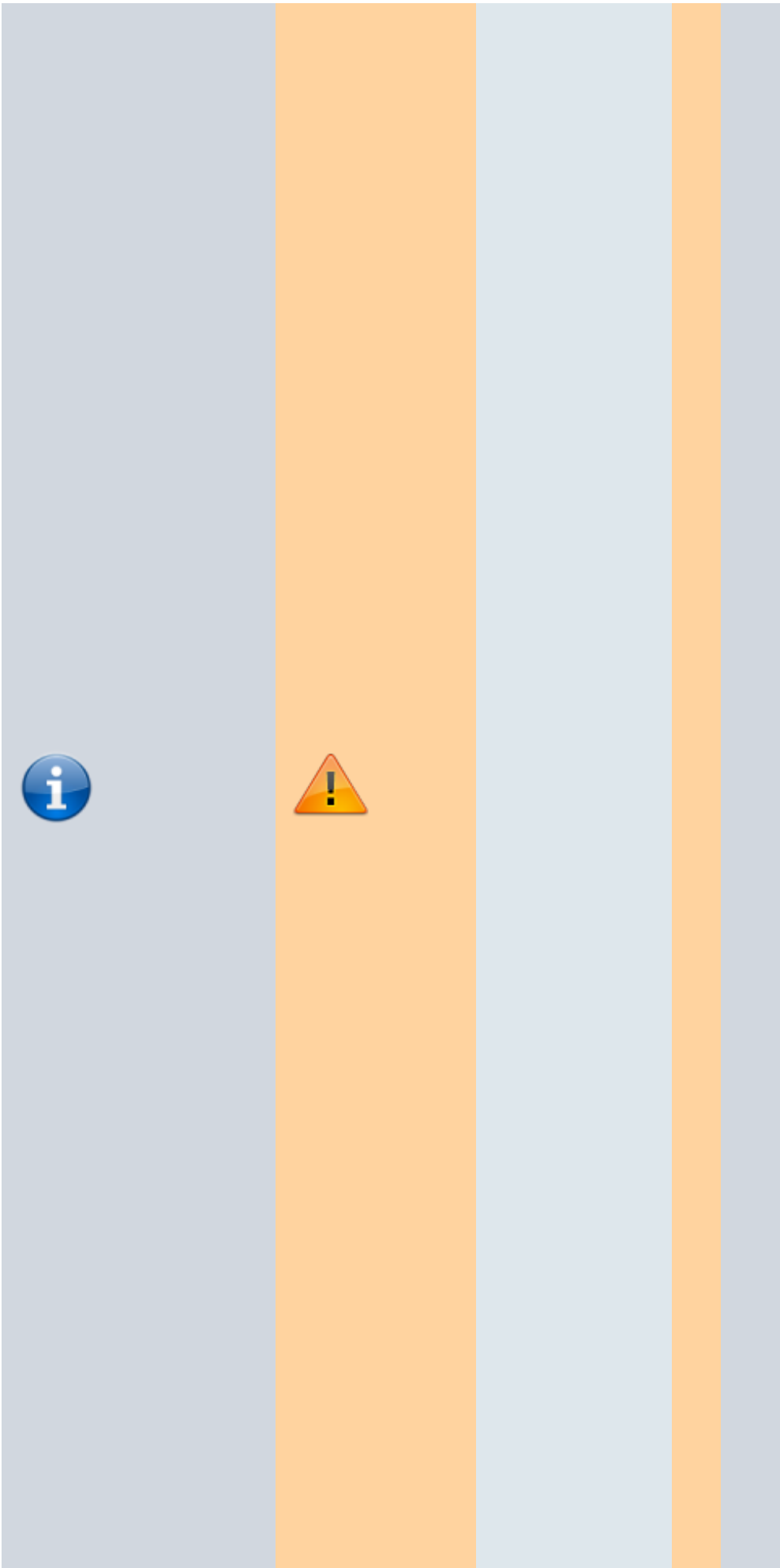


The graphic consists of three vertical panels. The left panel is blue and contains a blue circular icon with a white lowercase 'i'. The middle panel is orange and contains a yellow triangular warning icon with a black exclamation mark. The right panel is light gray and contains a vertical URL: `r
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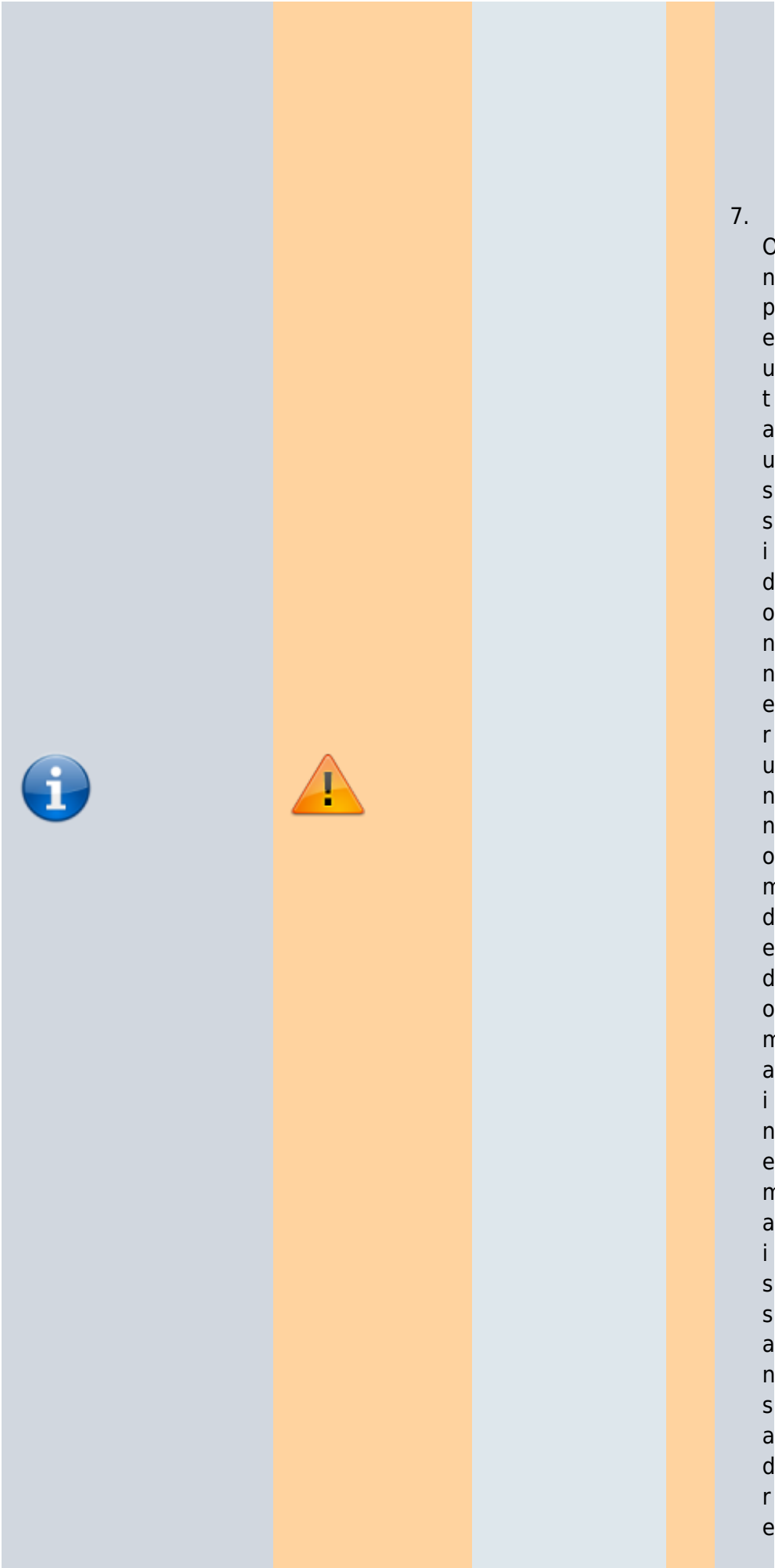
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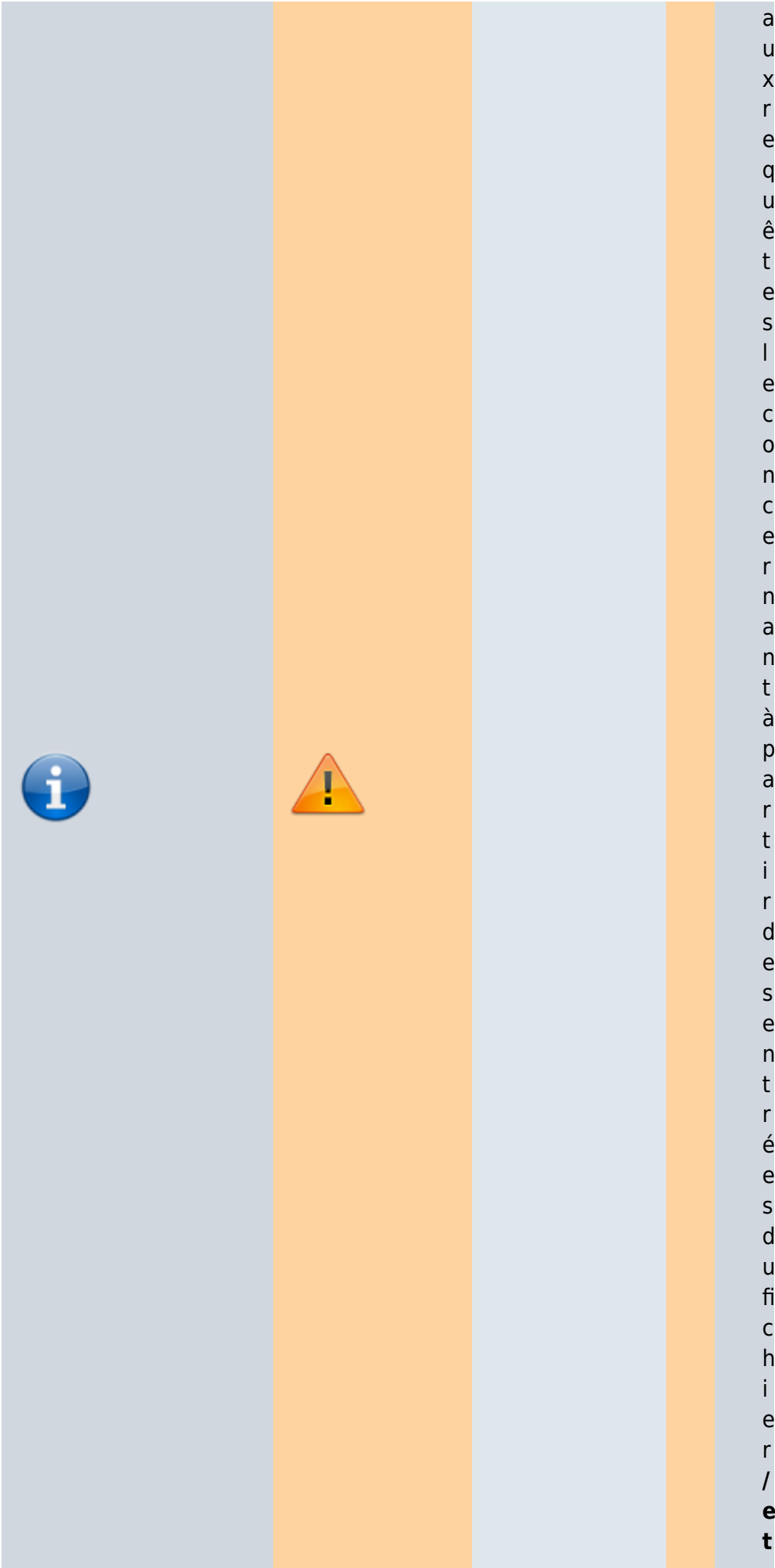
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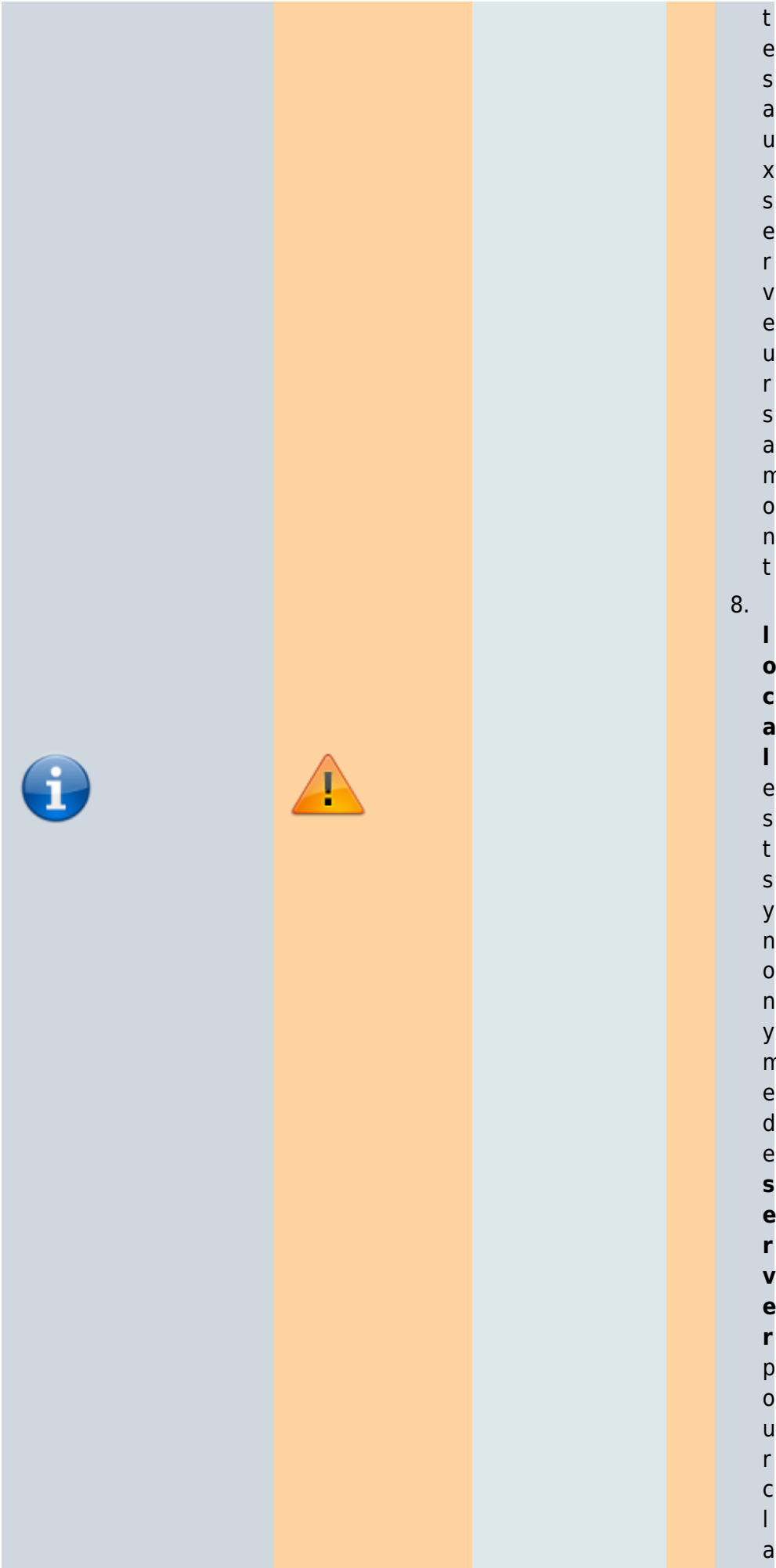
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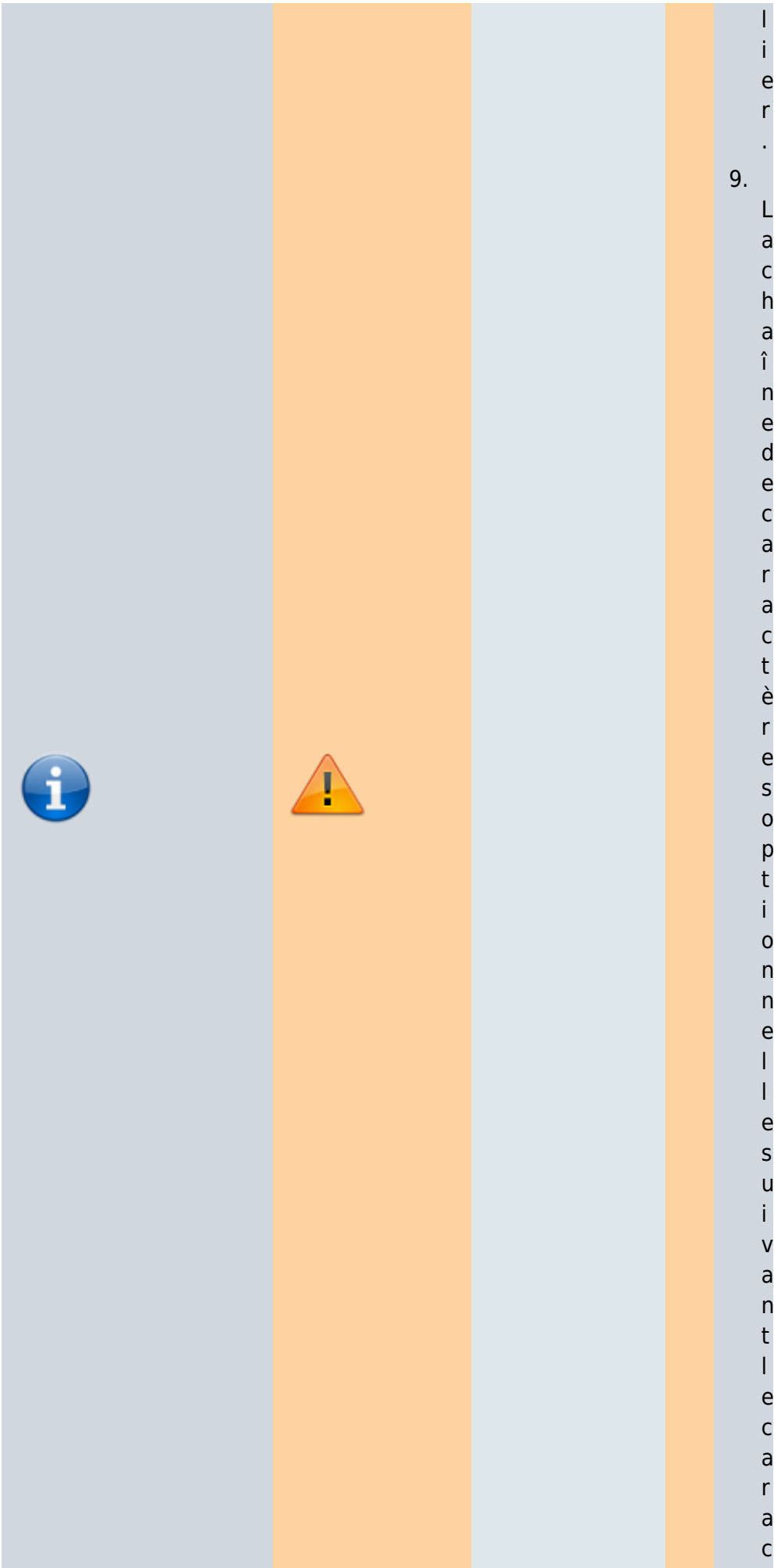
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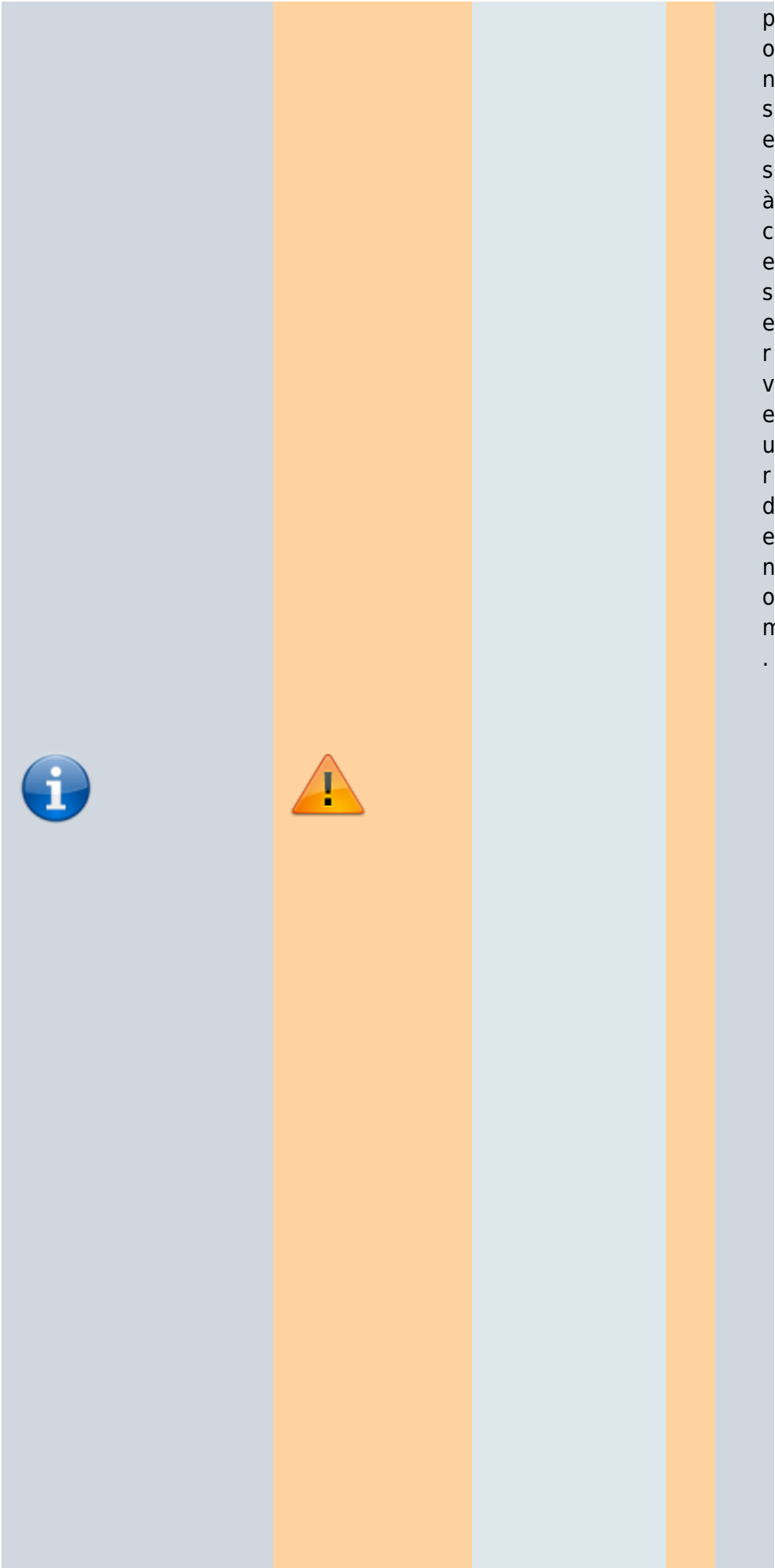
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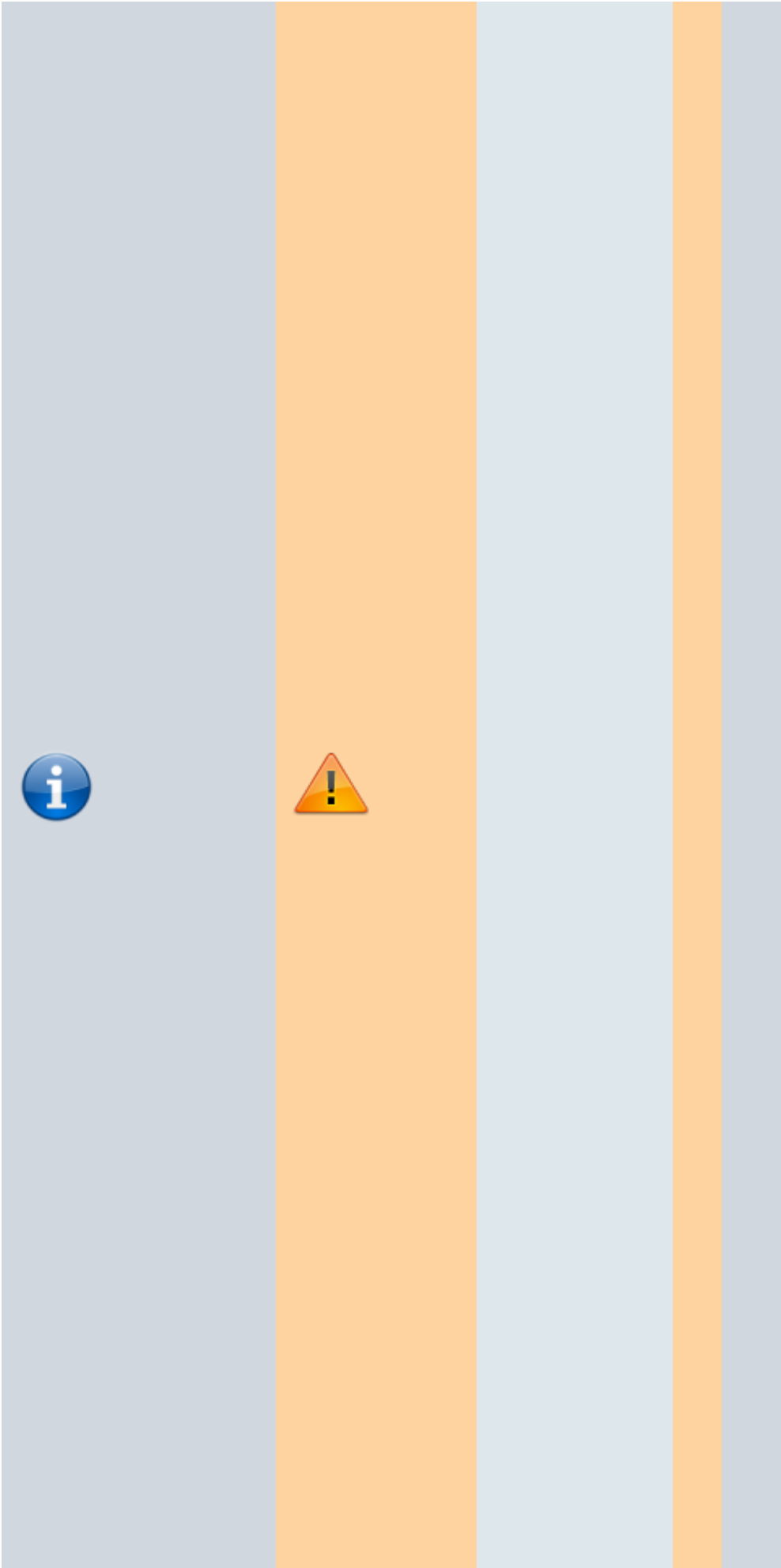
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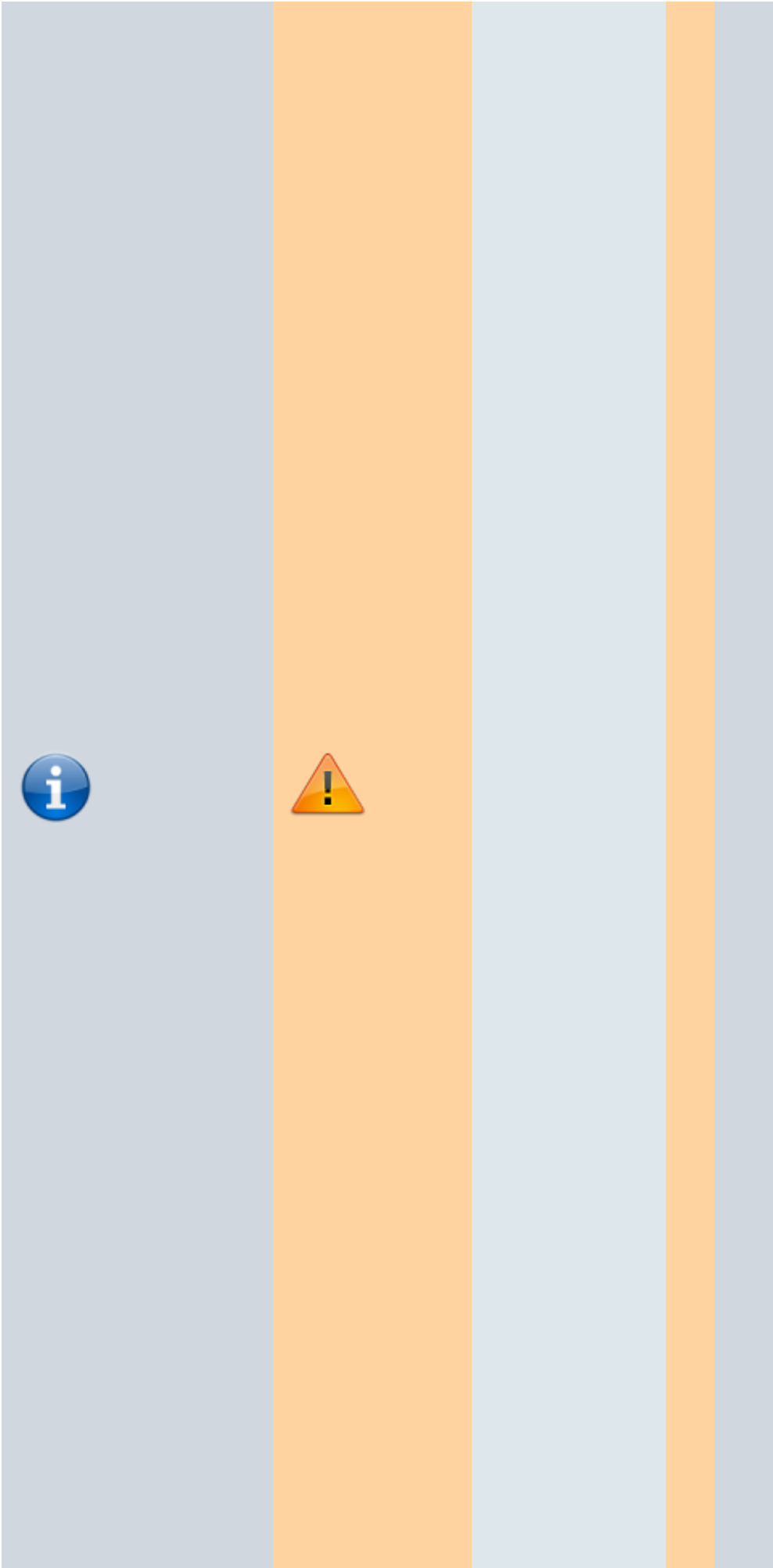
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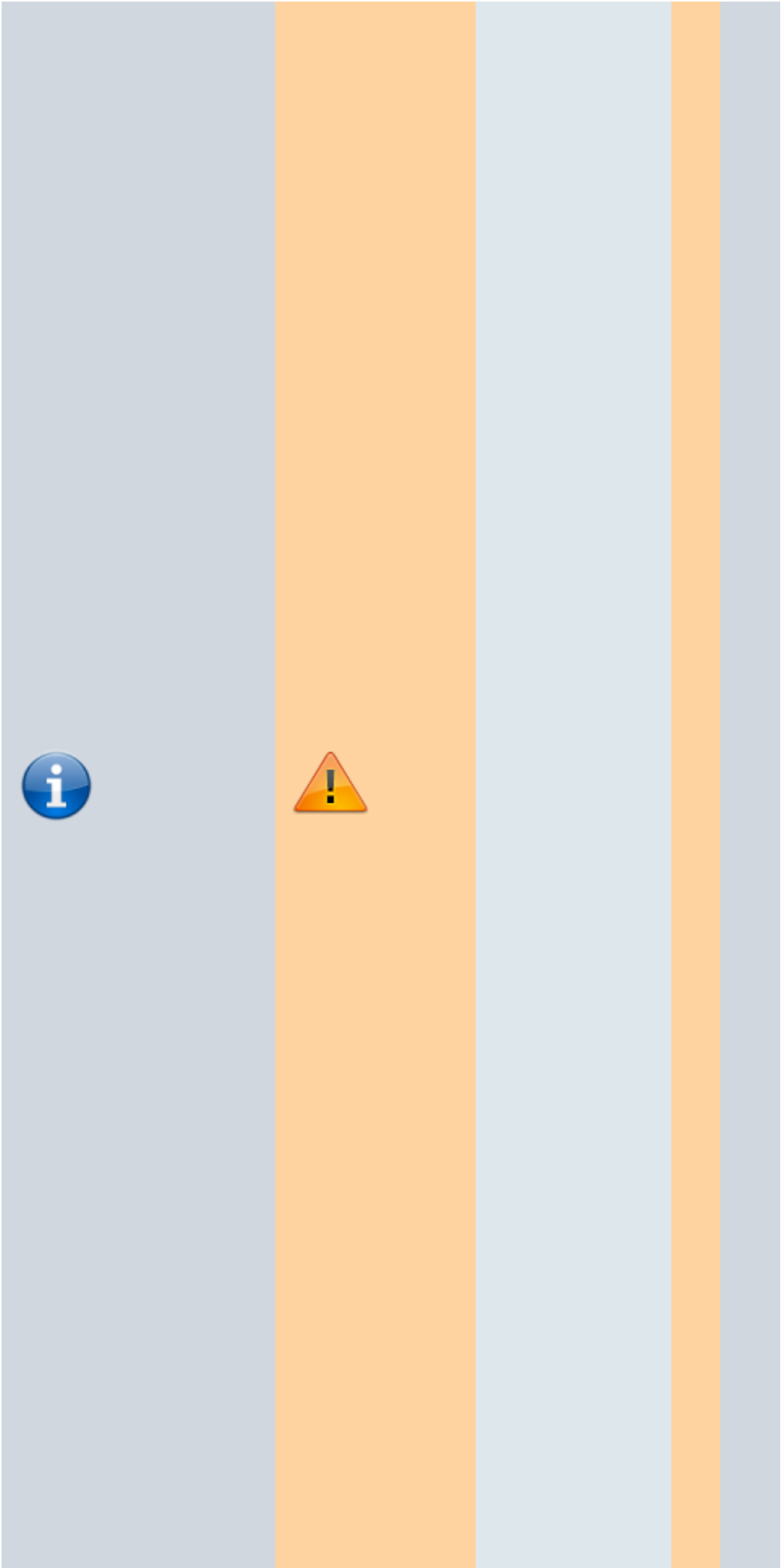
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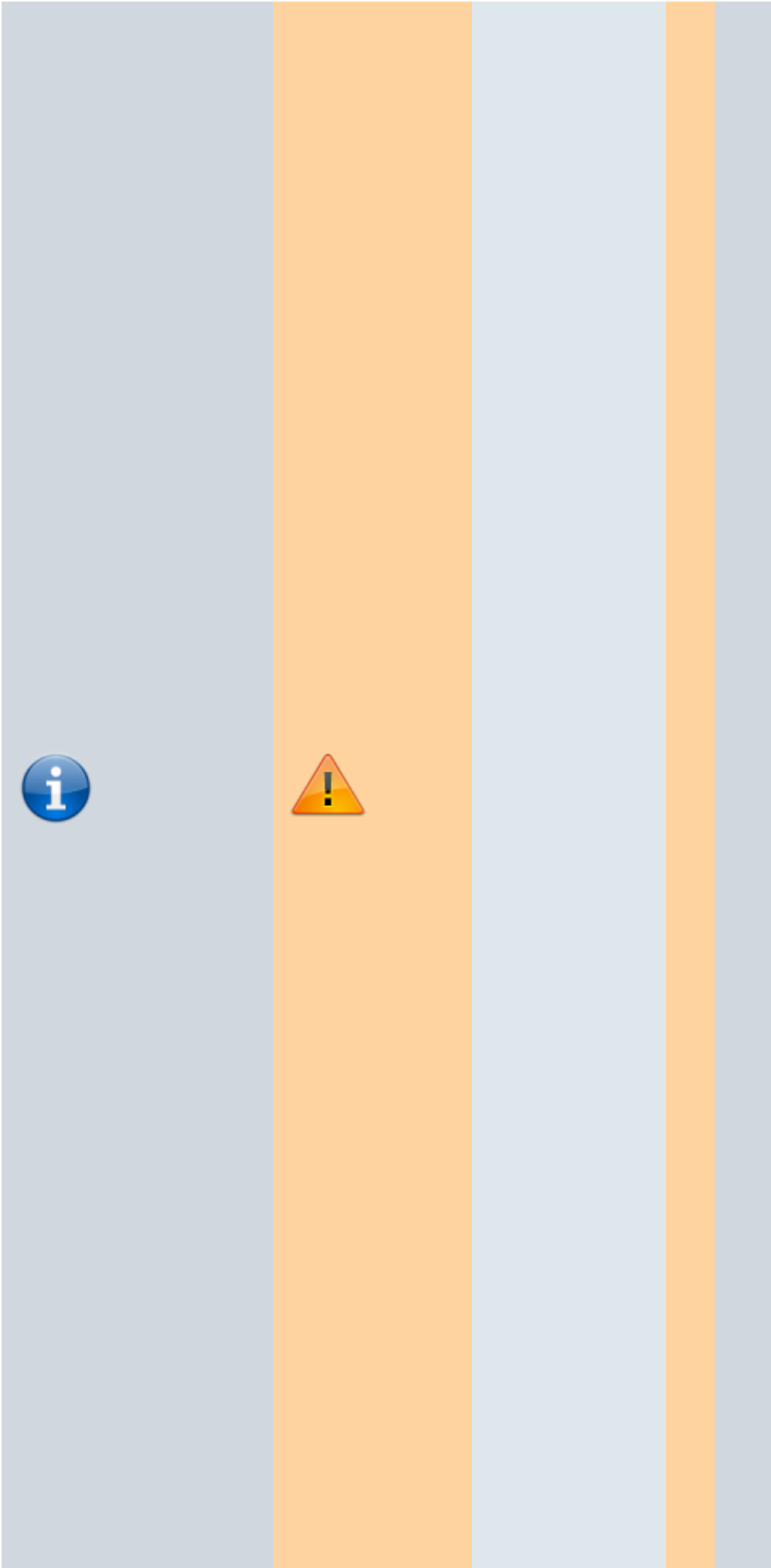
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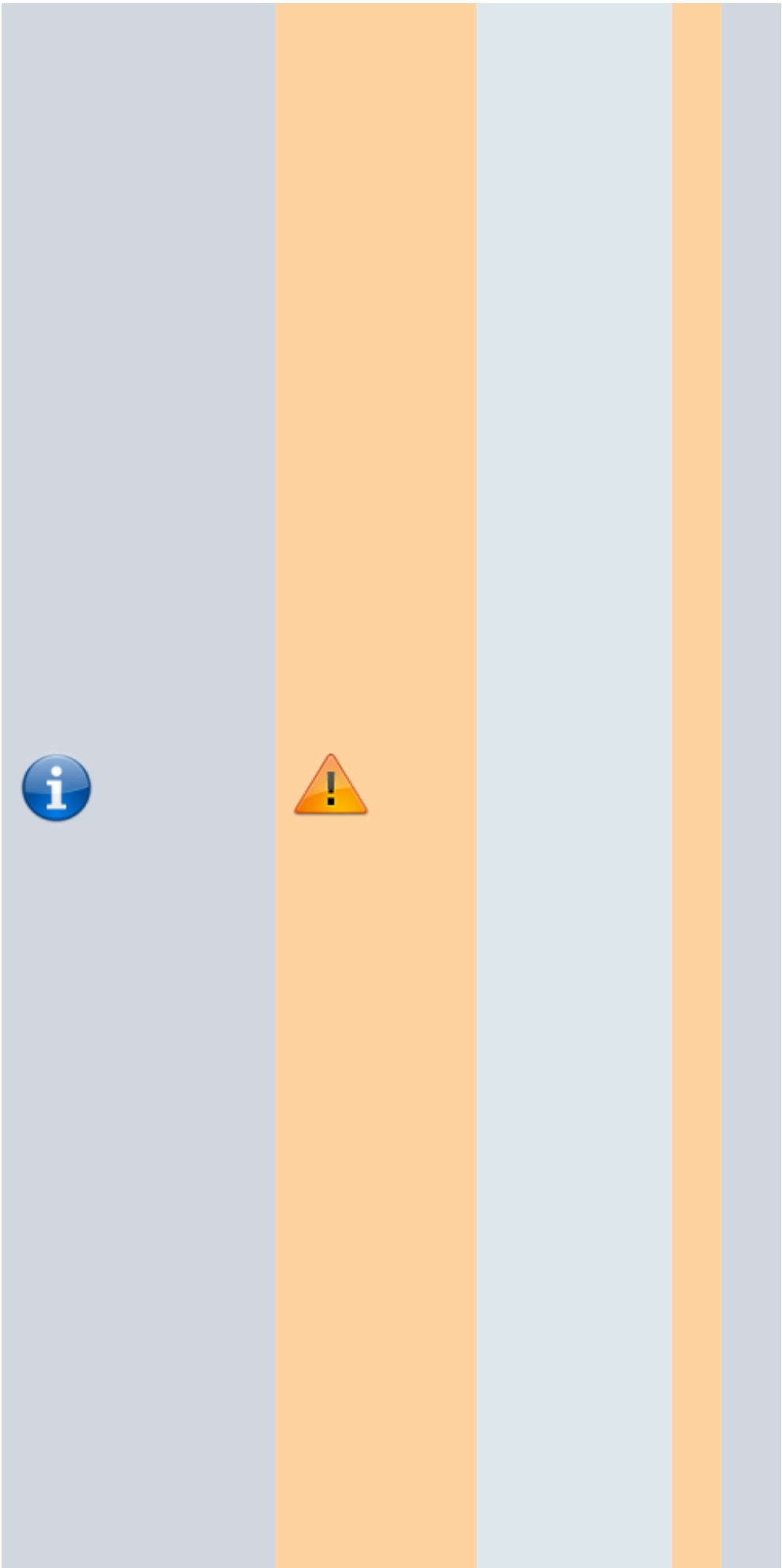
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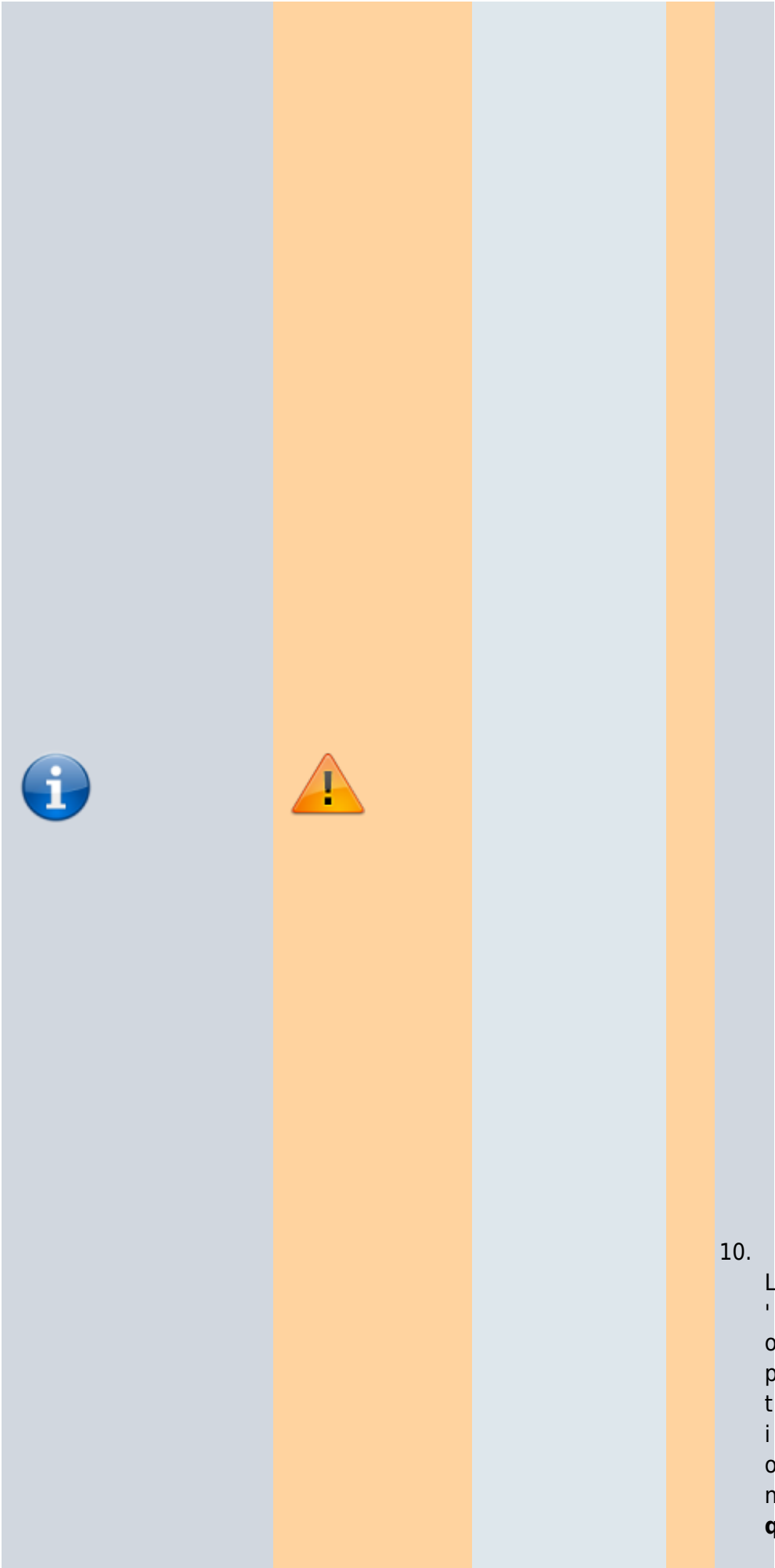
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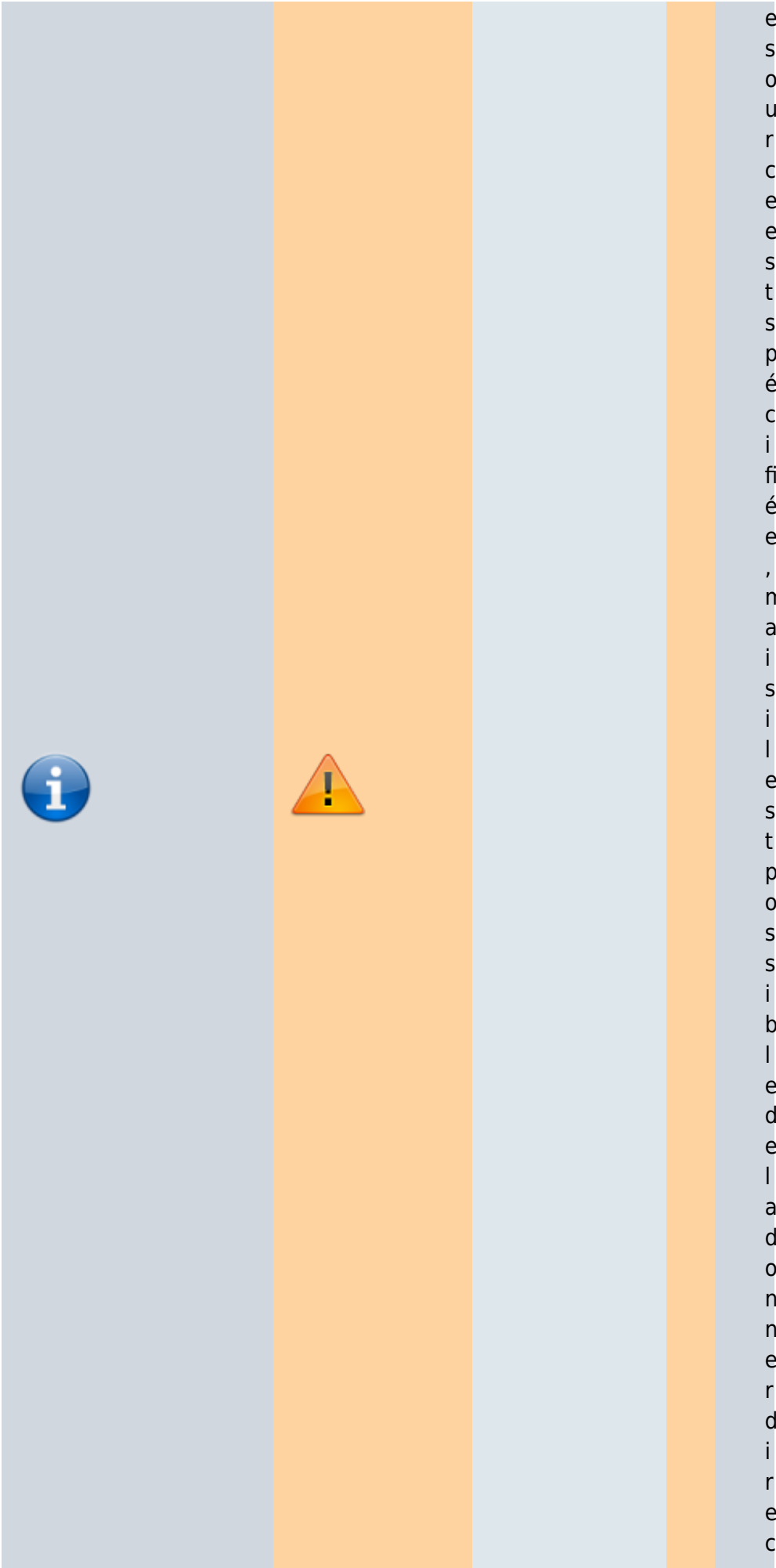




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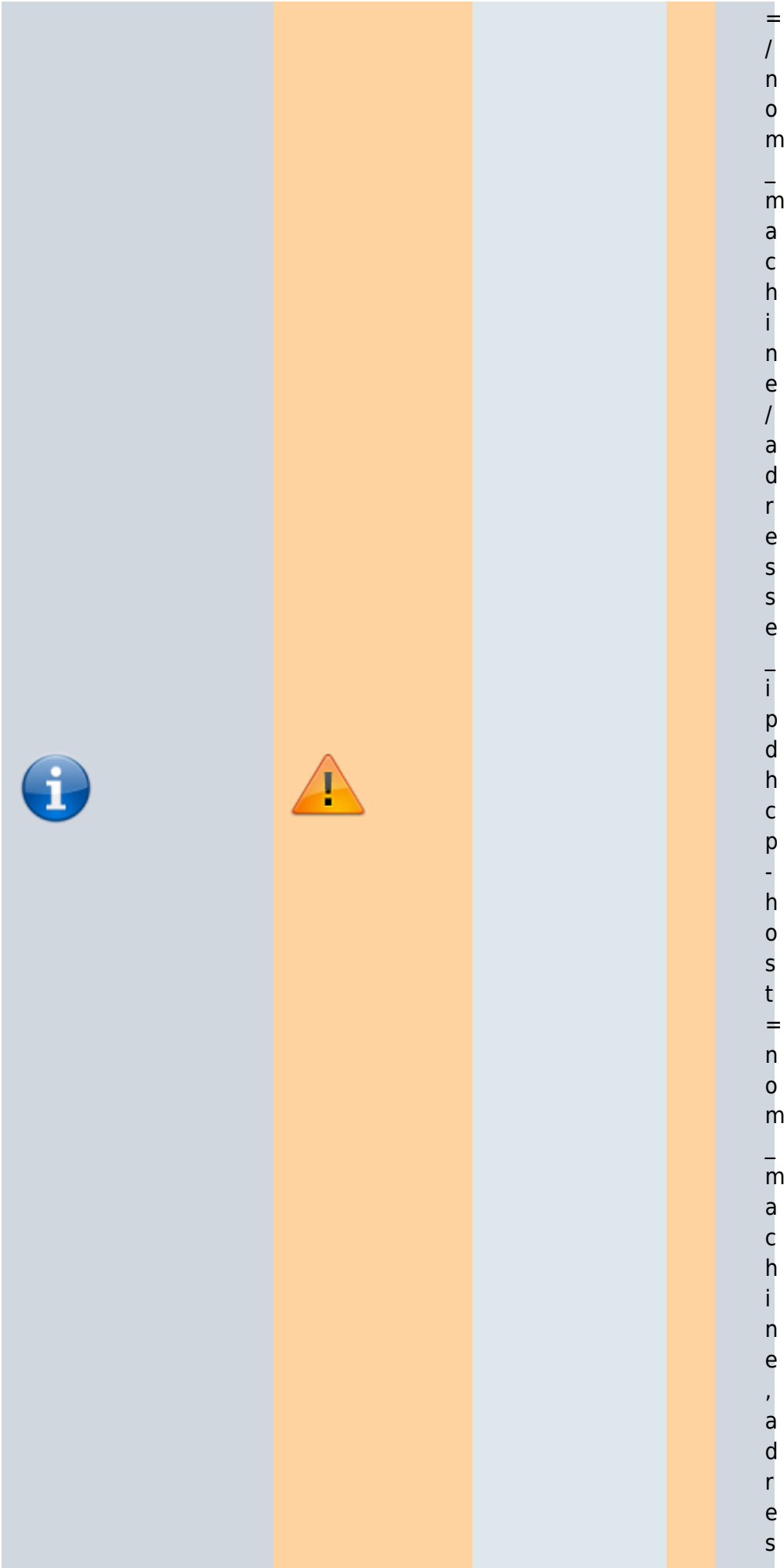
L'option q

Source de la requête sera l'adresse en question.

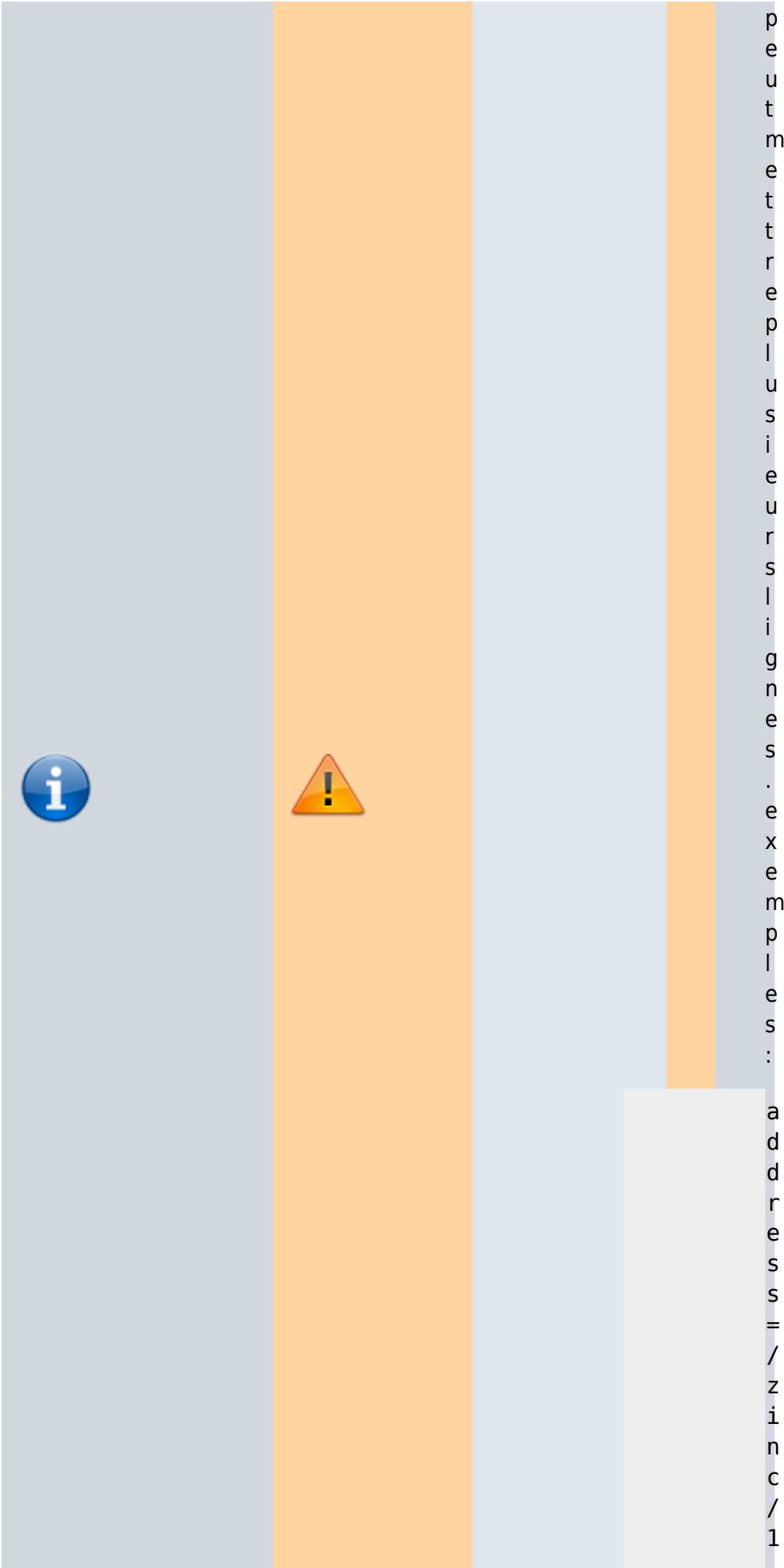
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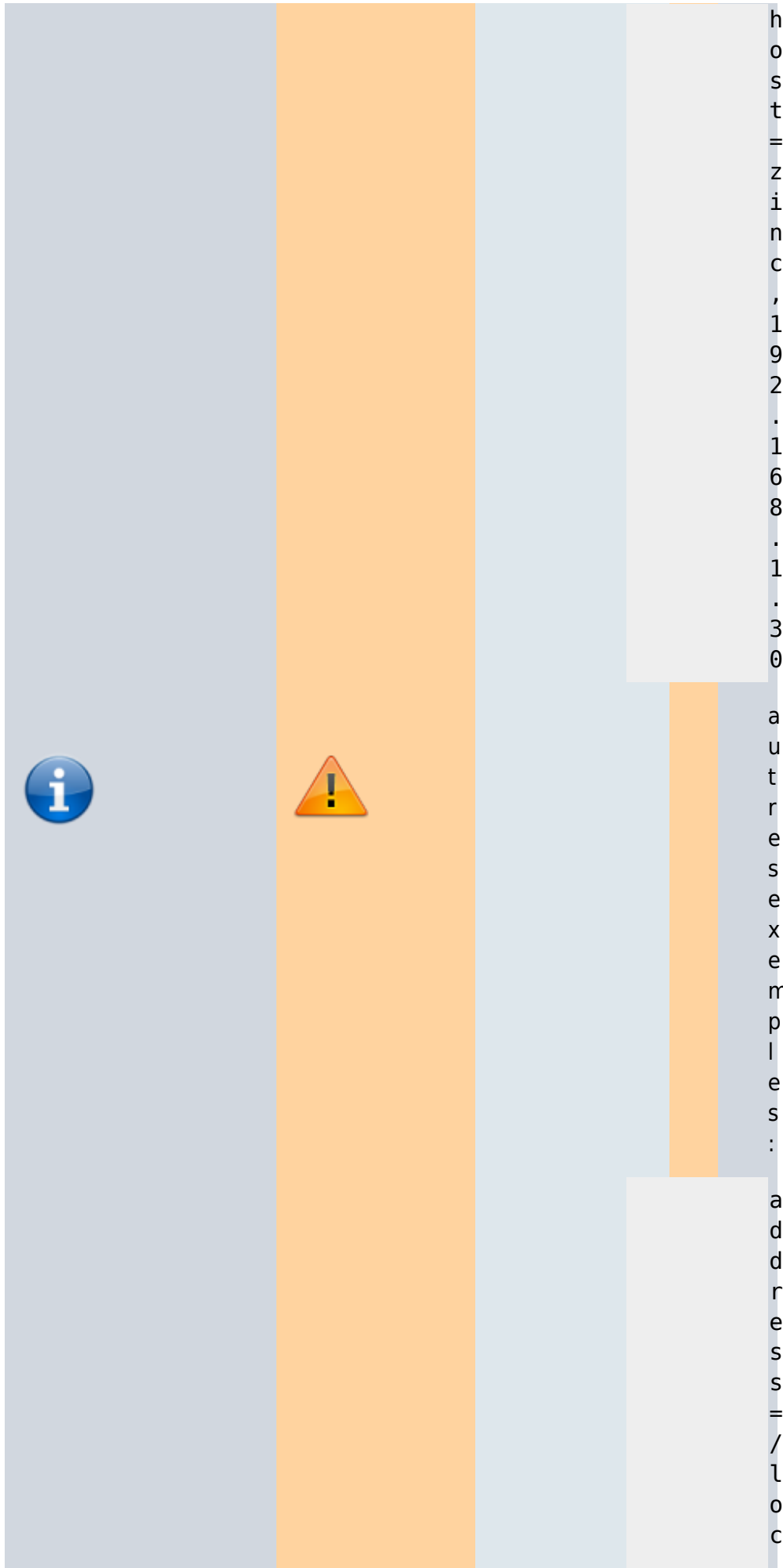
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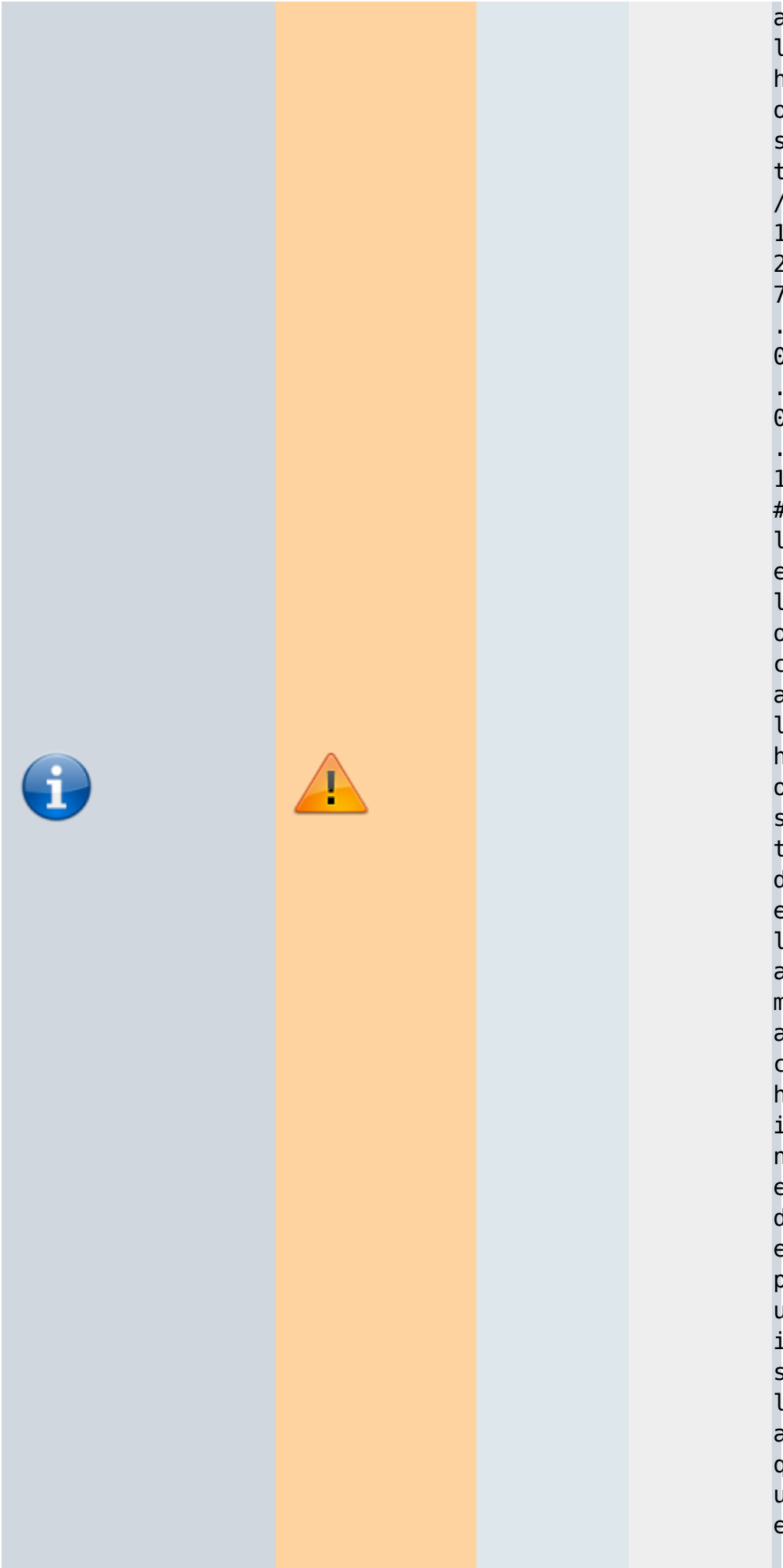


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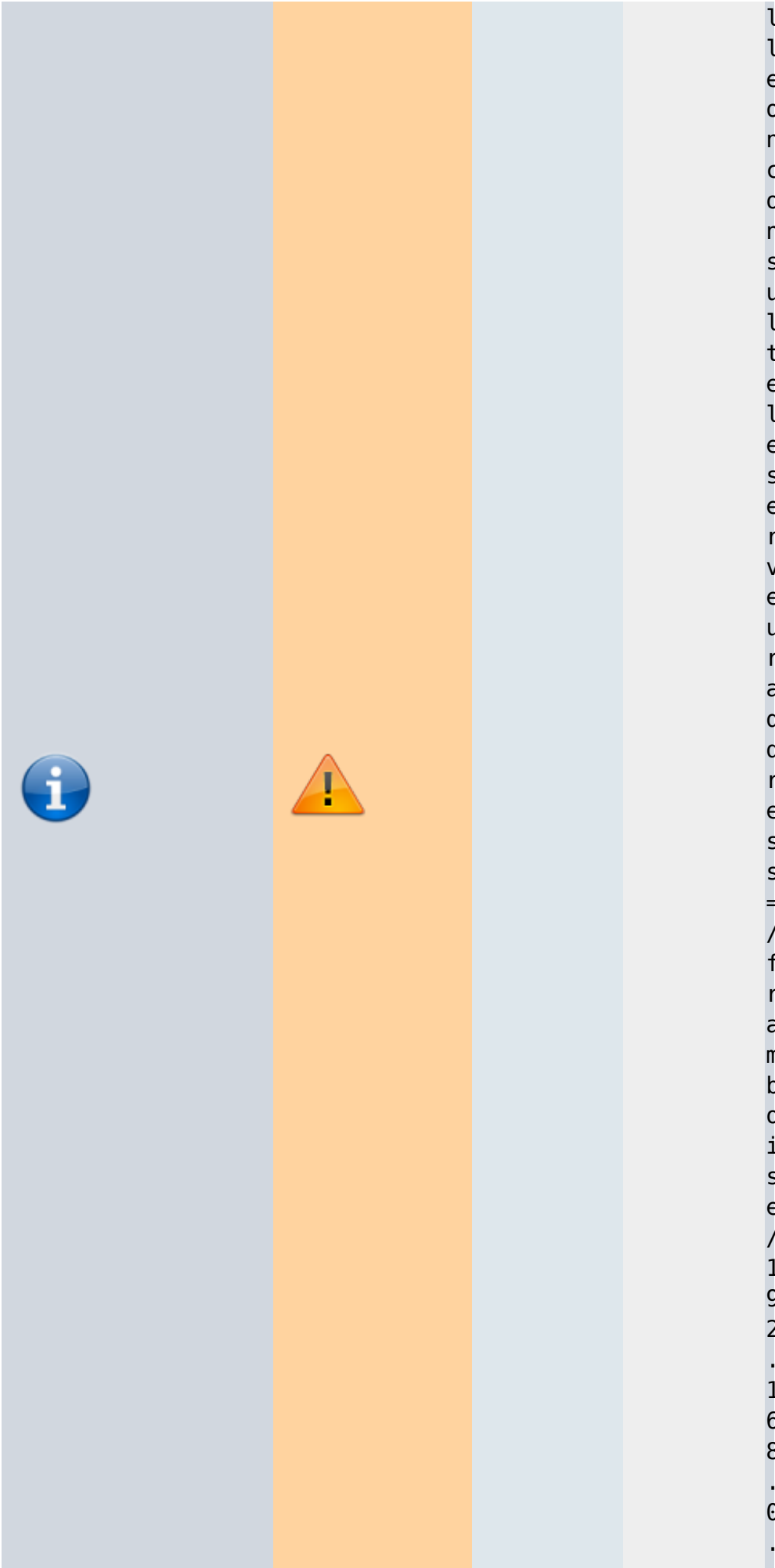


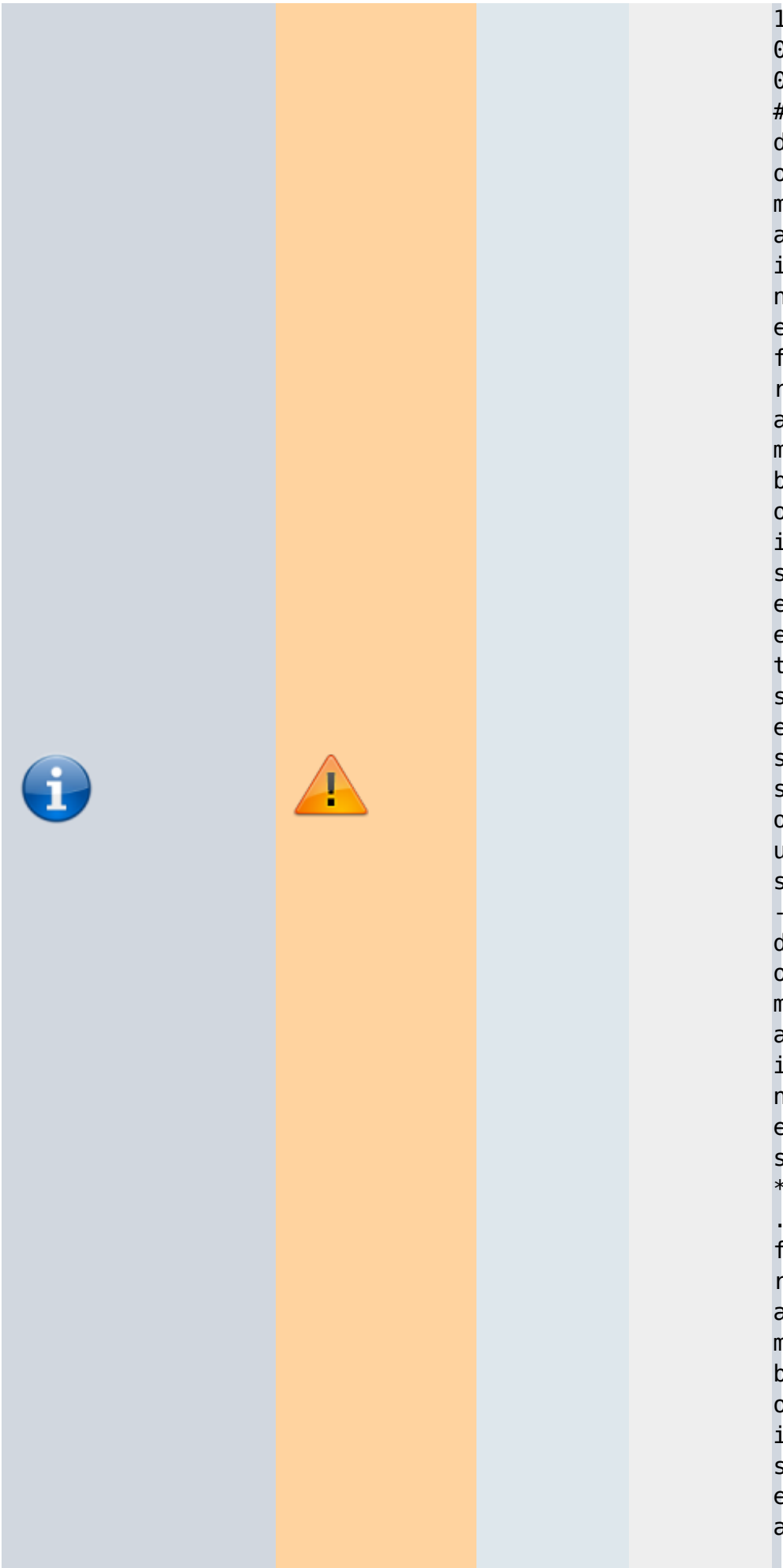
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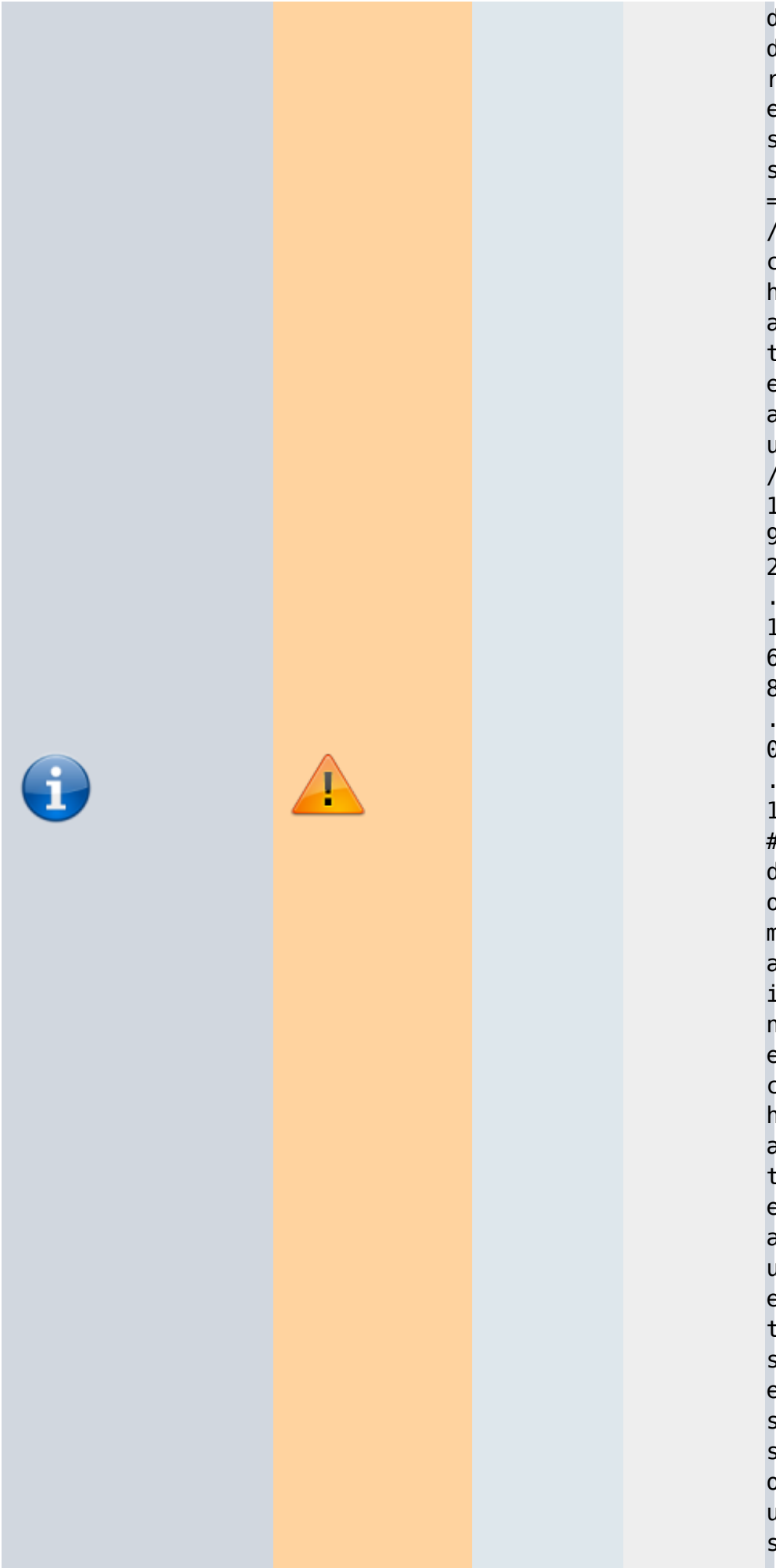




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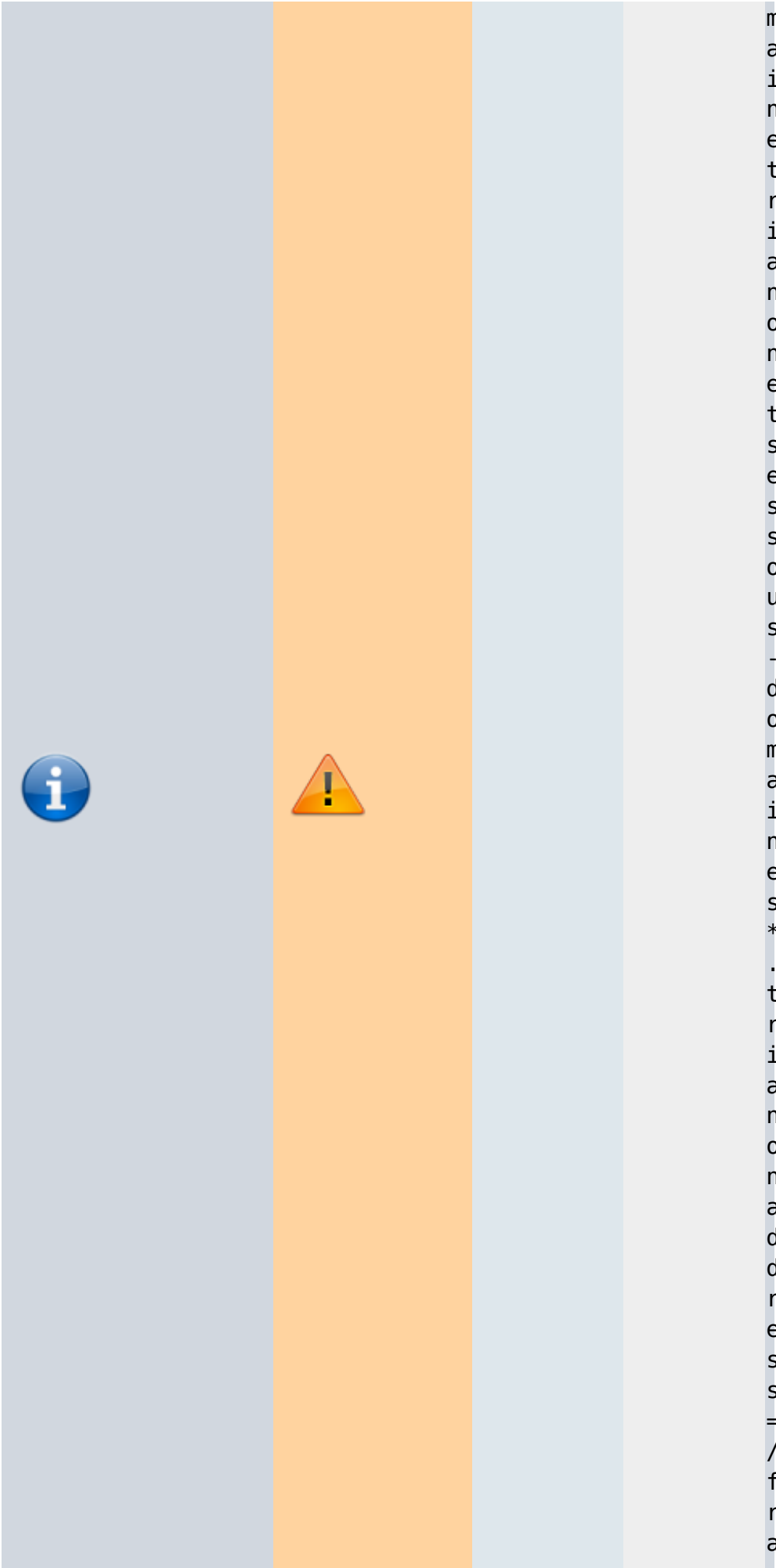


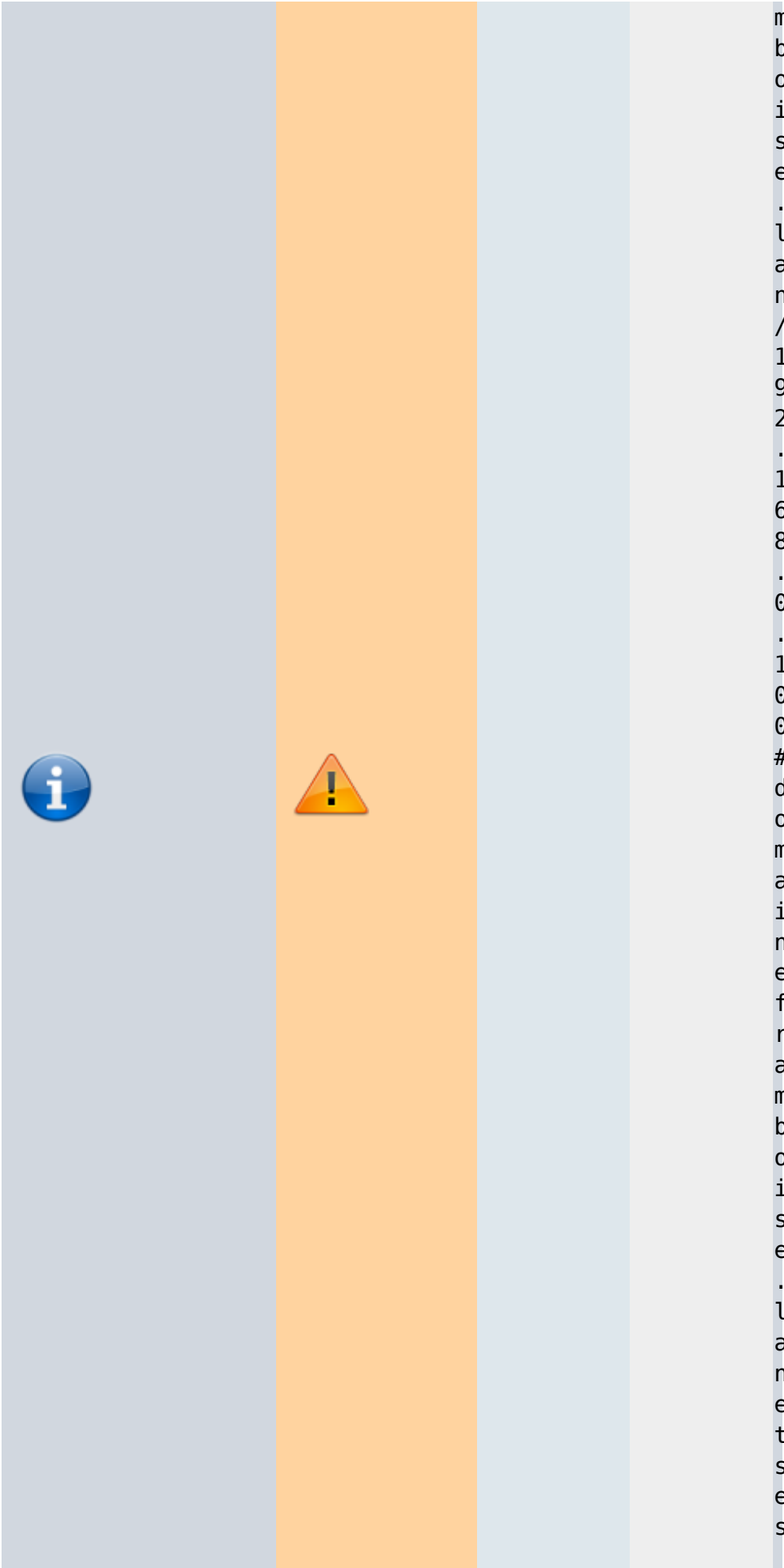
The banner consists of four vertical sections of different colors: light blue, orange, light blue, and light grey. The orange section in the center contains a yellow warning triangle icon with a black exclamation mark. The light grey section on the right contains vertical text that reads: "100 # domaine framboissee sossou - domaine s*.framboissee a".





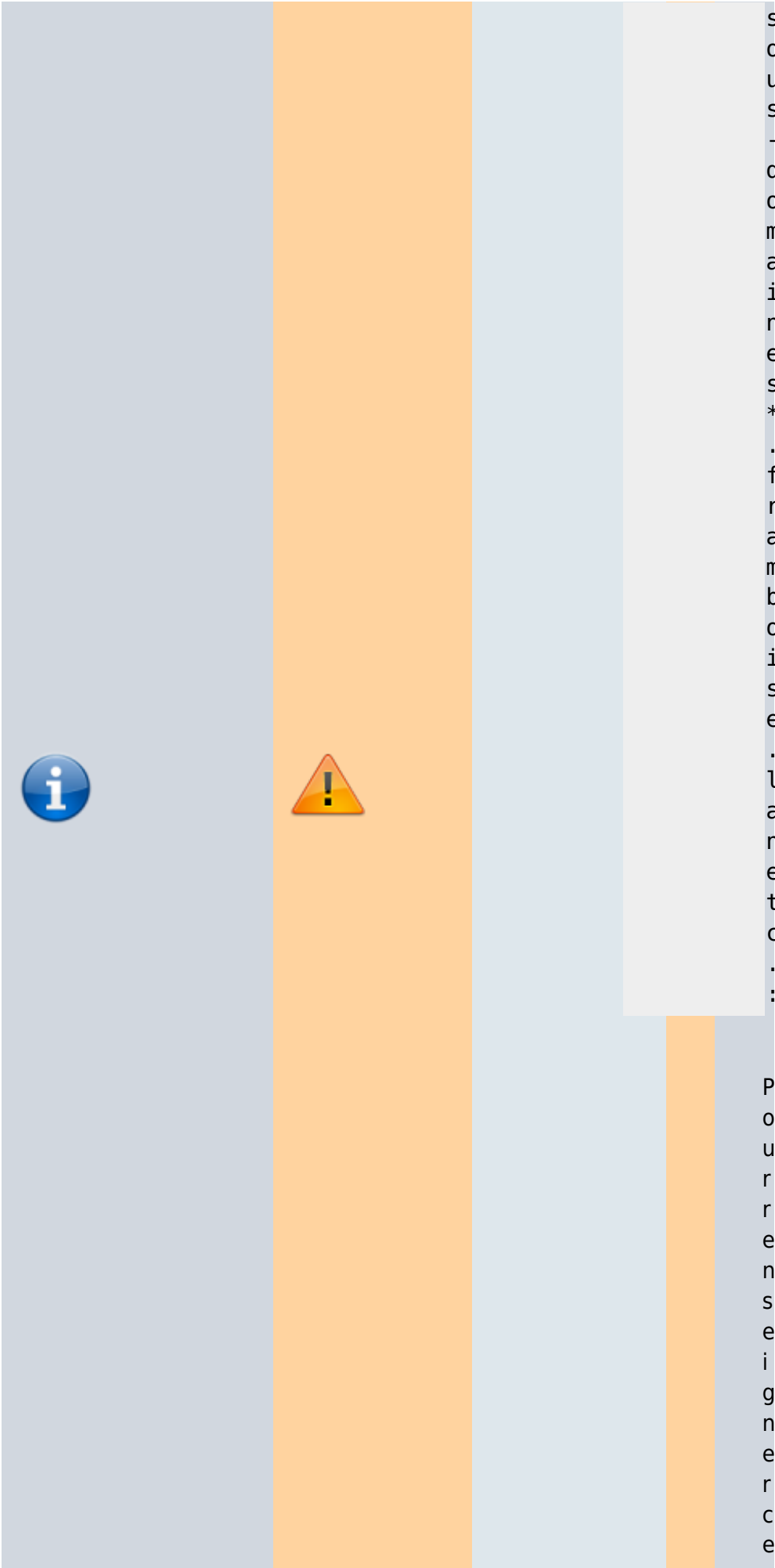
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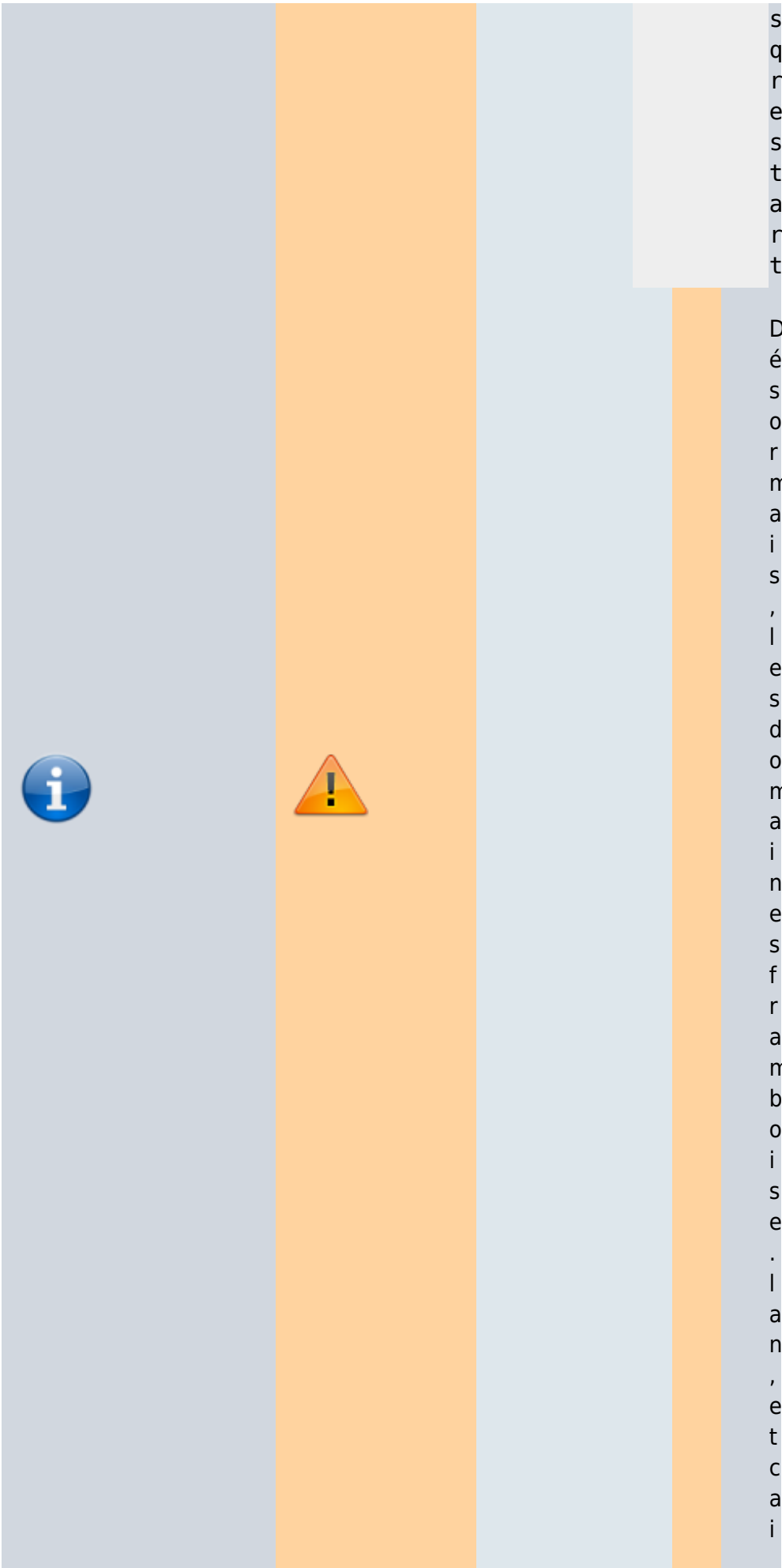
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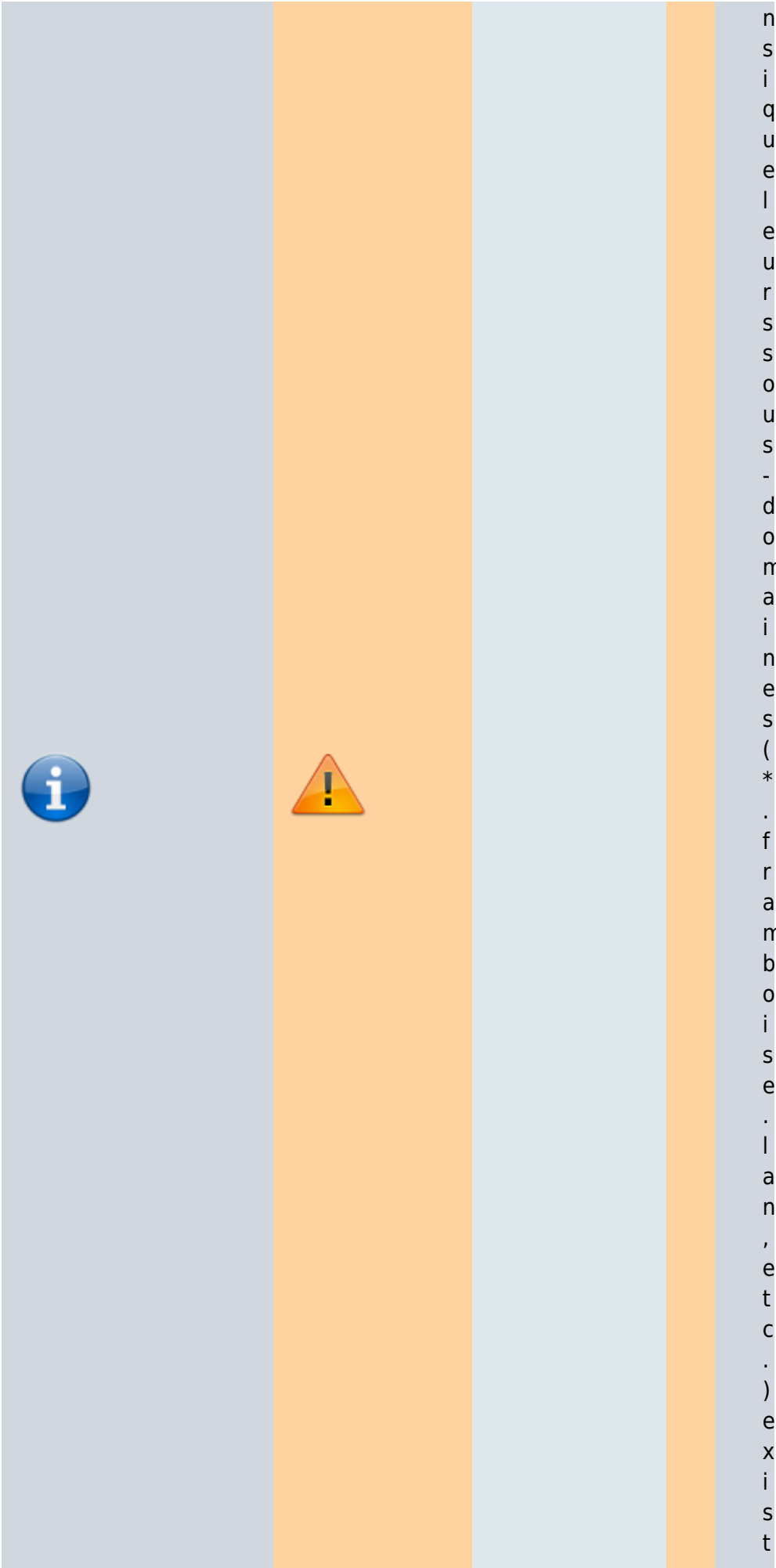
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The diagram consists of four vertical bars of varying colors: light blue, orange, light blue, and orange. The first light blue bar contains a blue information icon. The first orange bar contains a yellow warning icon. The second orange bar contains a white box with a terminal prompt: `$ sudo service dnsmasq`. To the right of the bars, the text 'arrêter le service dnsmasq' is written vertically.

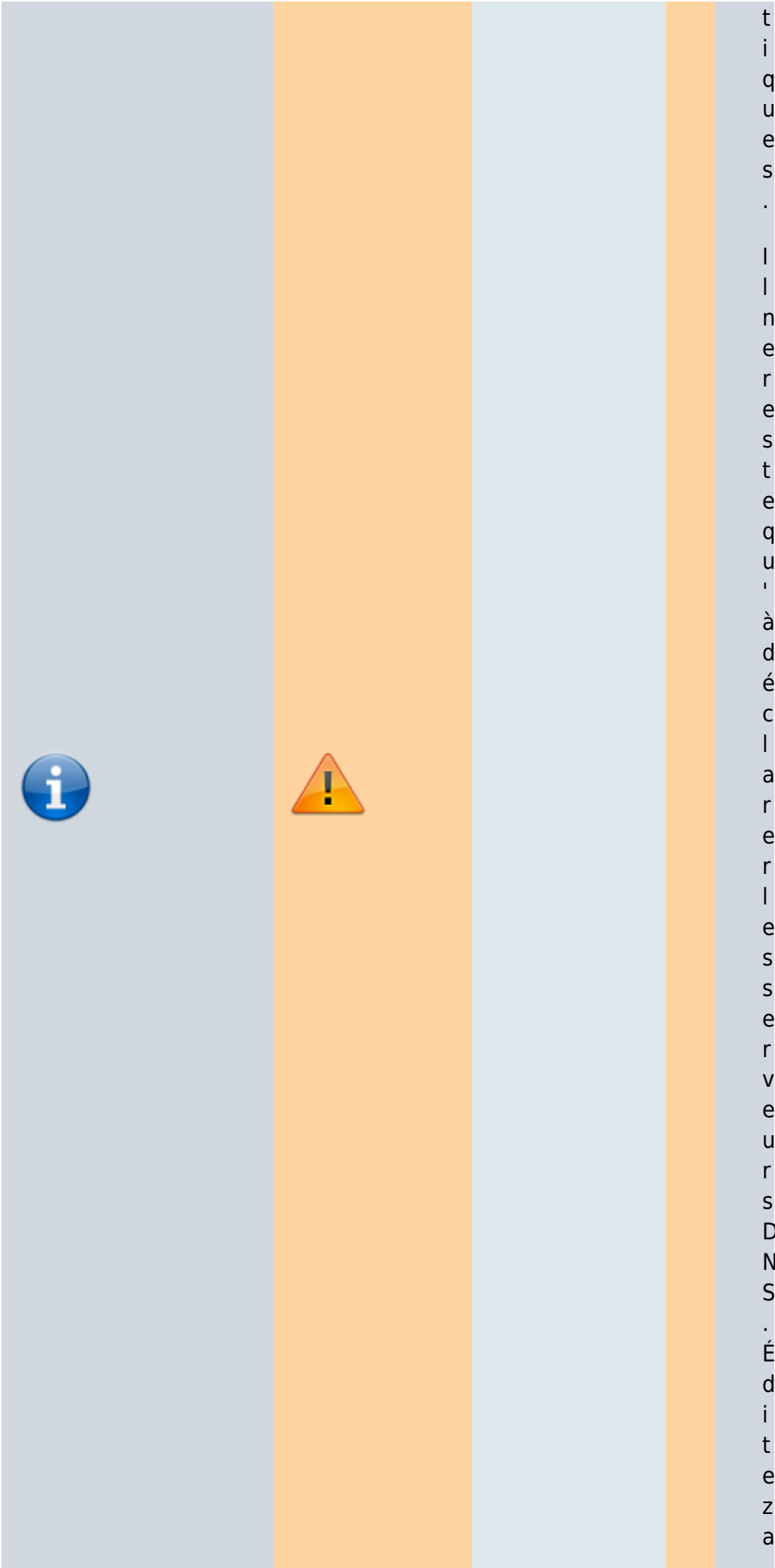


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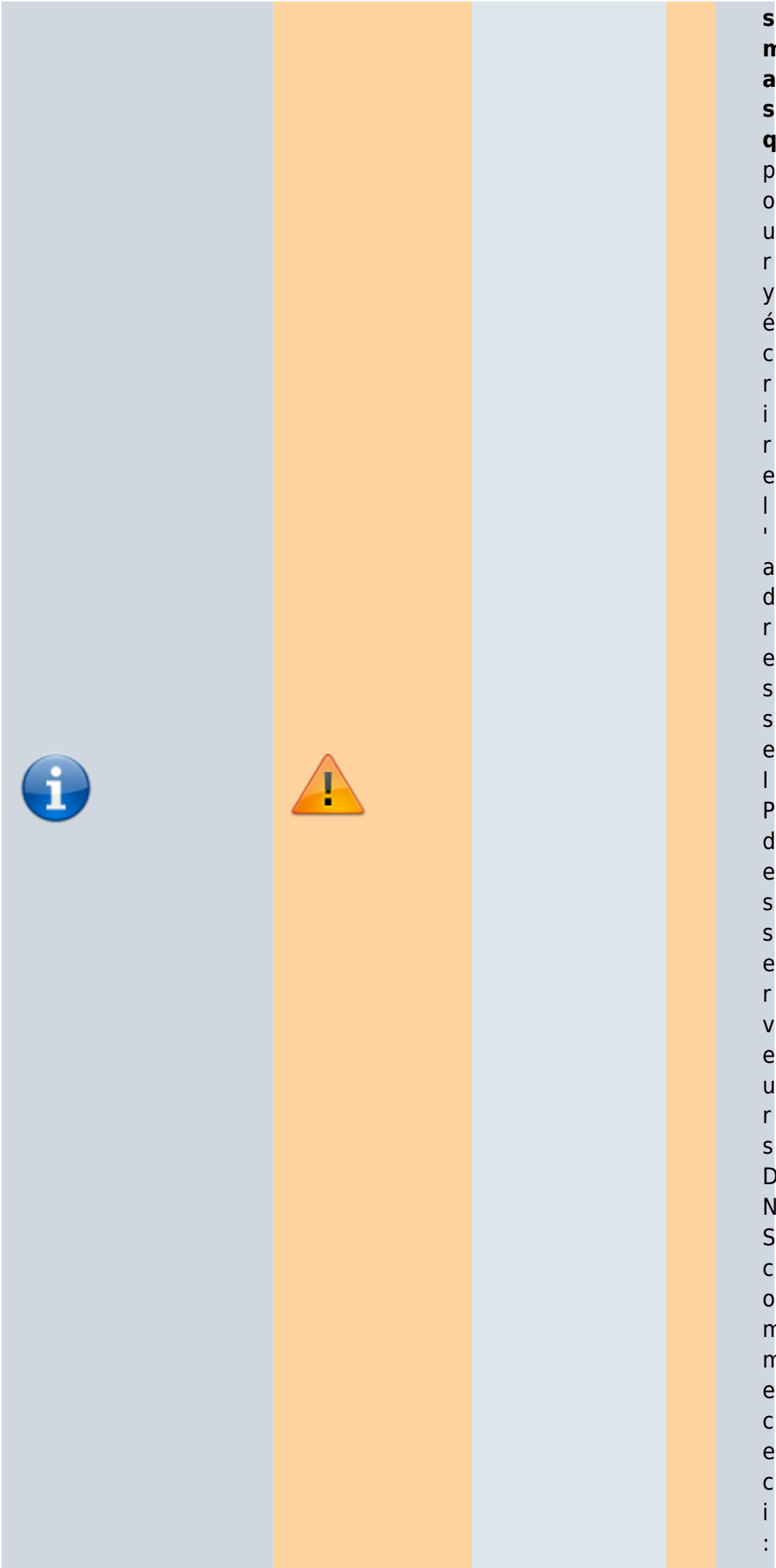
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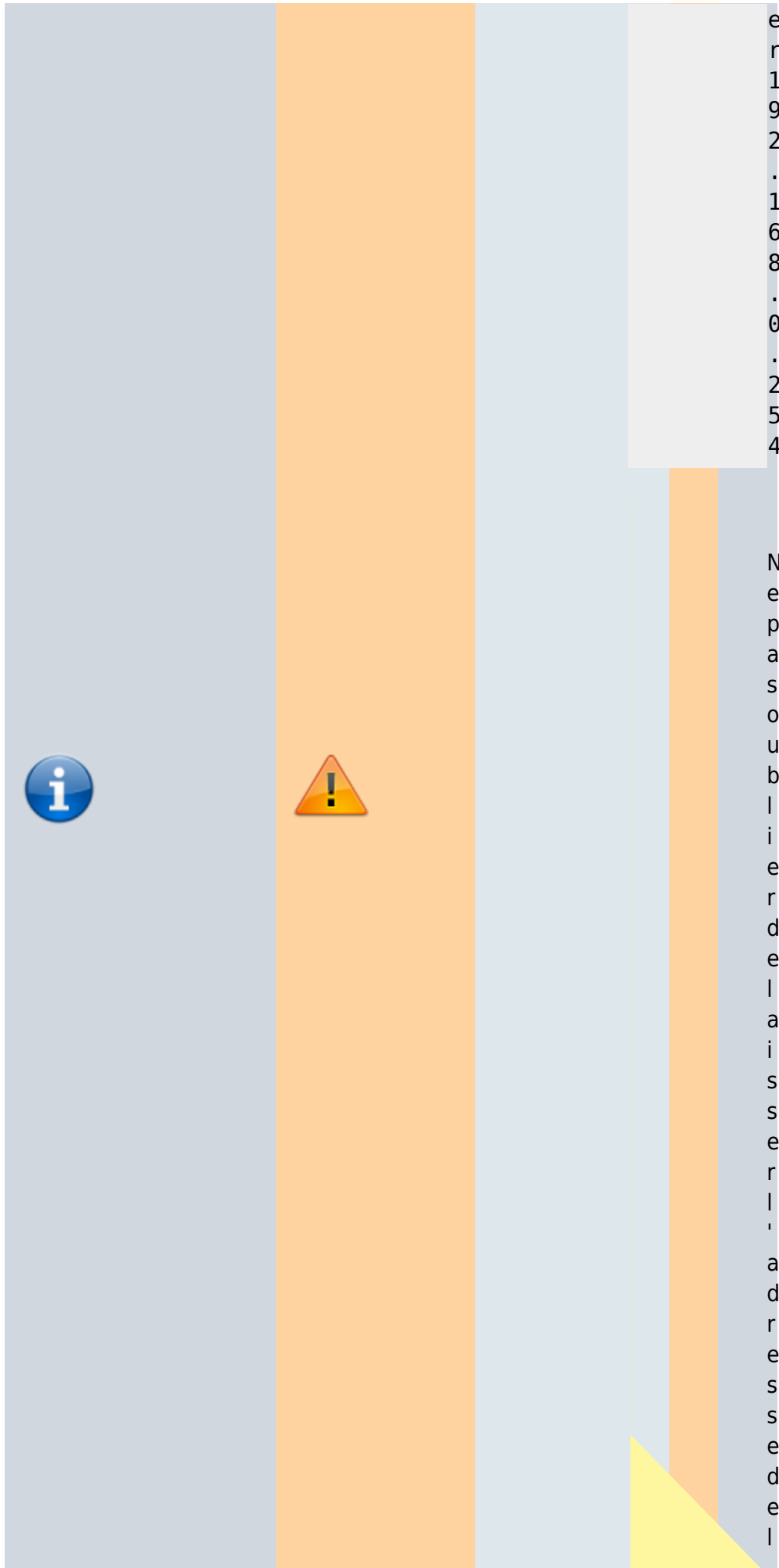
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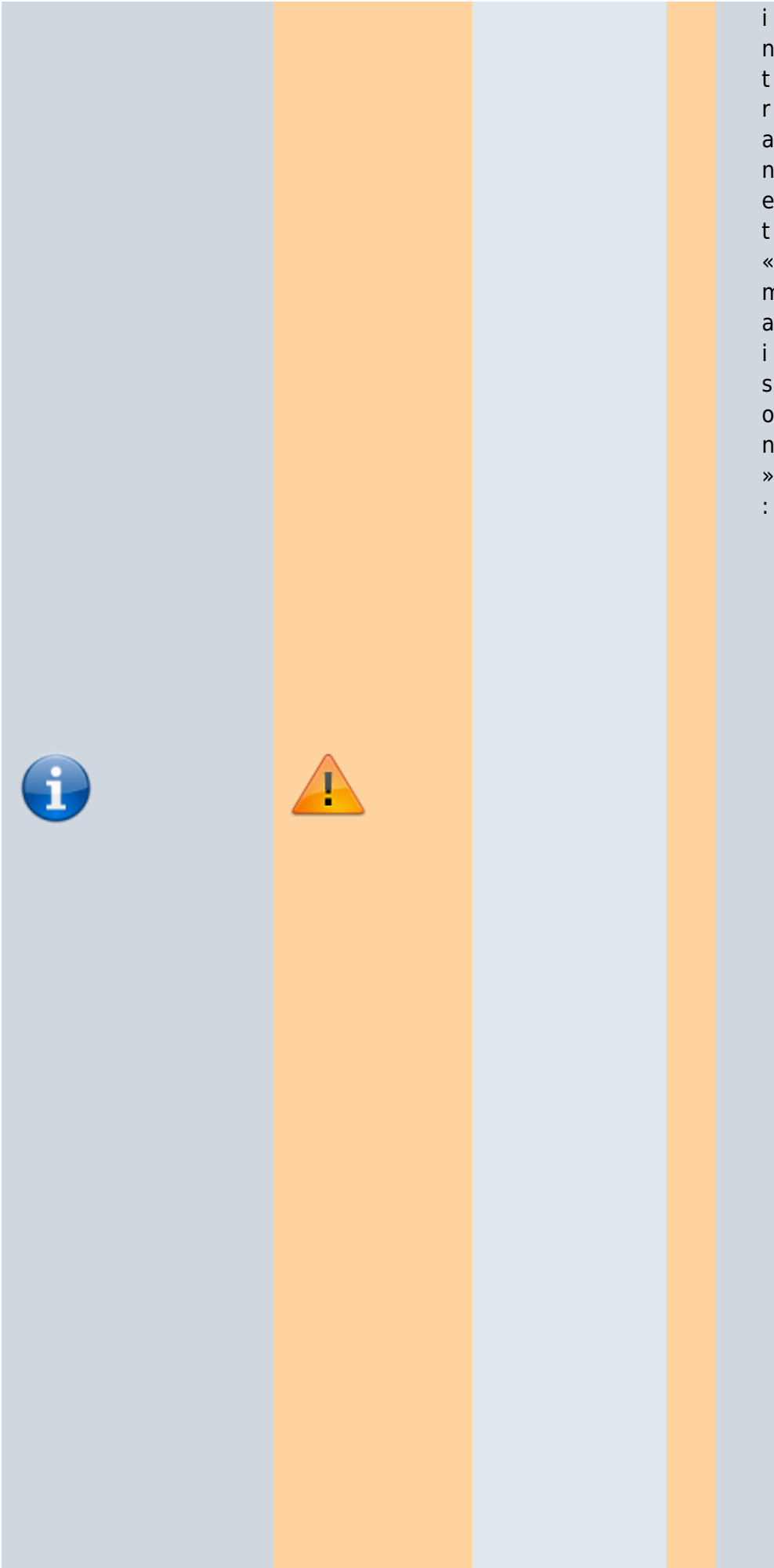
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The image shows a vertical bar with four segments of equal height. From left to right, the colors are light blue, orange, light blue, and orange. The first light blue segment contains a blue circular icon with a white lowercase letter 'i'. The second orange segment contains a yellow triangular warning icon with a black exclamation mark. The third light blue segment is empty. The fourth orange segment is empty. To the right of the bar, the text 'n a m e s e r v e r 1 9 2 . 1 1 6 8 . 0 . 1 0 0 n a m e s e r v' is written vertically in a small, black, monospaced font.

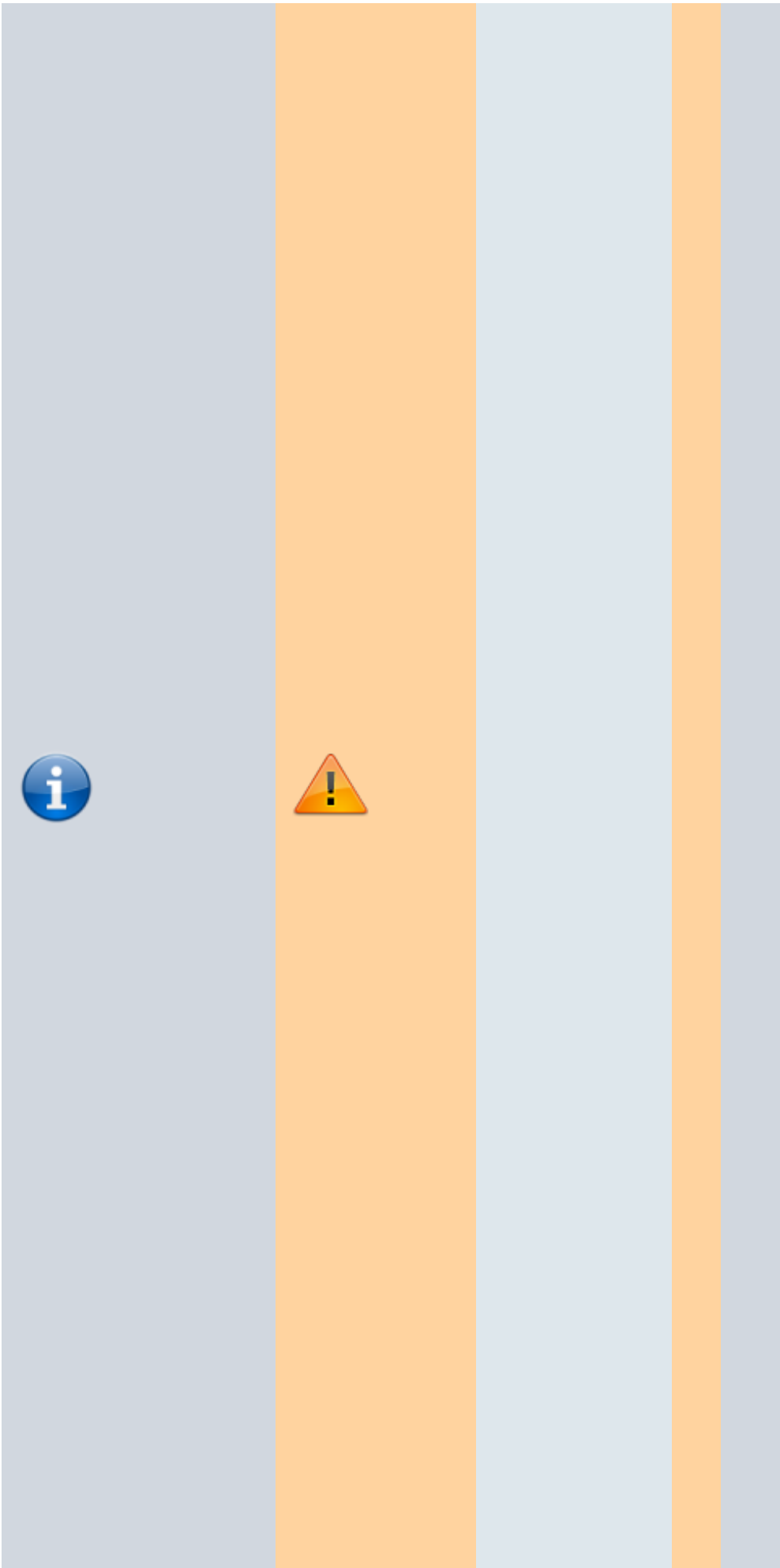


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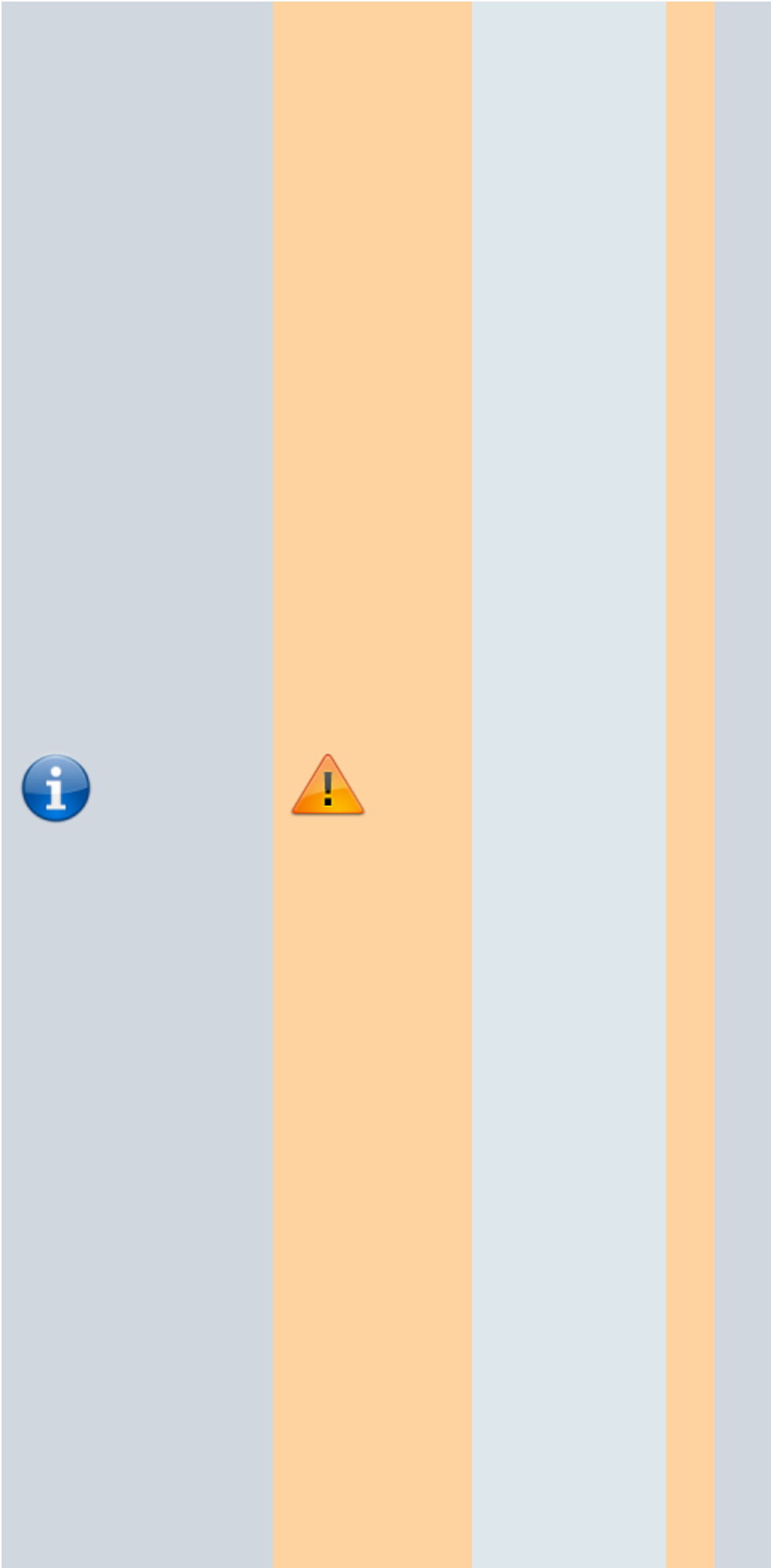


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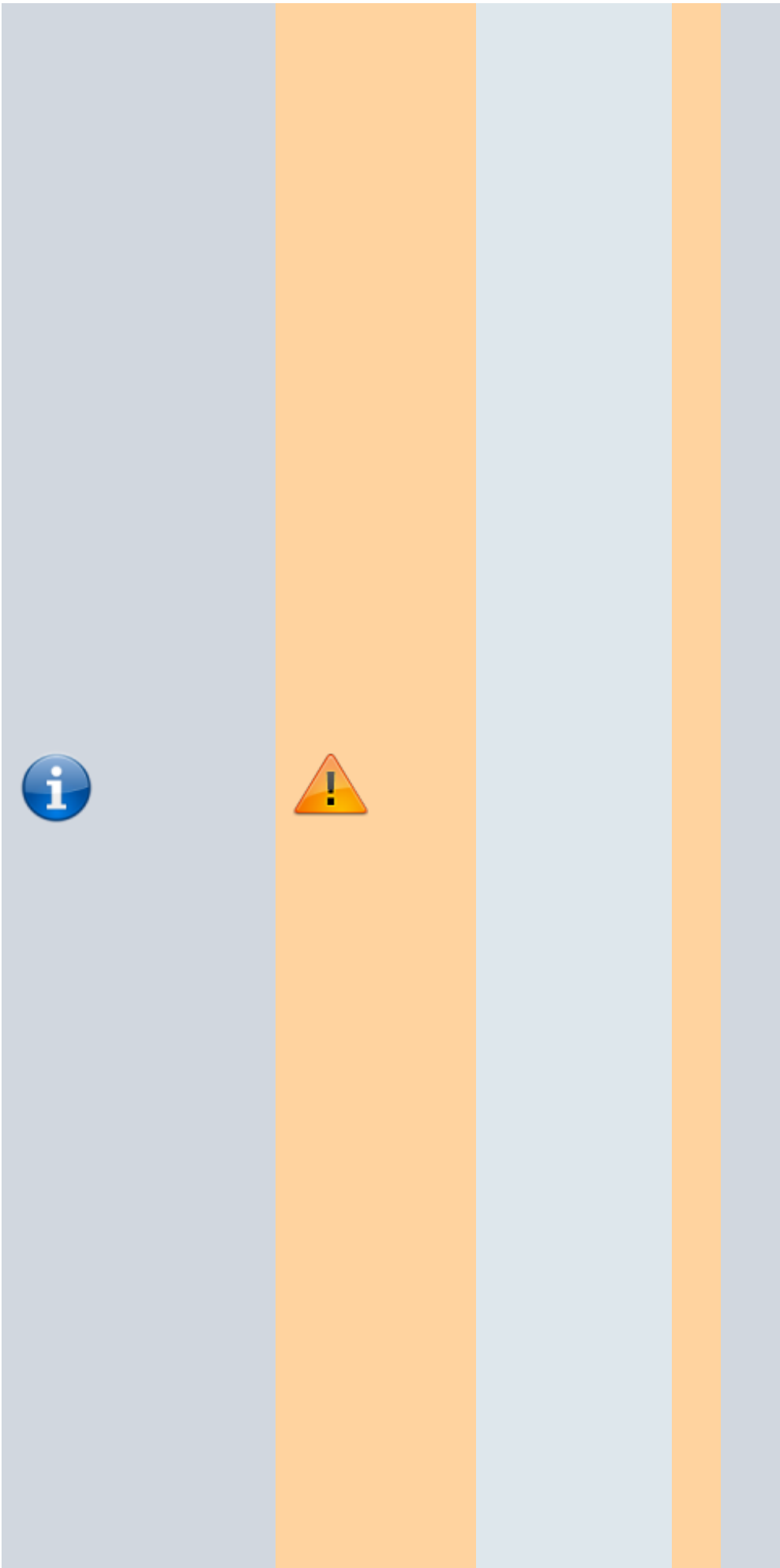
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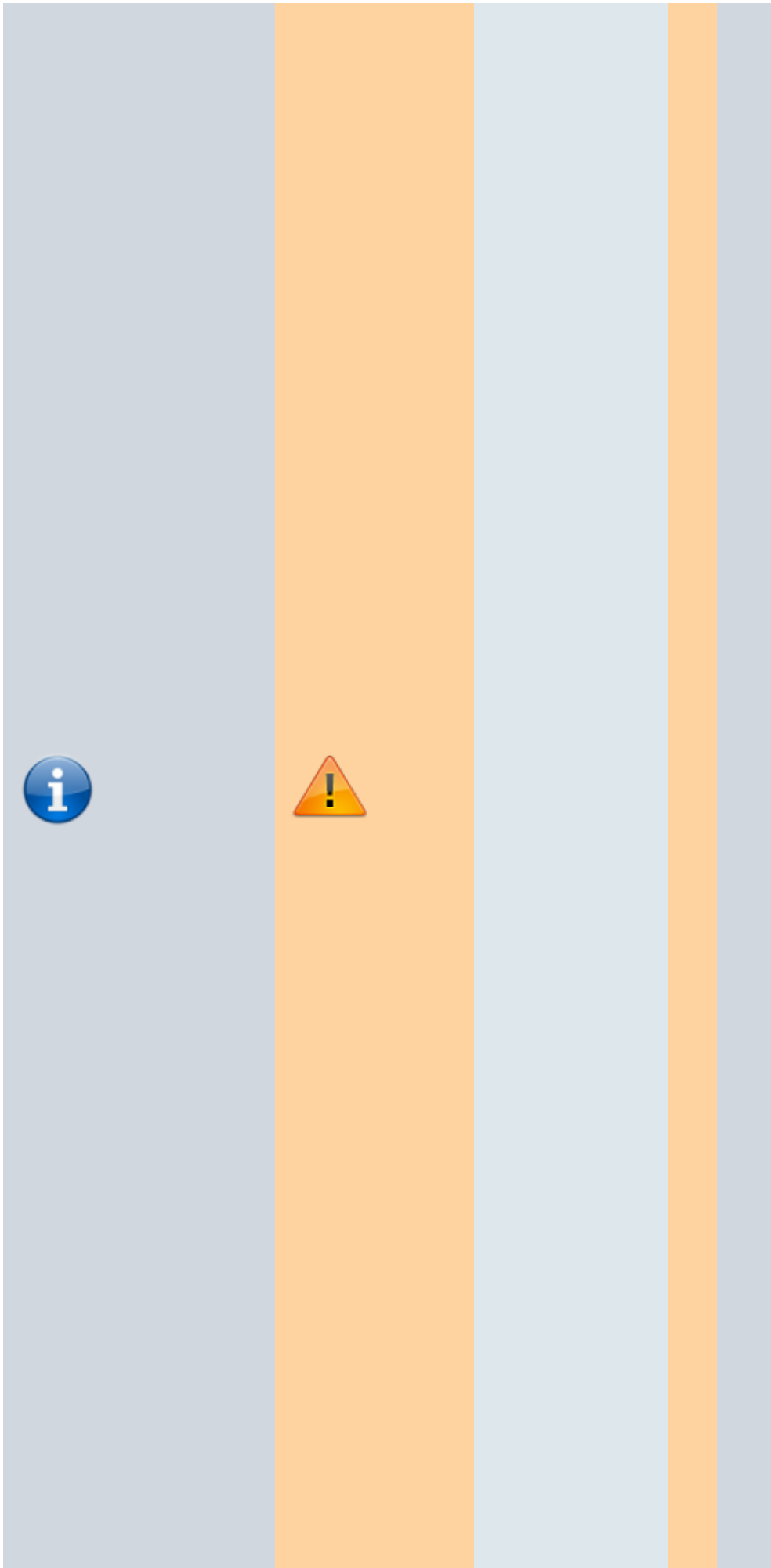


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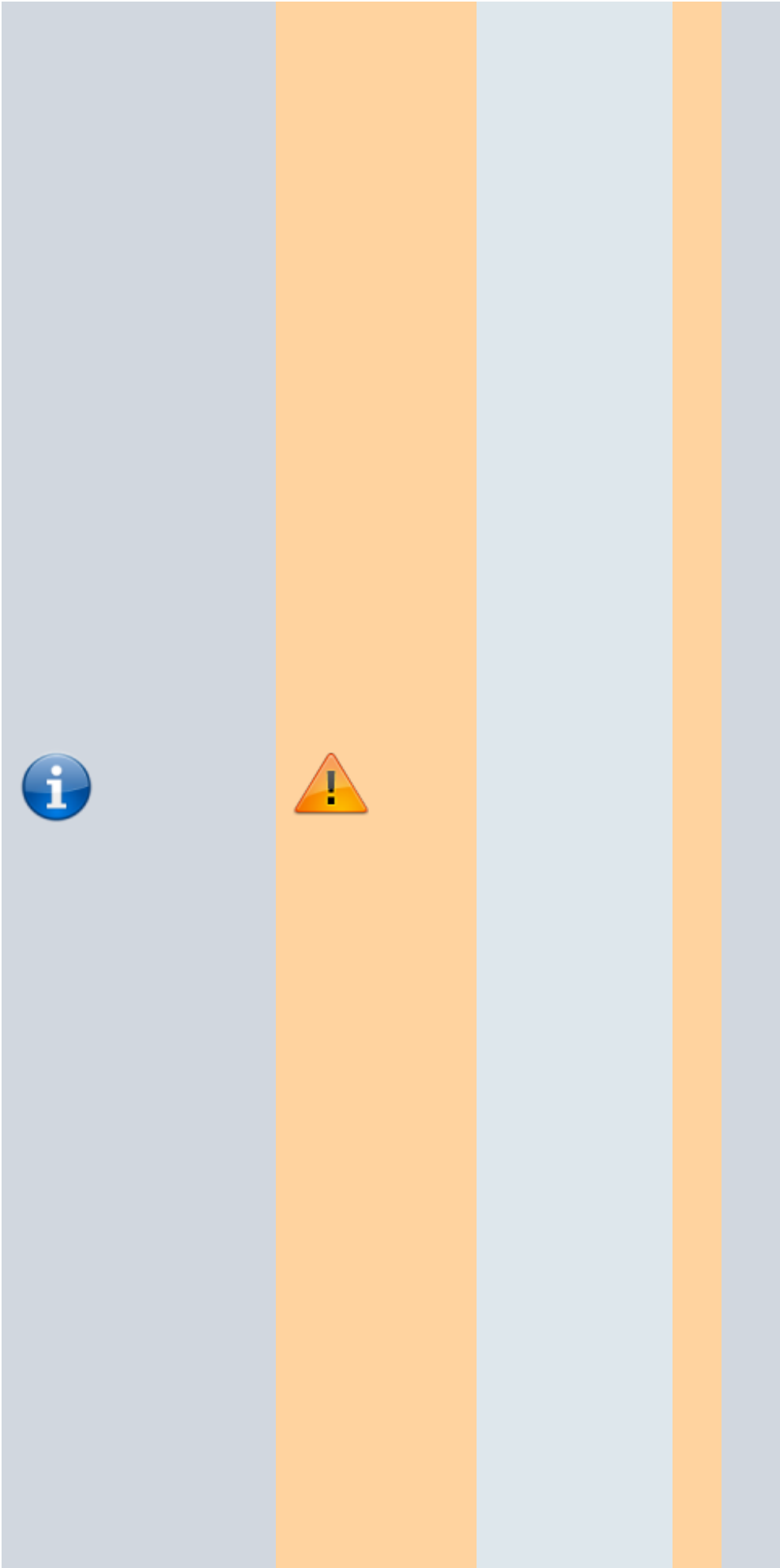


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4. Adresses du DNS du fournisseur de votre accès : 212.



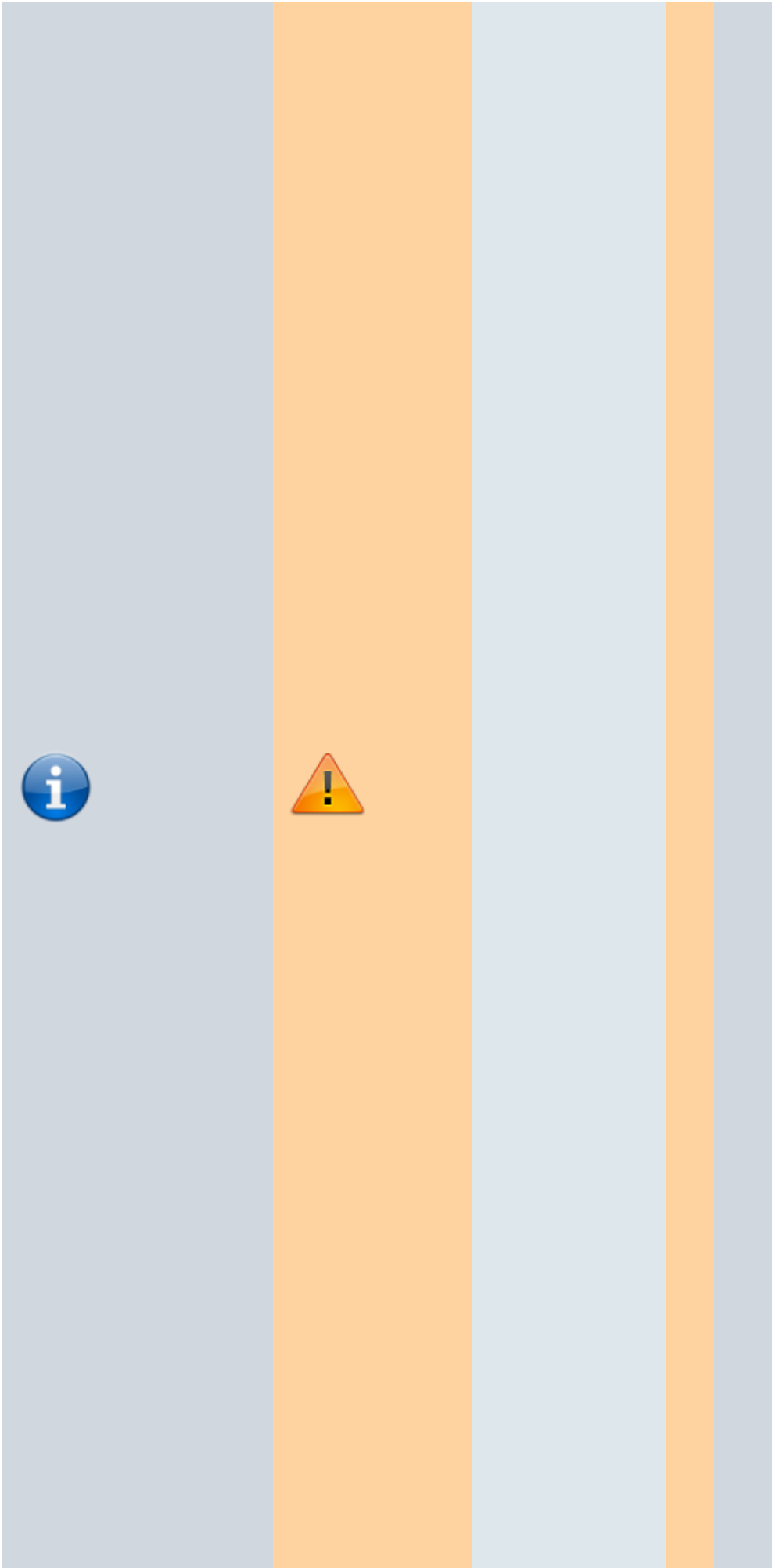
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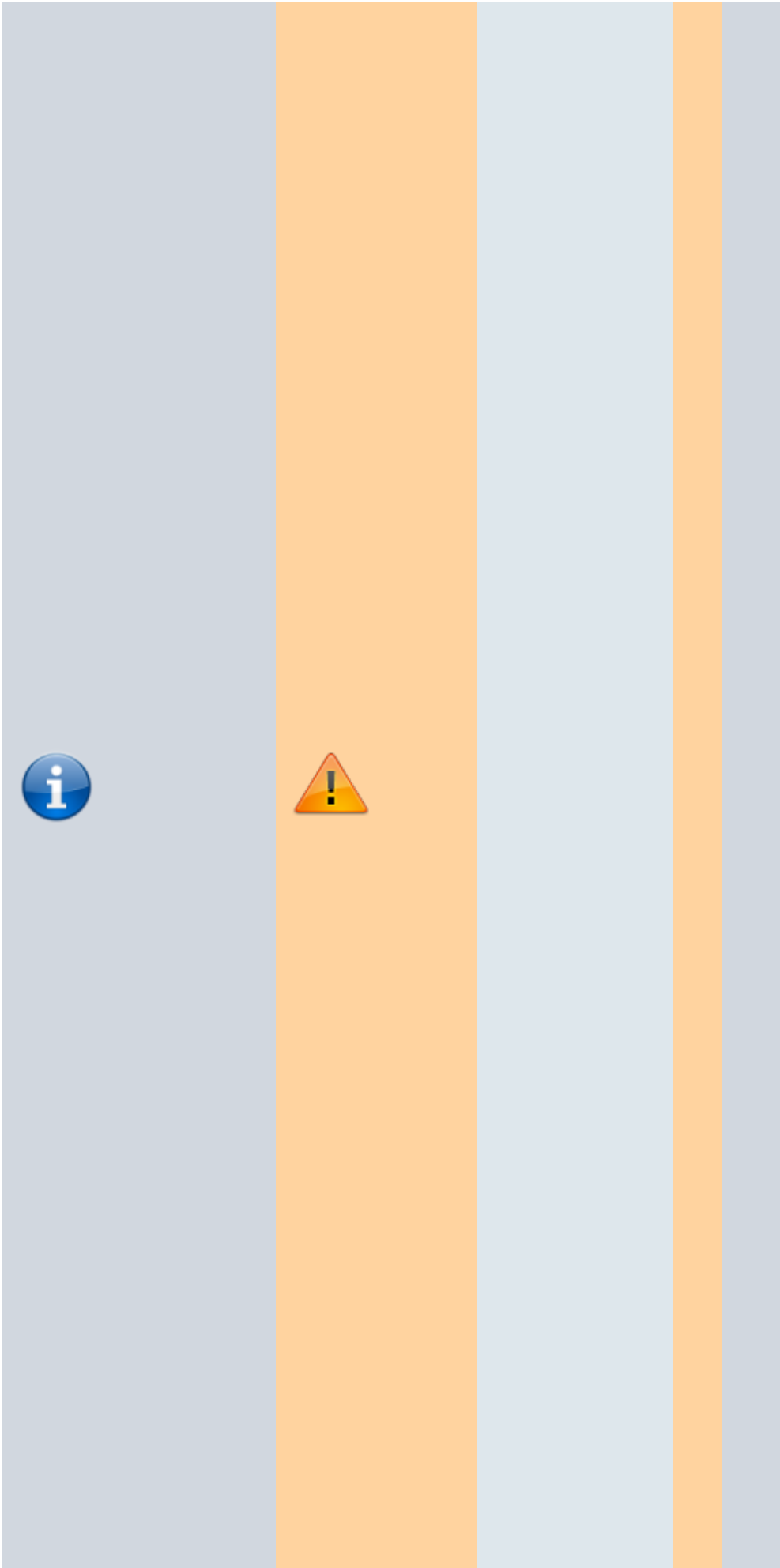
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Adresse IP	nom complet de l'hôte	Nom de domaine	Nom
192.168.0.100	ns.monddomaine.lan	monddomaine.lan	serveurDNS



Adresse IP	Nom complet de l'hôte	Nom de domaine	Nom
192.168.0.1	machine1.monddomaine.lan	monddomaine.lan	machine1

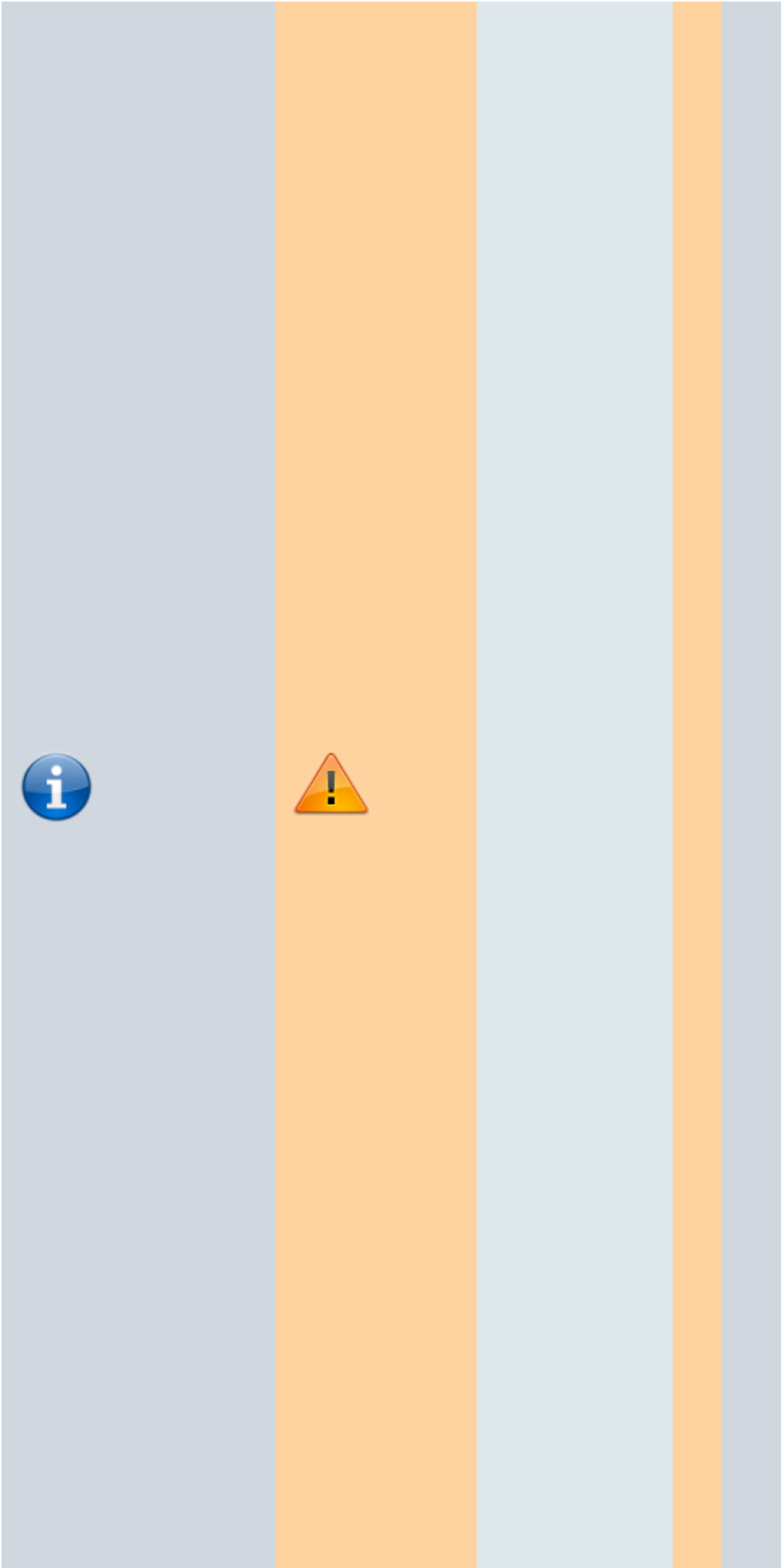


Adresse IP	nom complet de l'hôte	Nom de domaine	Nom
192.168.0.2	machine2.mondomaine.lan	mondomaine.lan	machine2



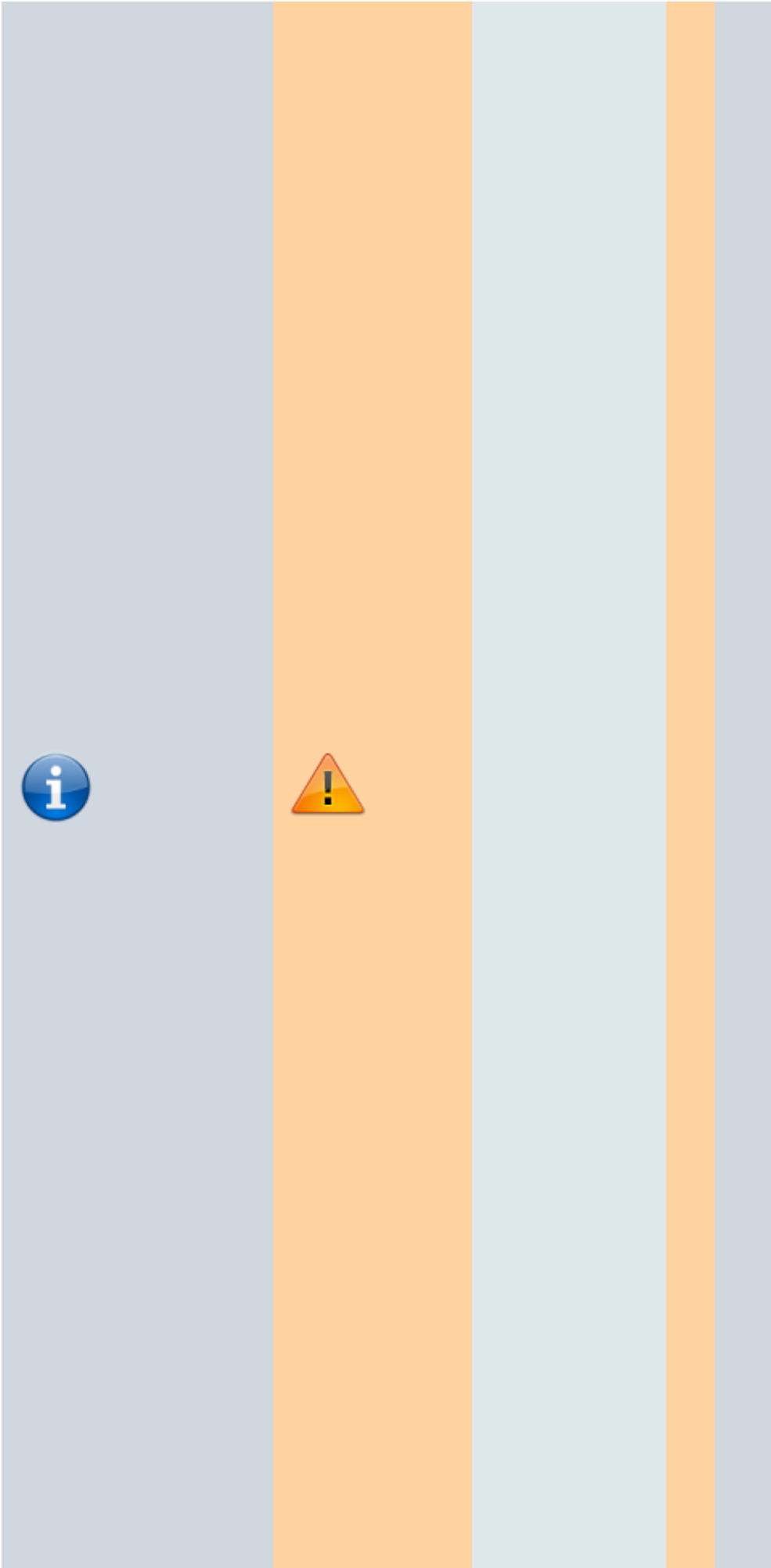
A d r e s s e I P	192 . 168 . 0 . X
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N o m d ' h ô t e	m a c h i n e X

C o n f i g u r a t

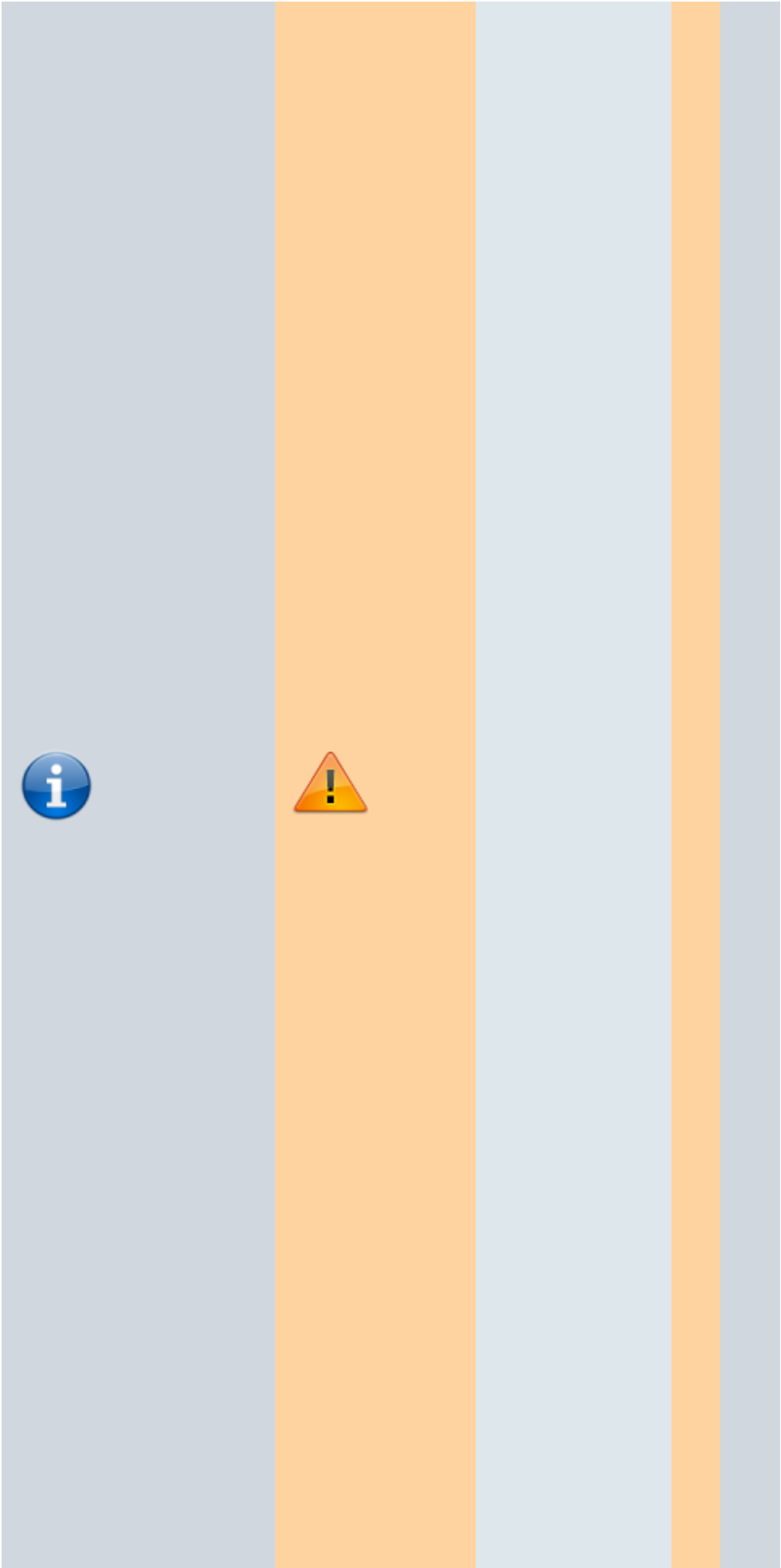


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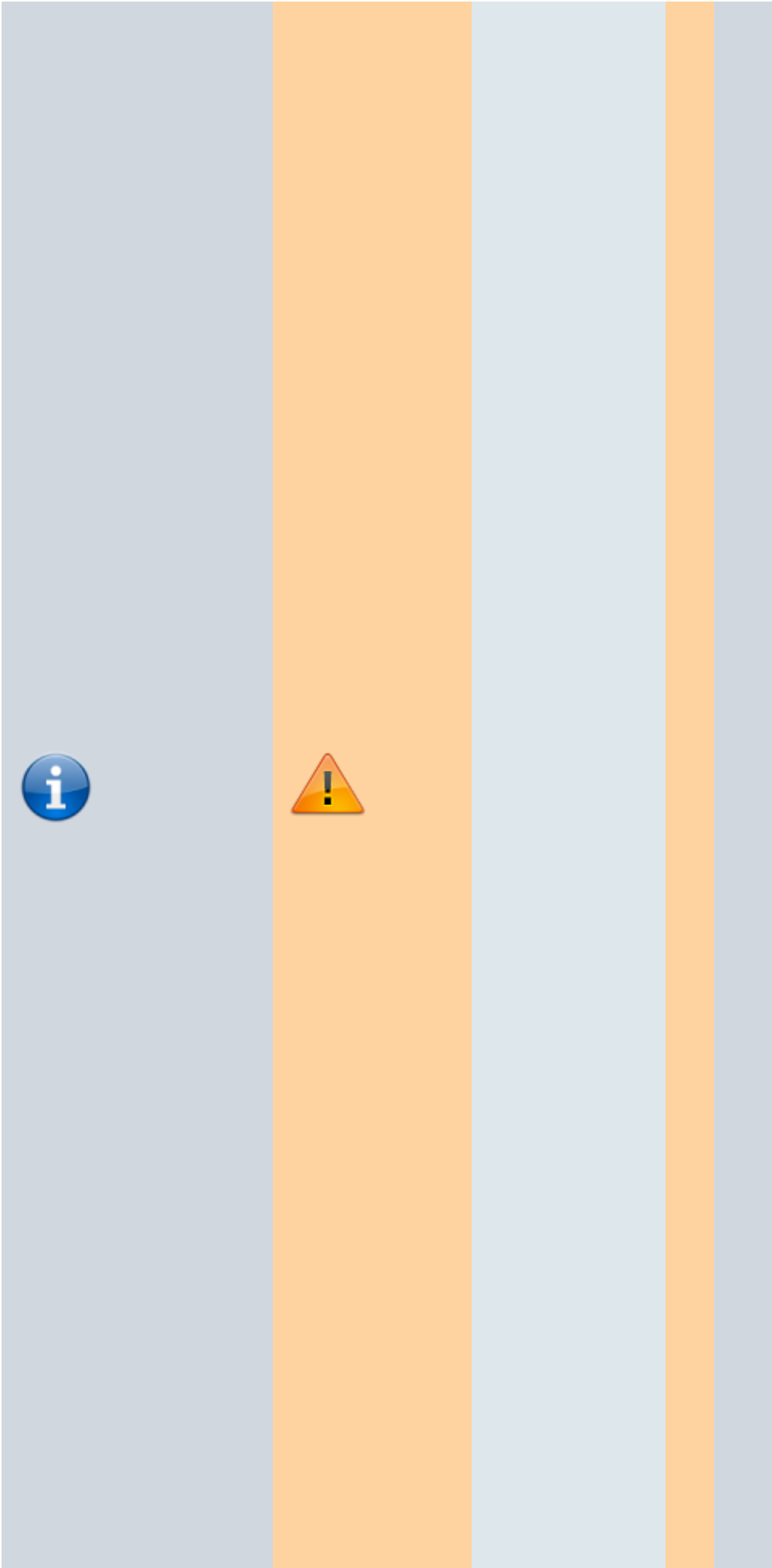
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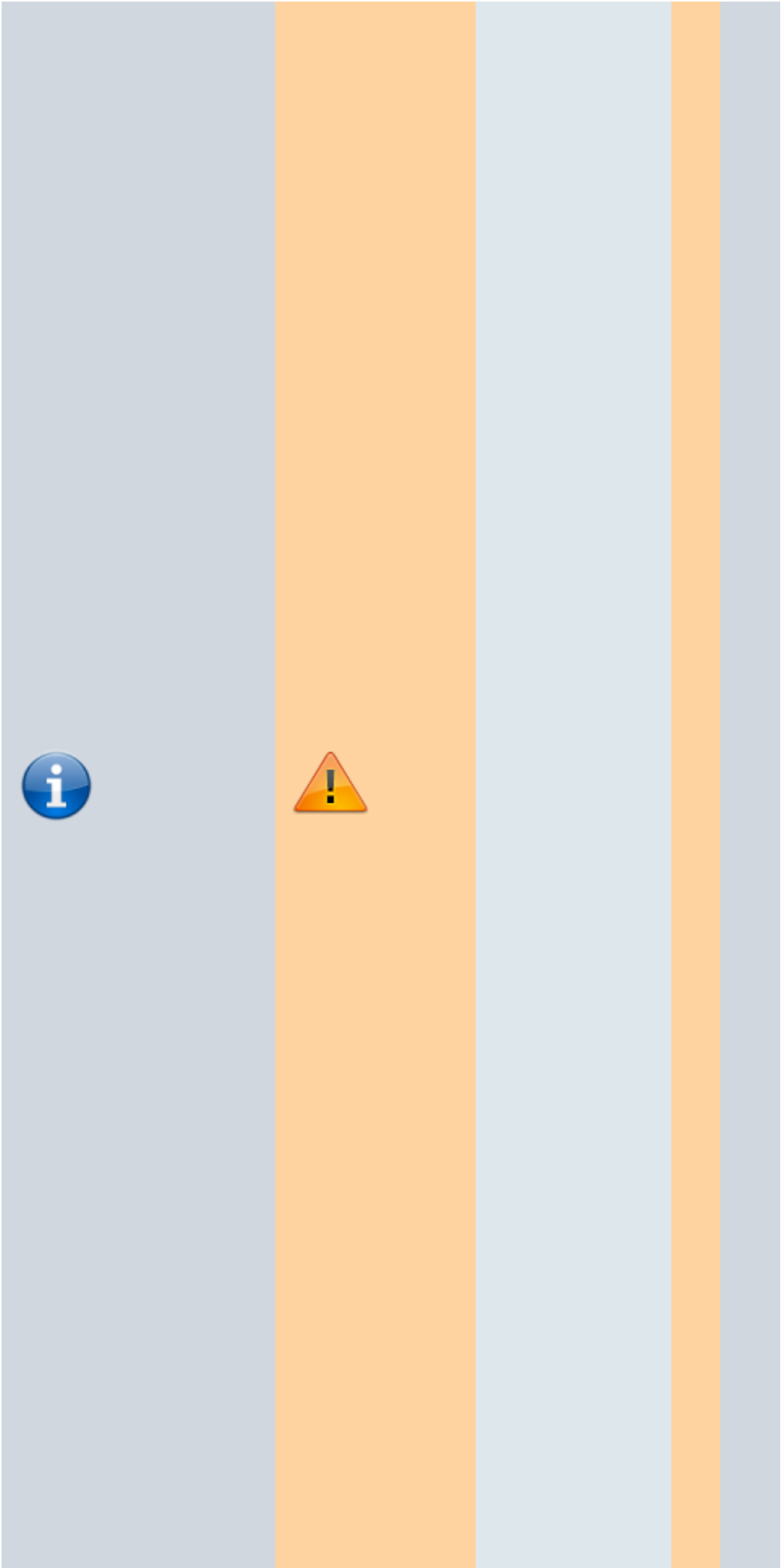
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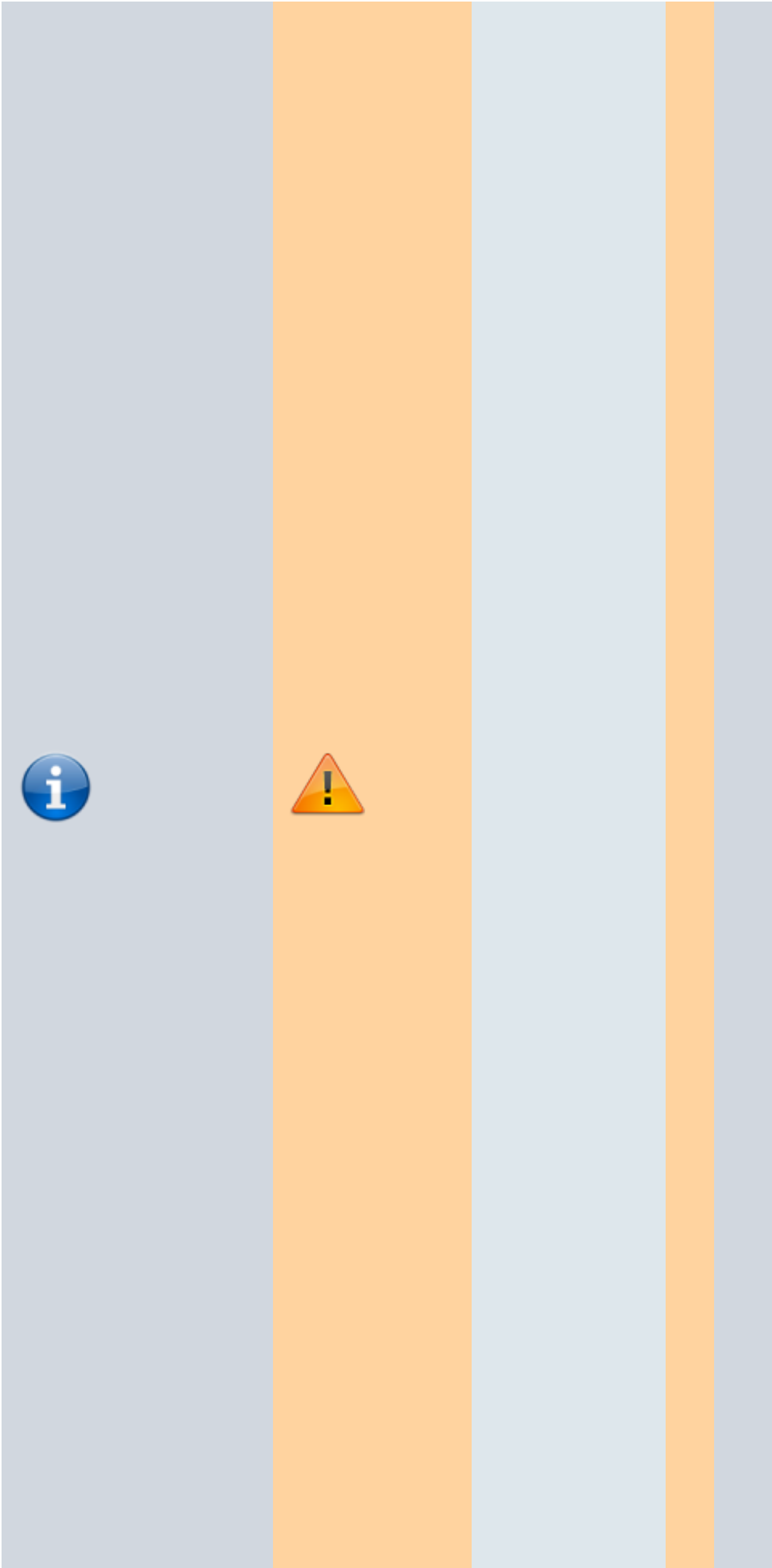
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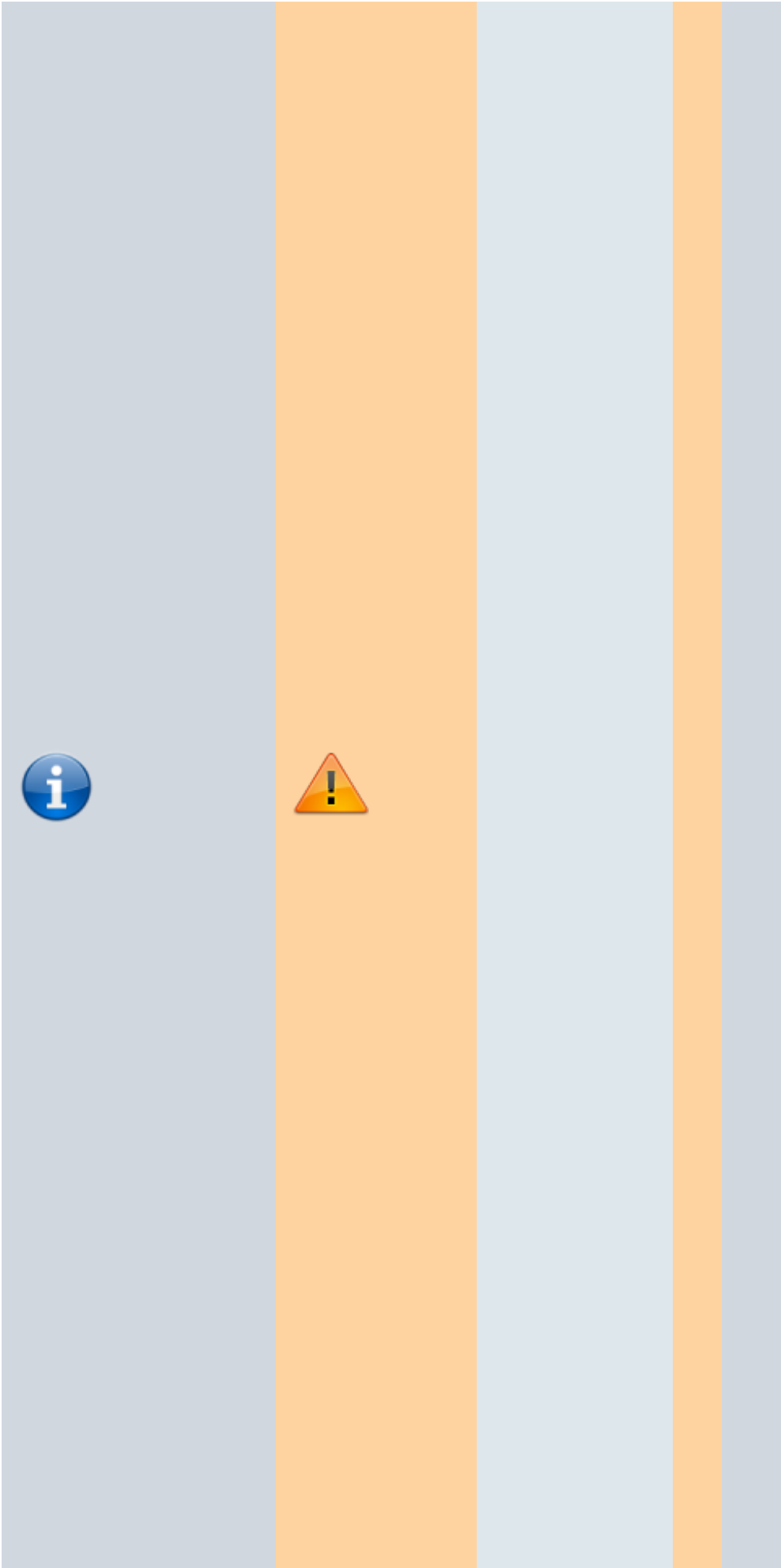
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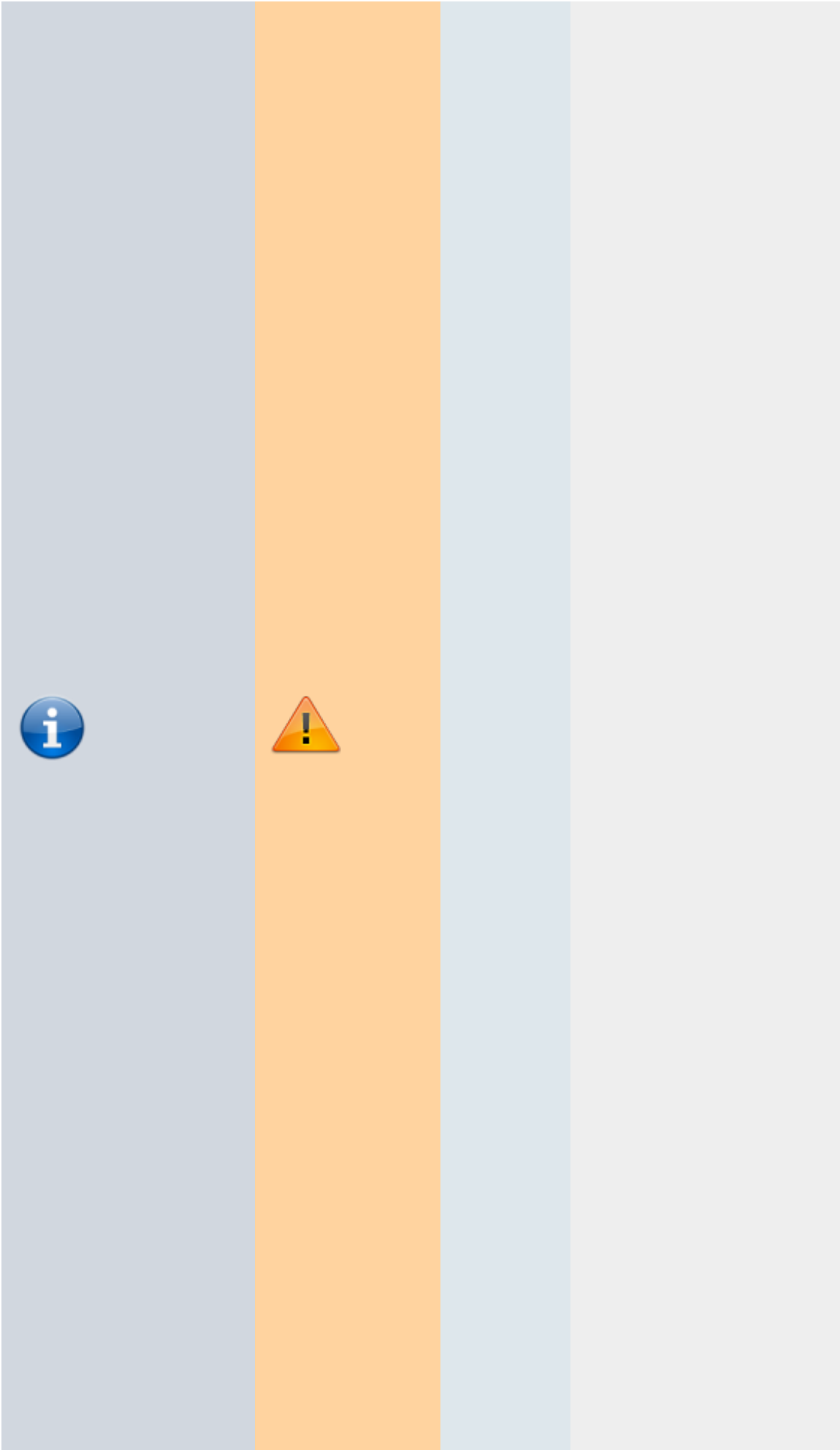
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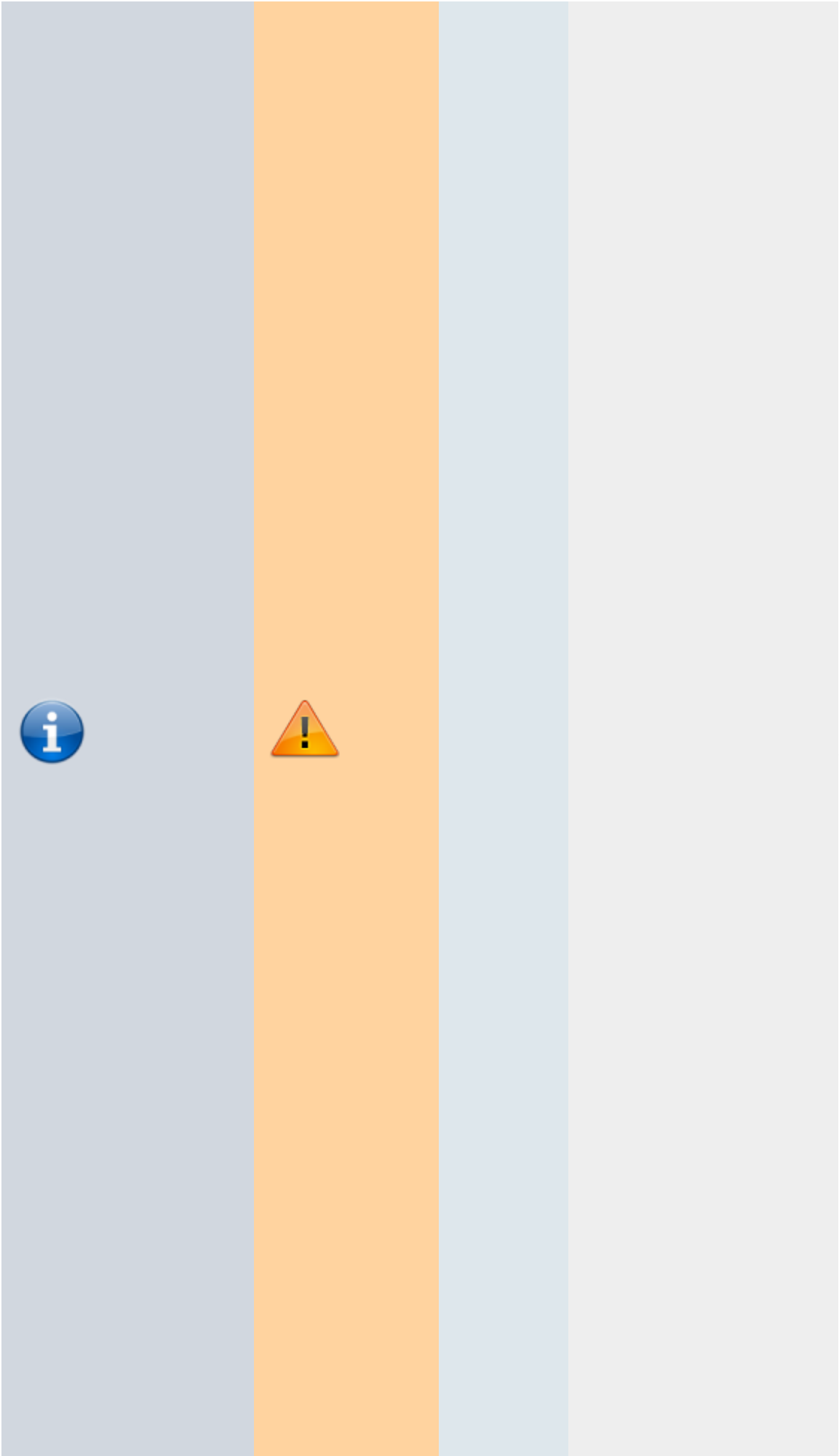
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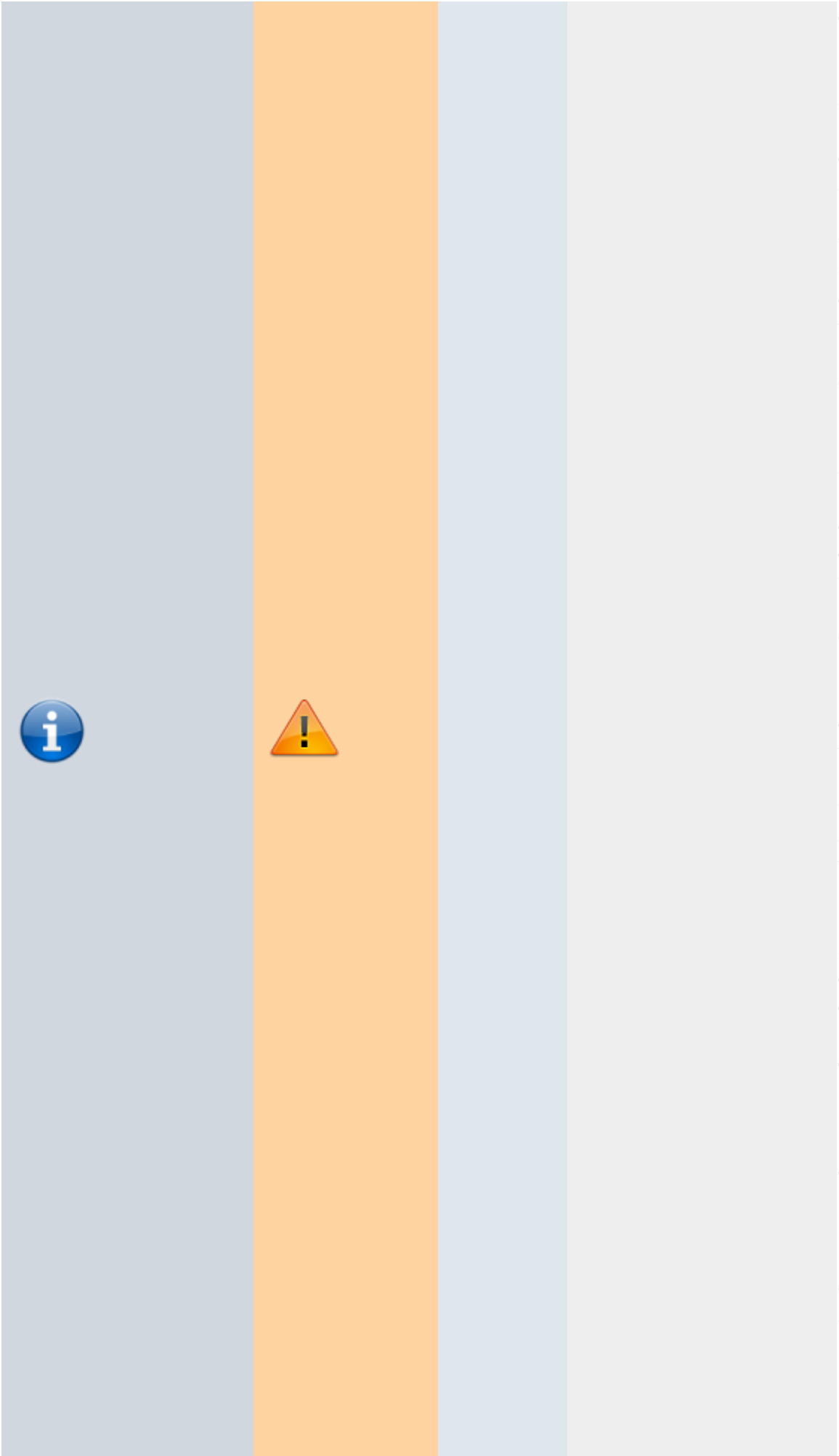


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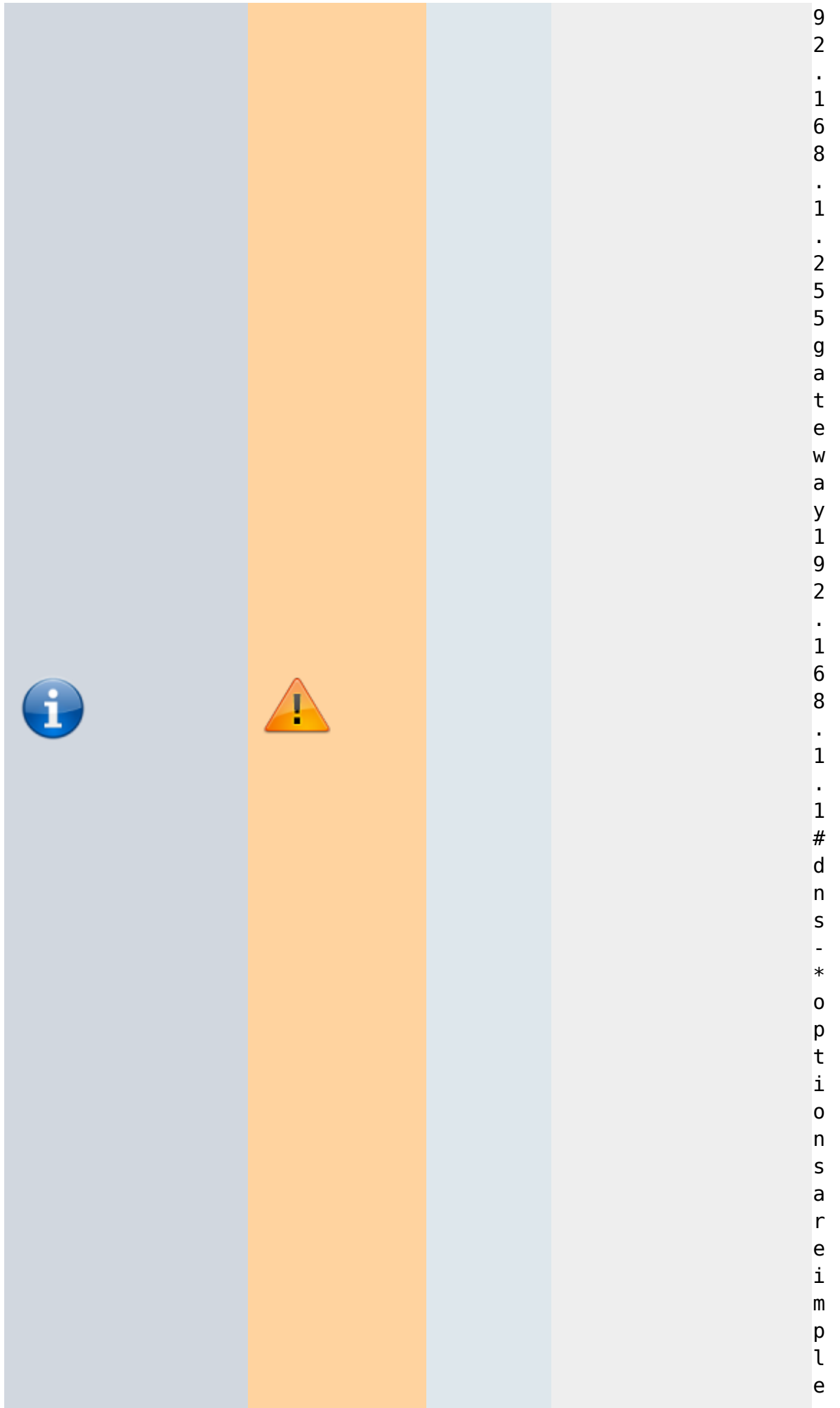
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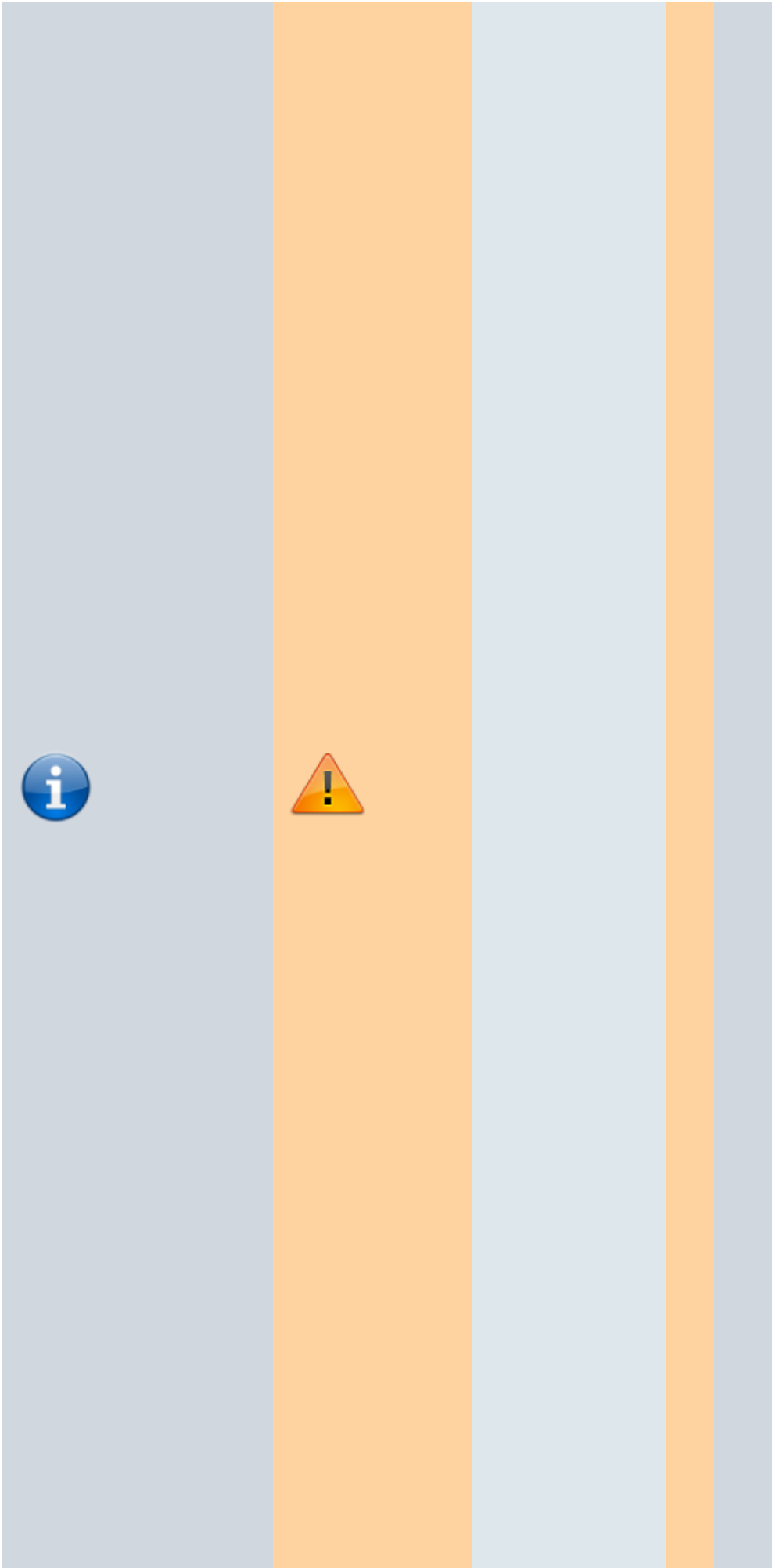
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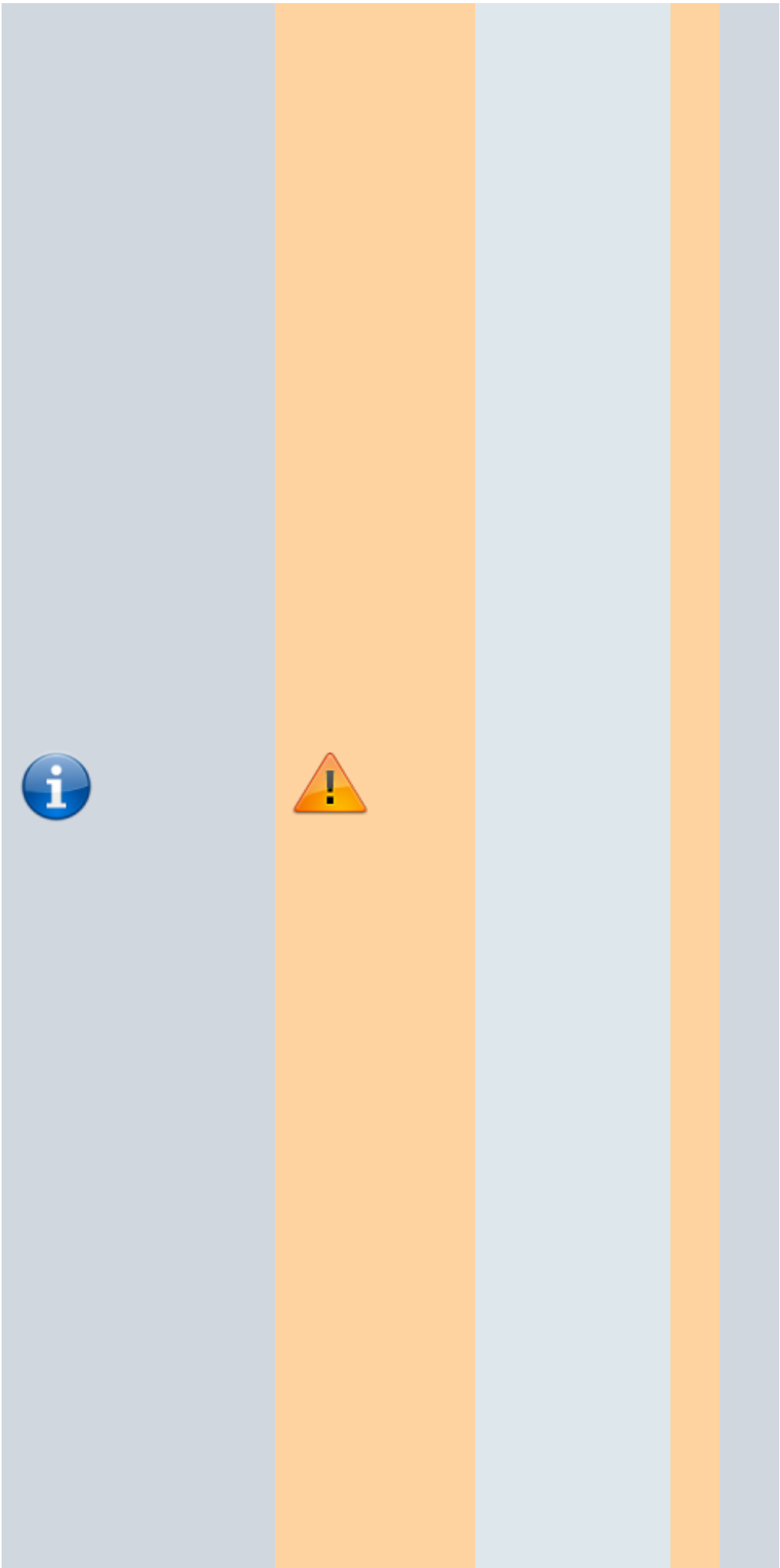
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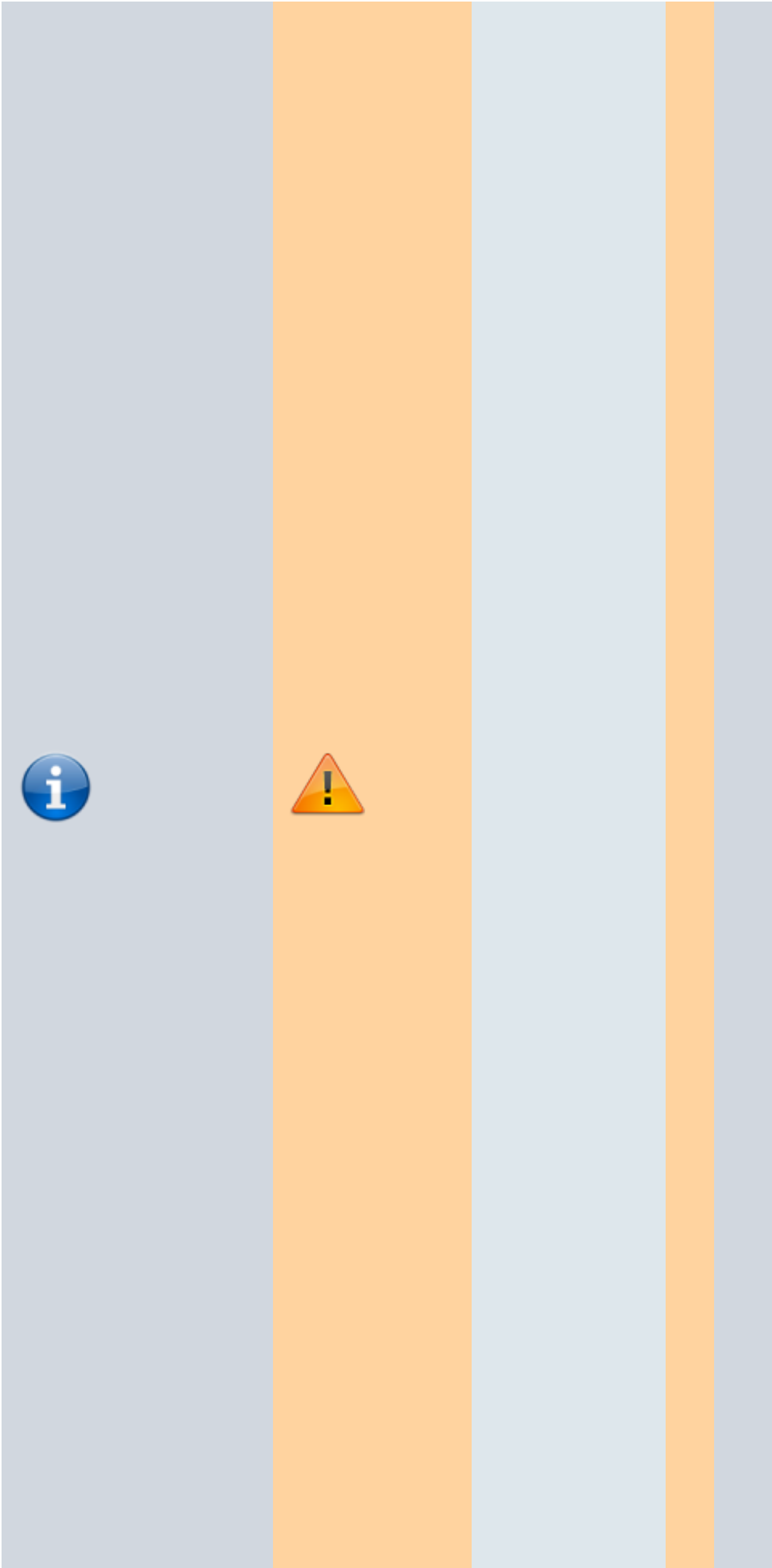


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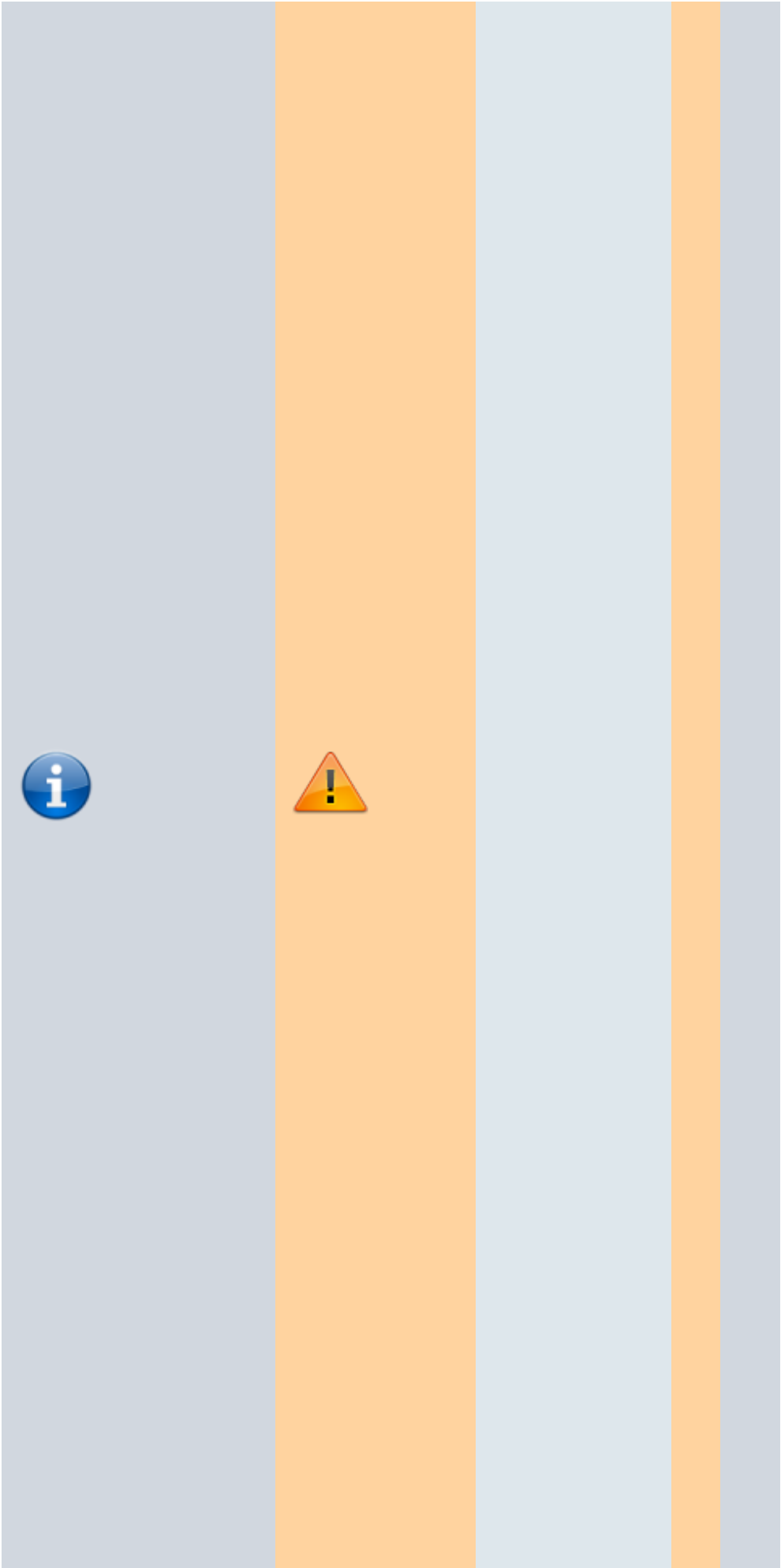
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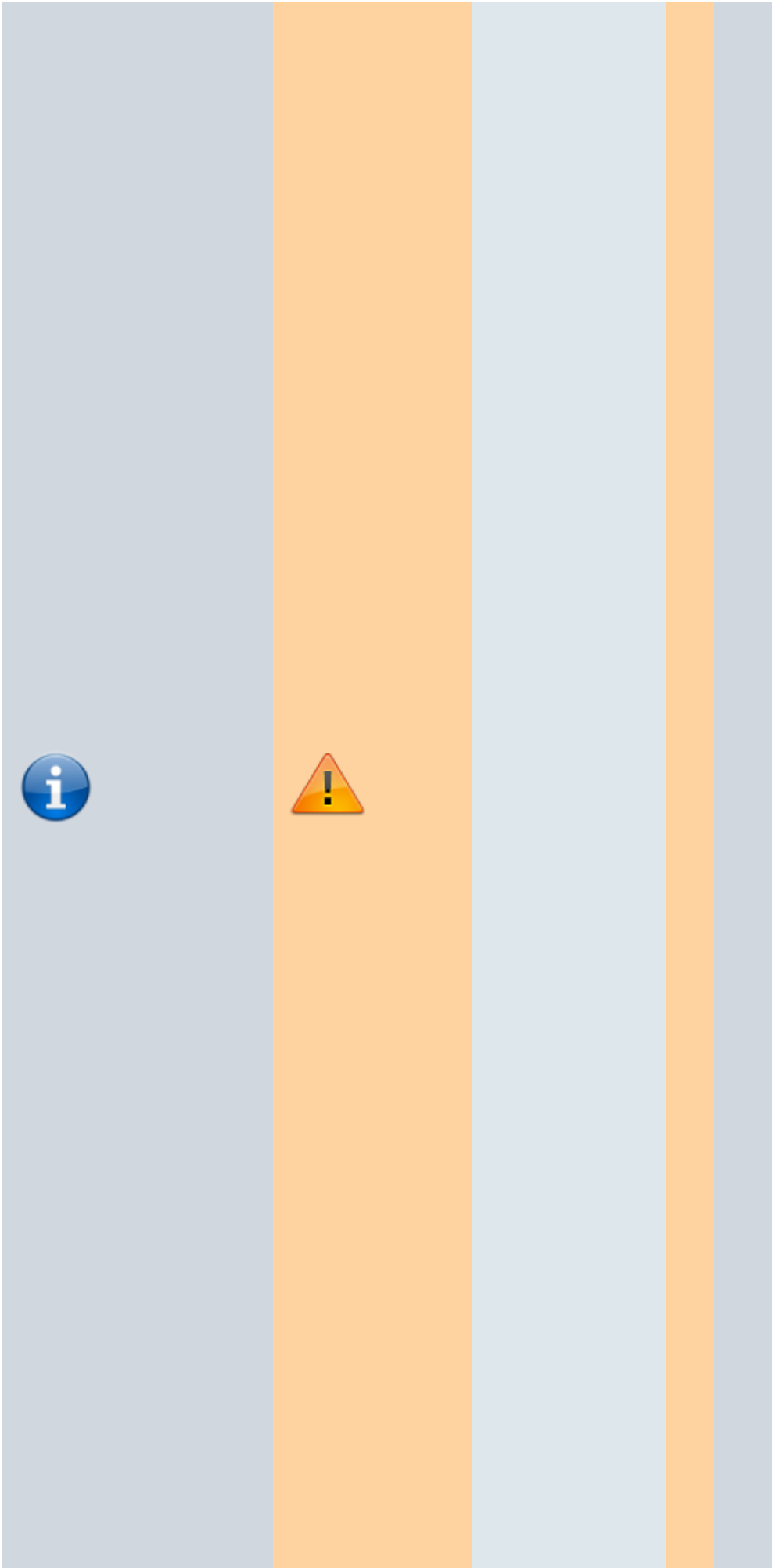
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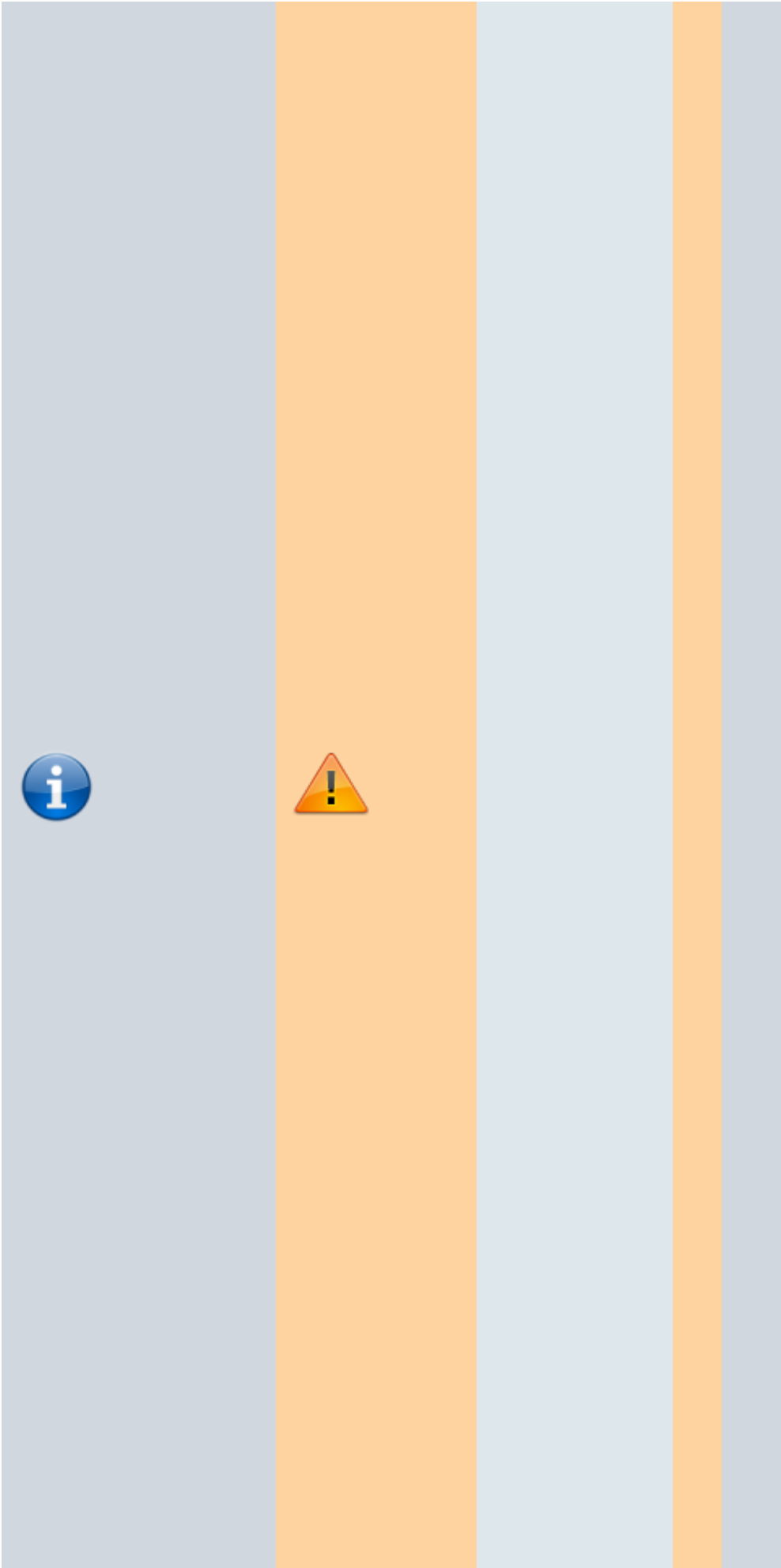
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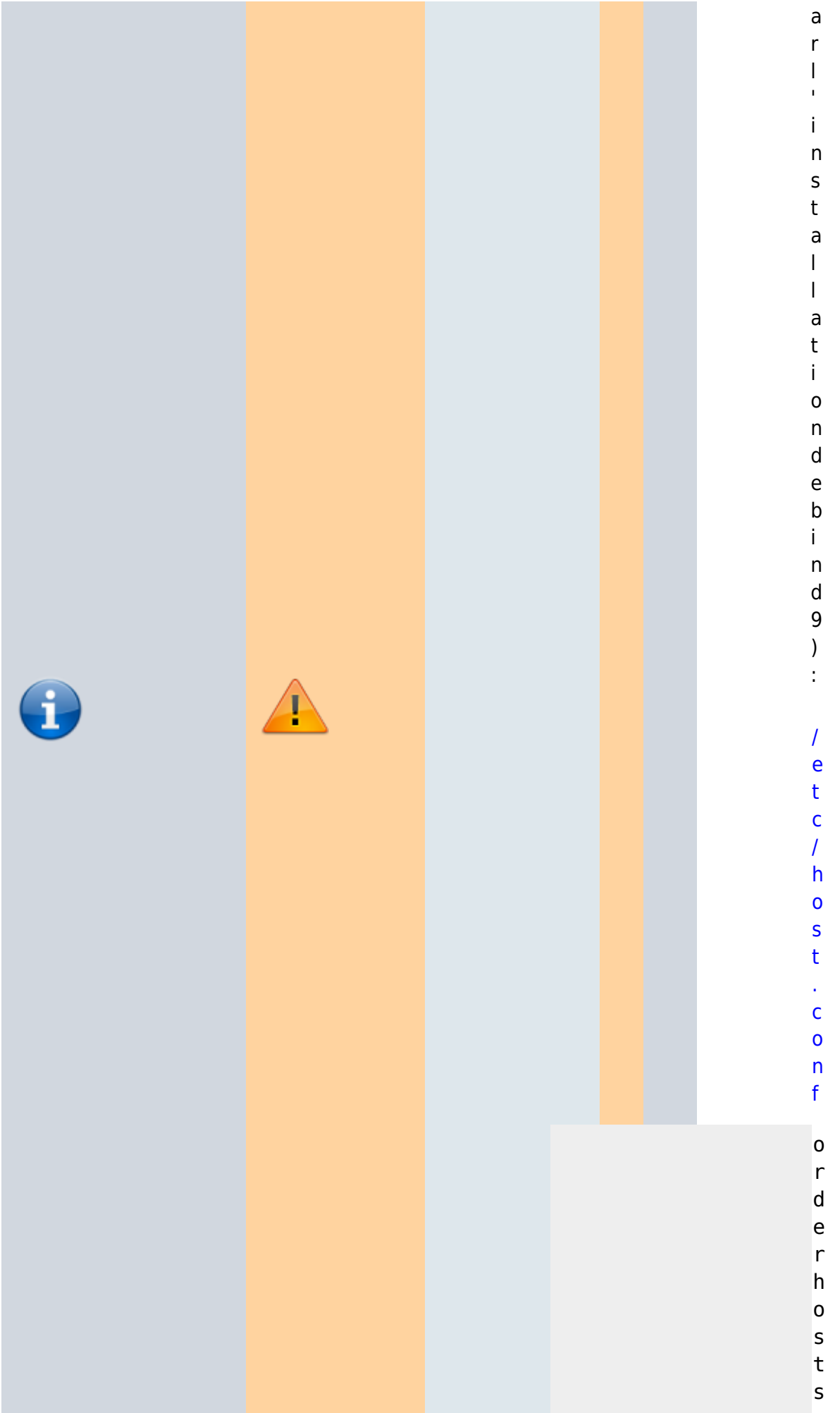
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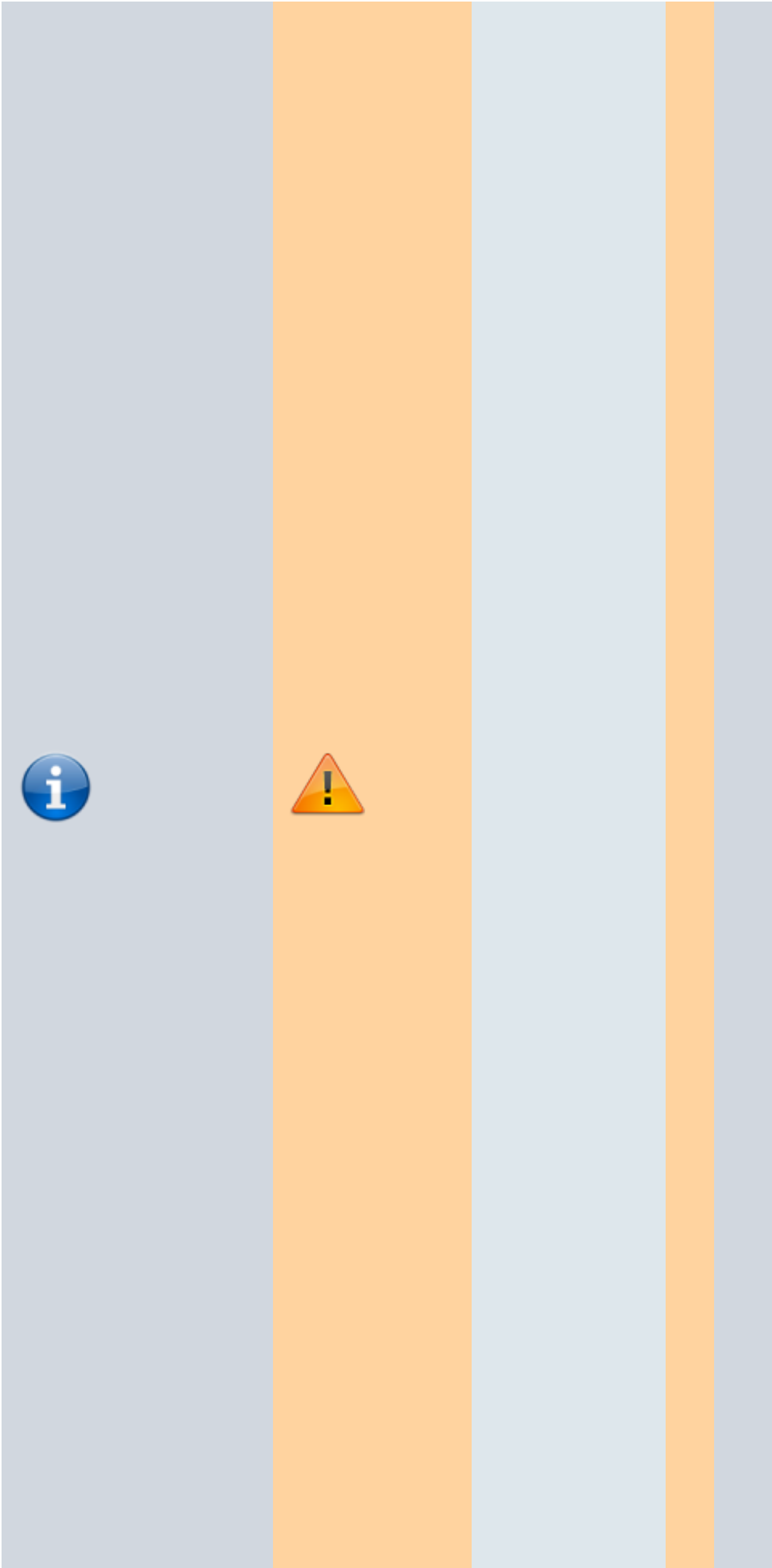
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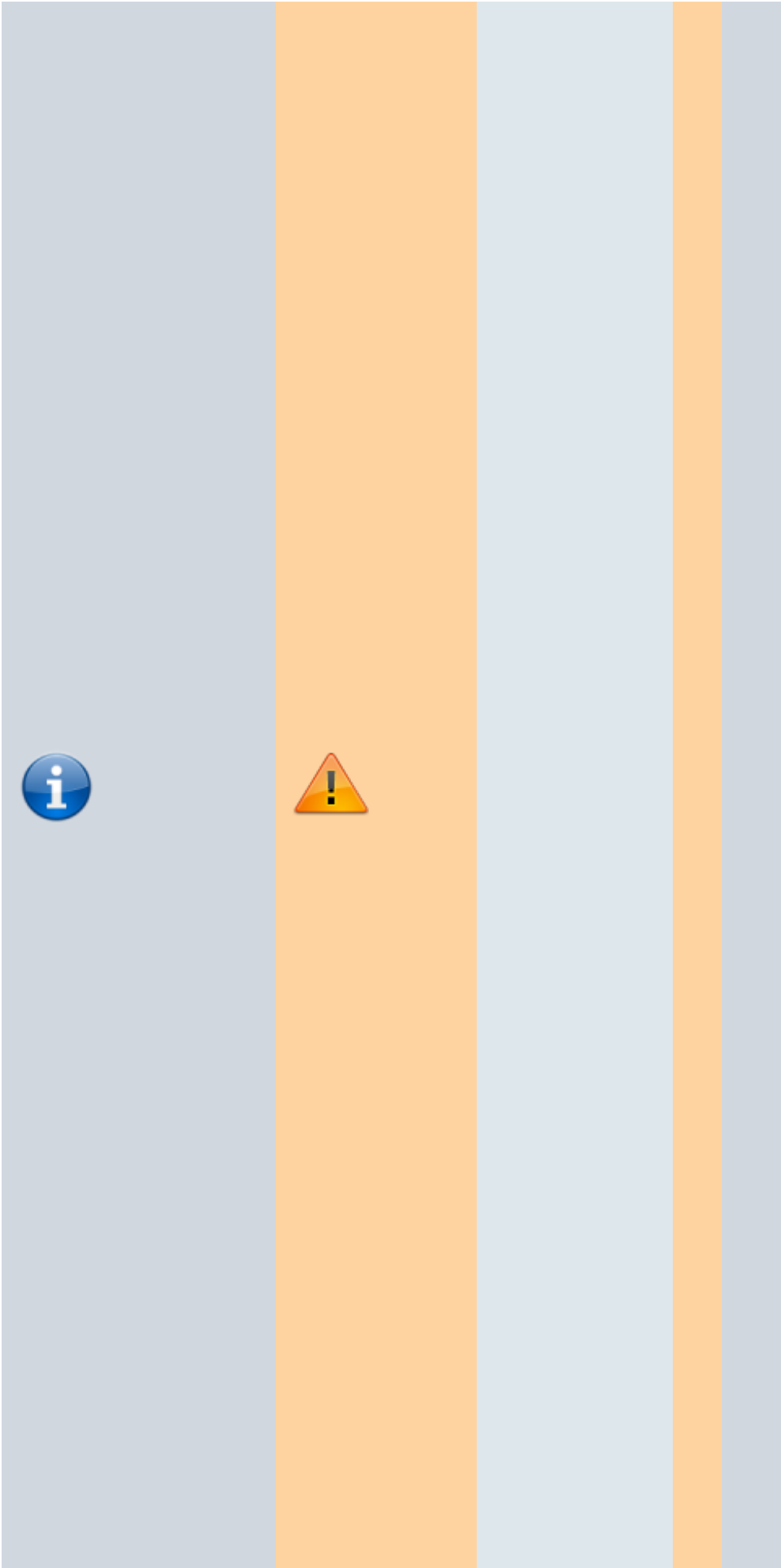
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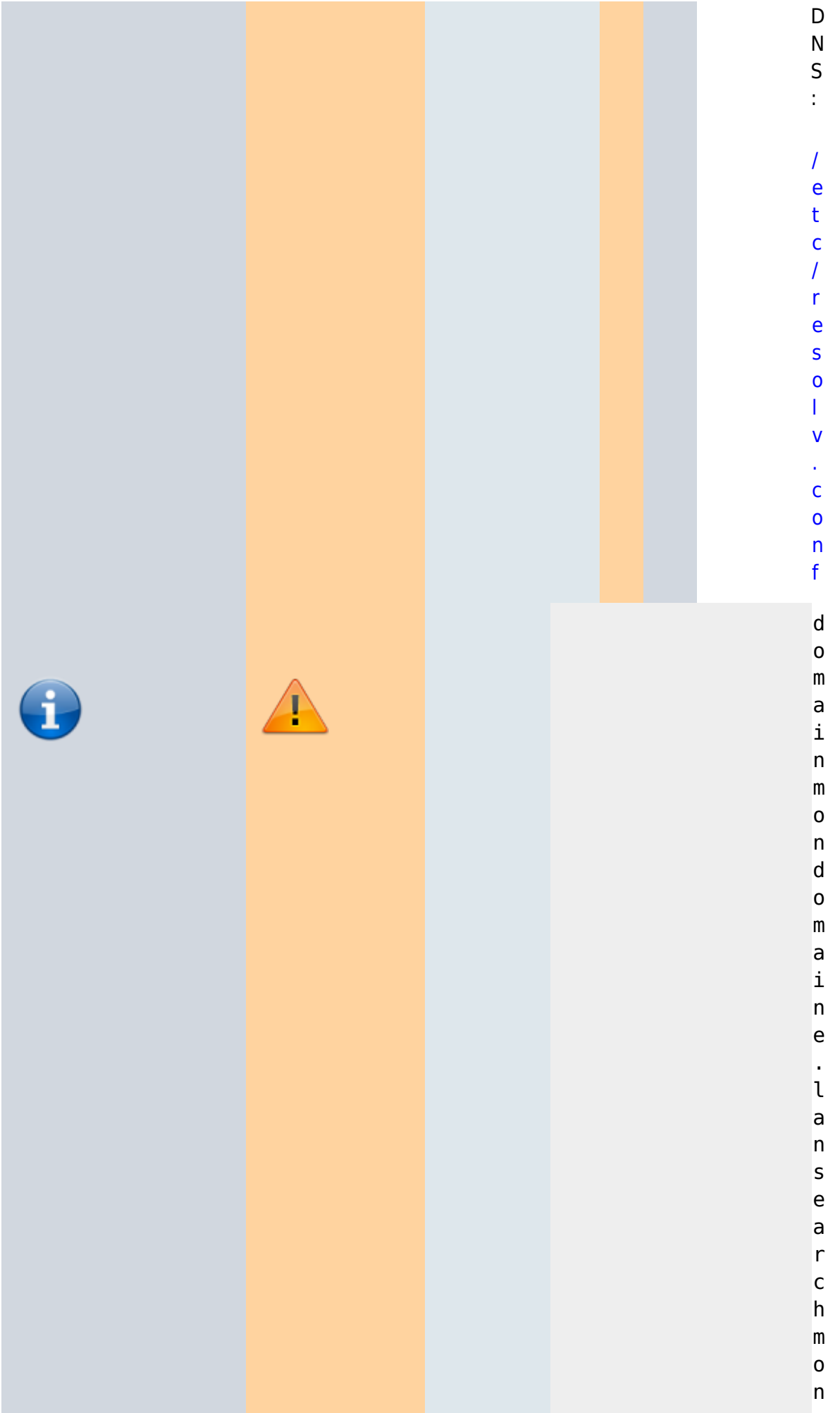
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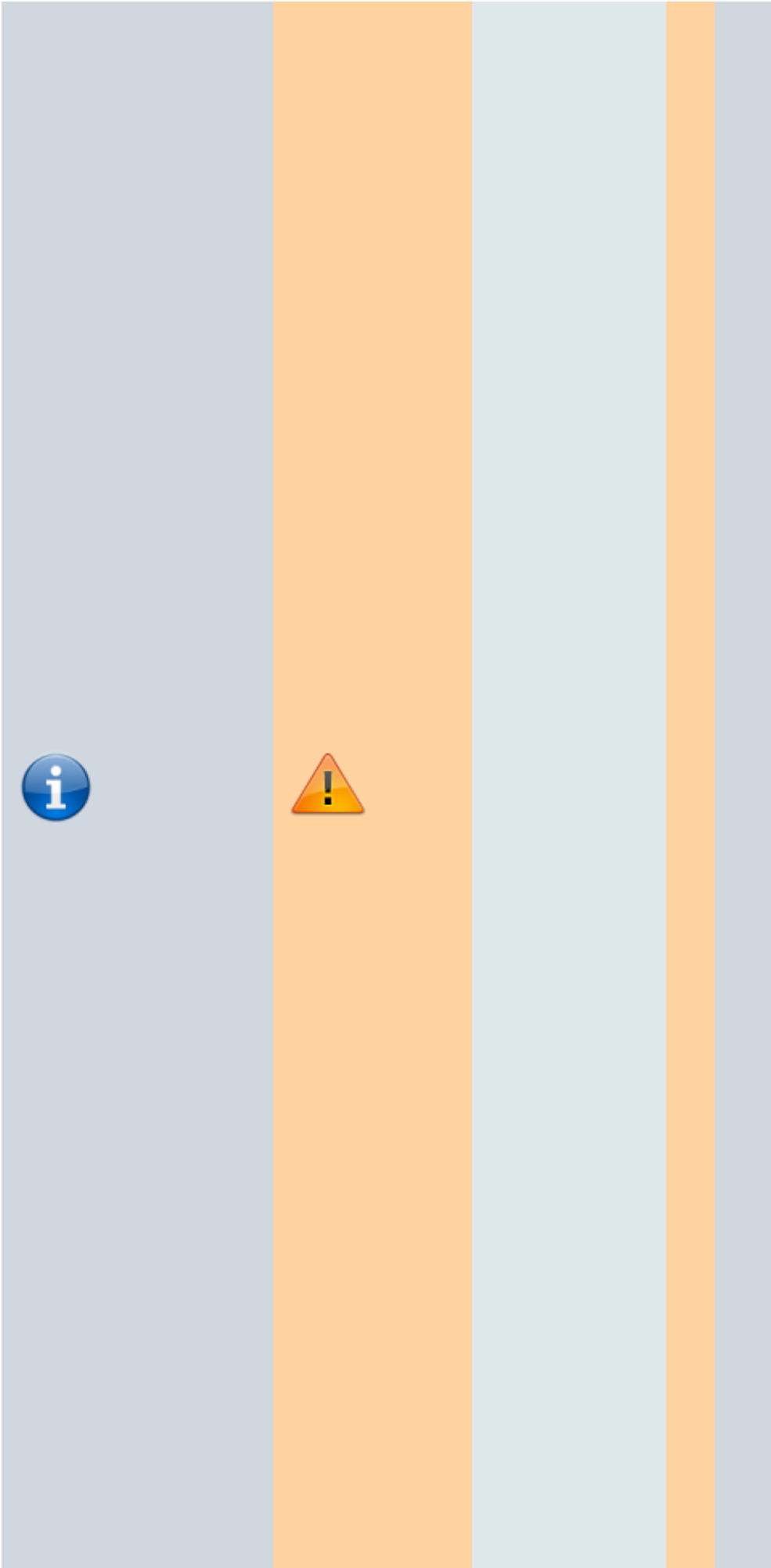


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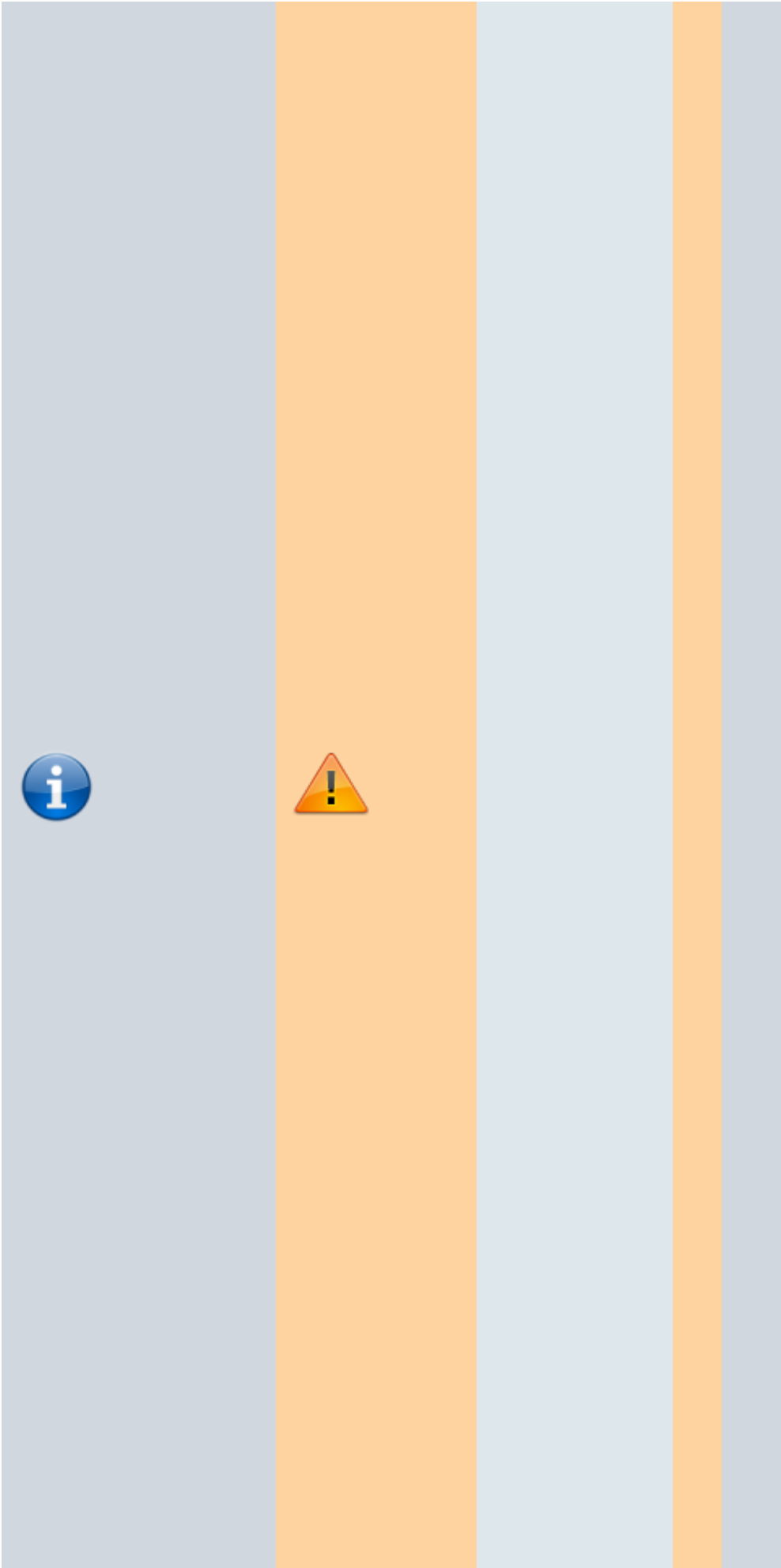
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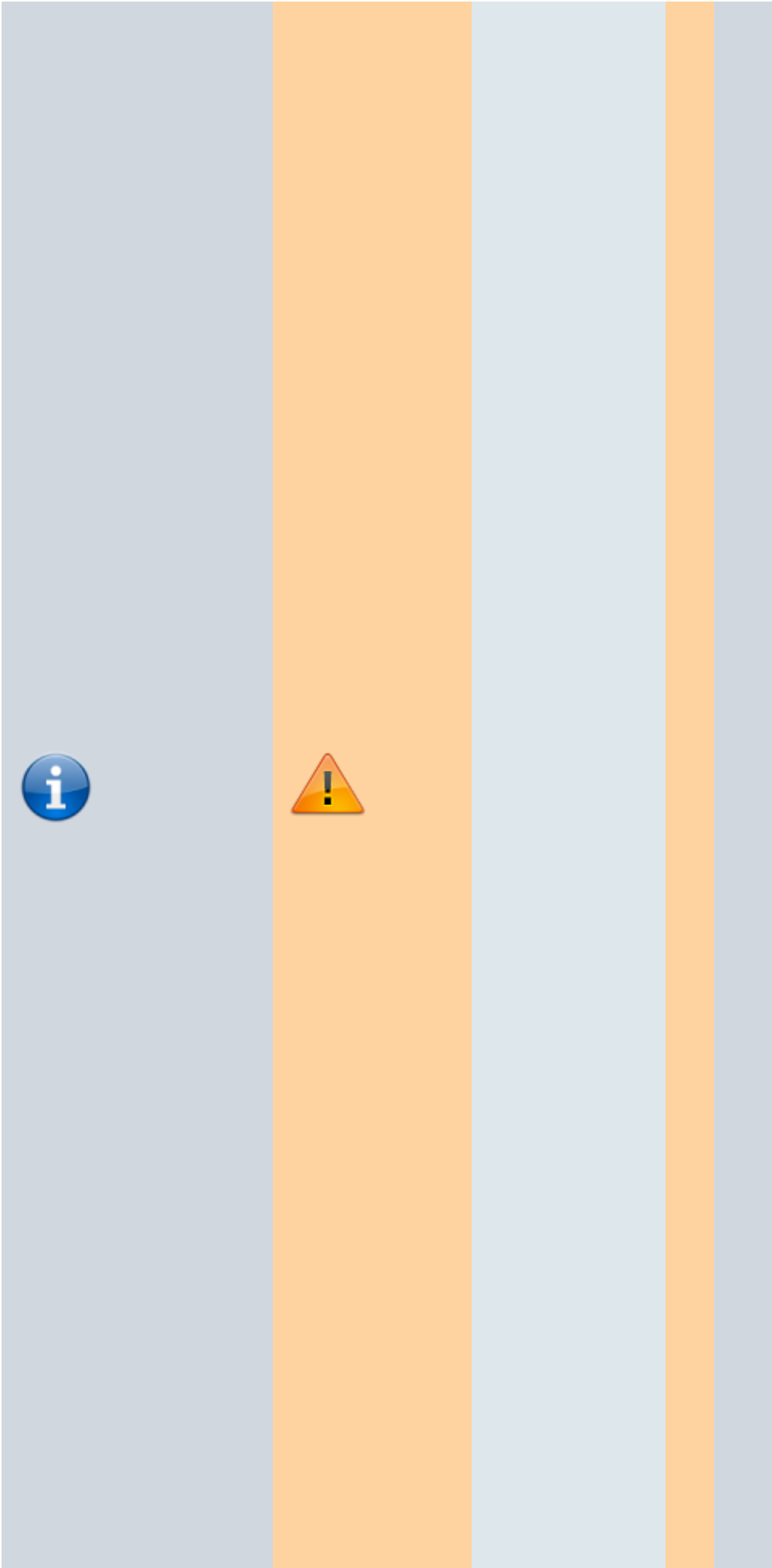


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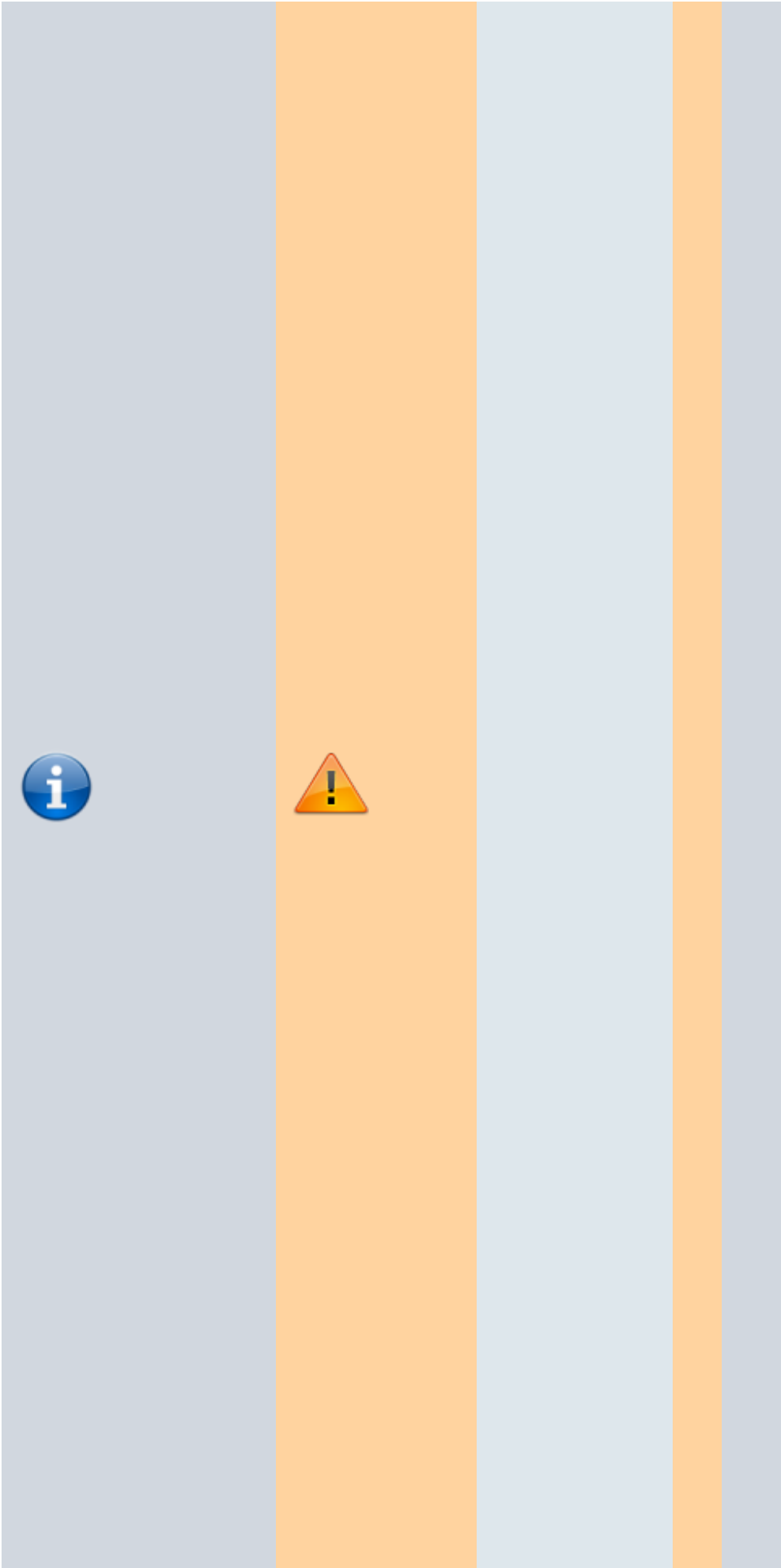
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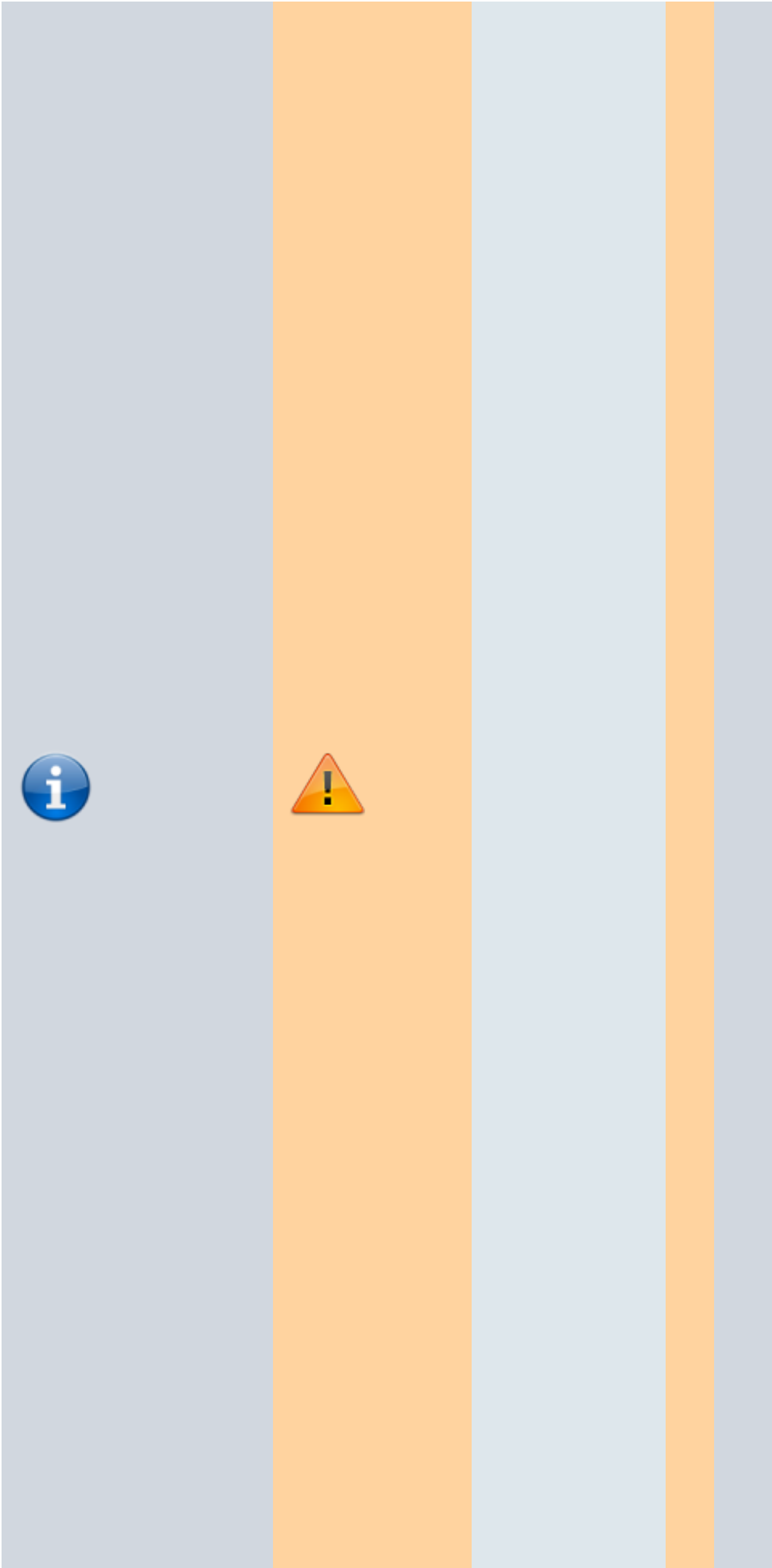
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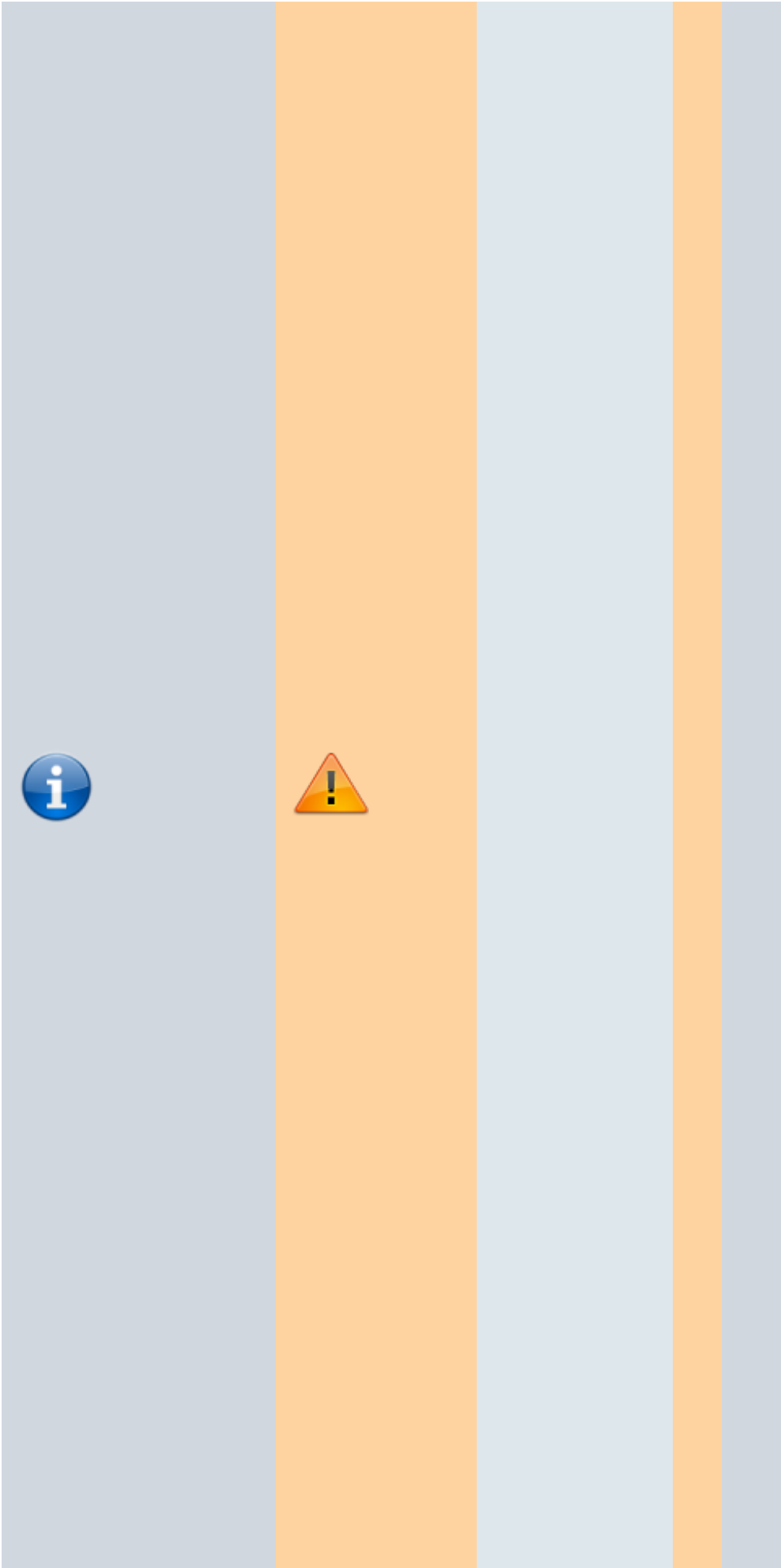
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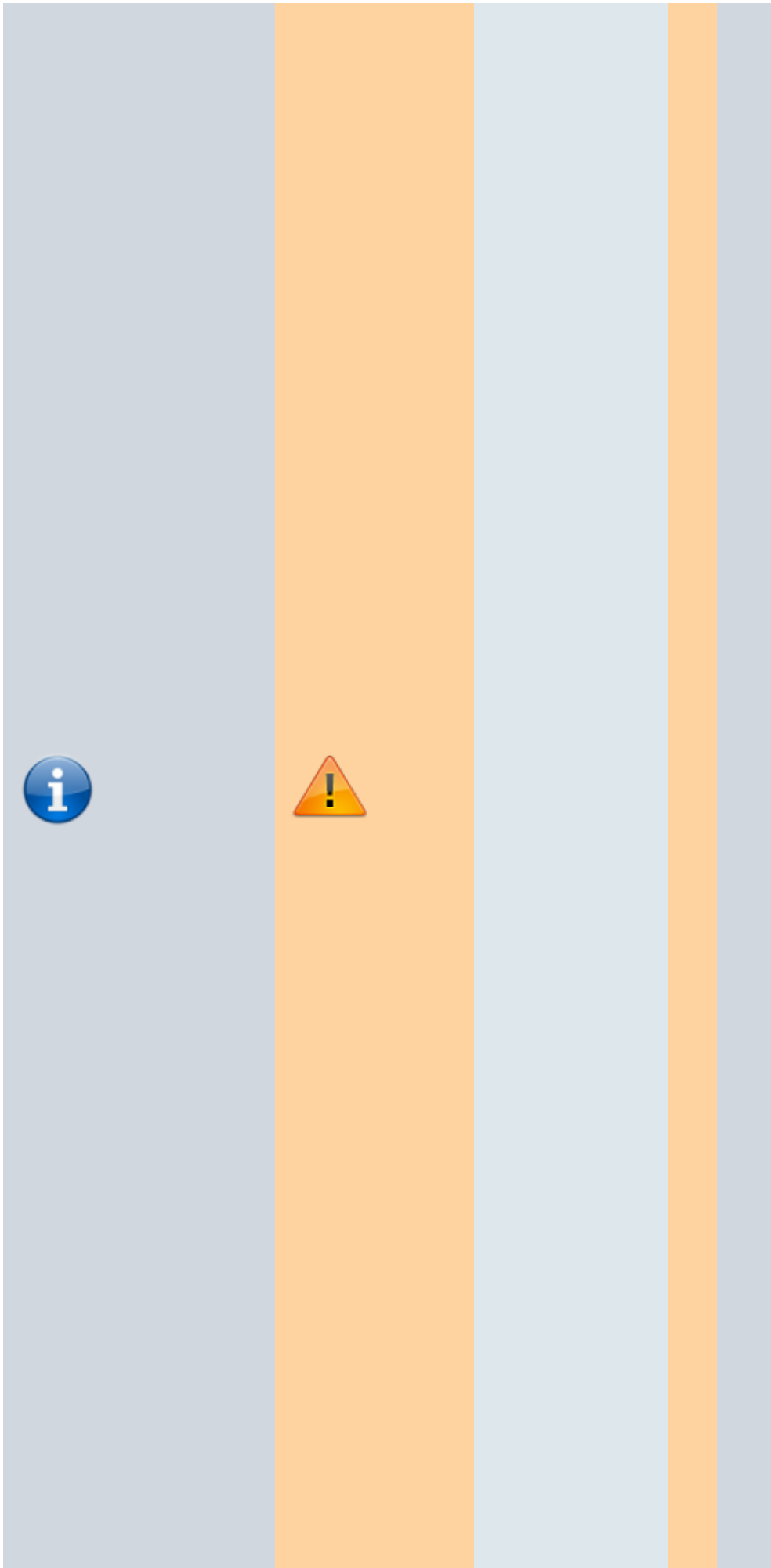


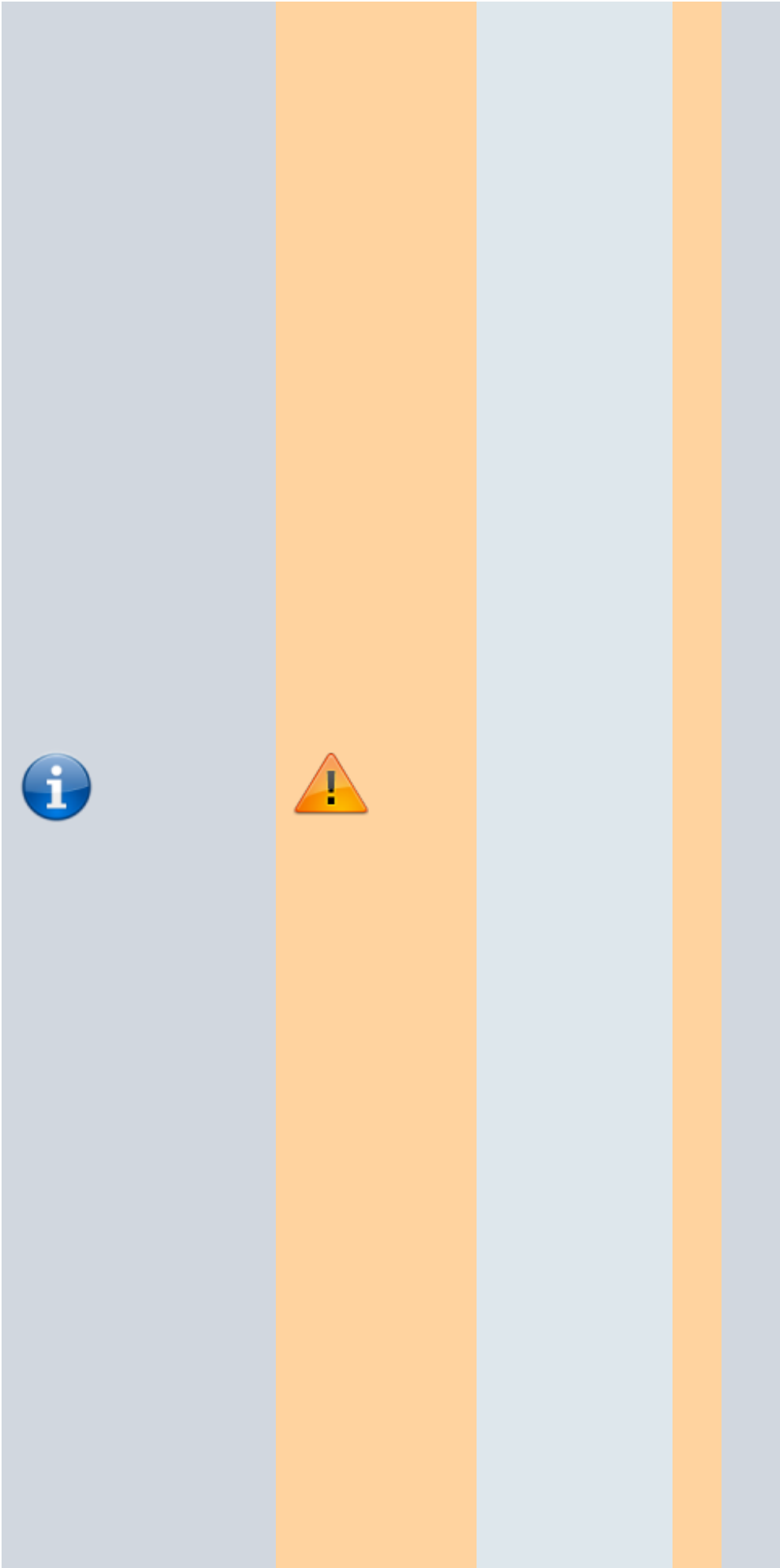
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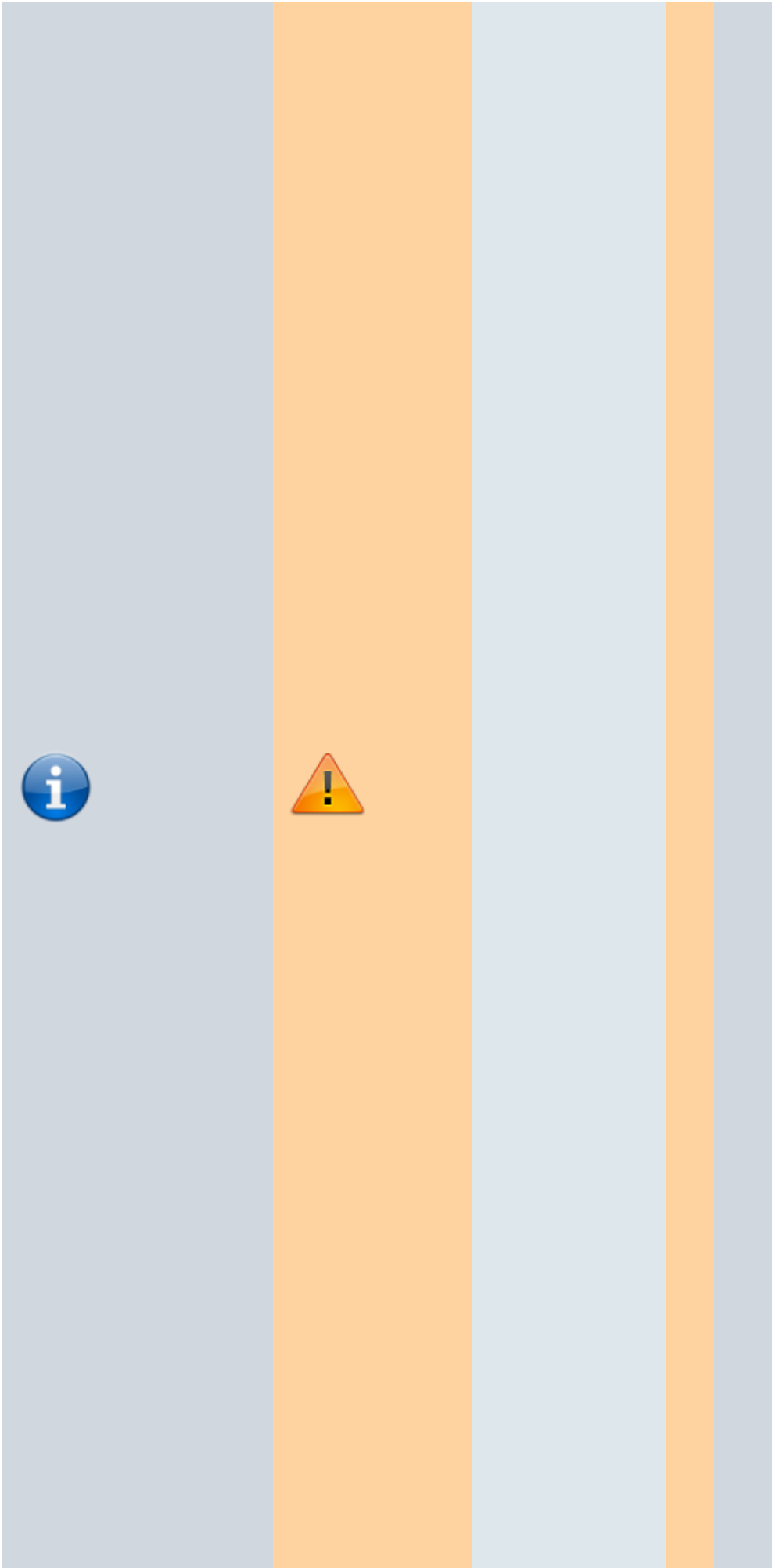
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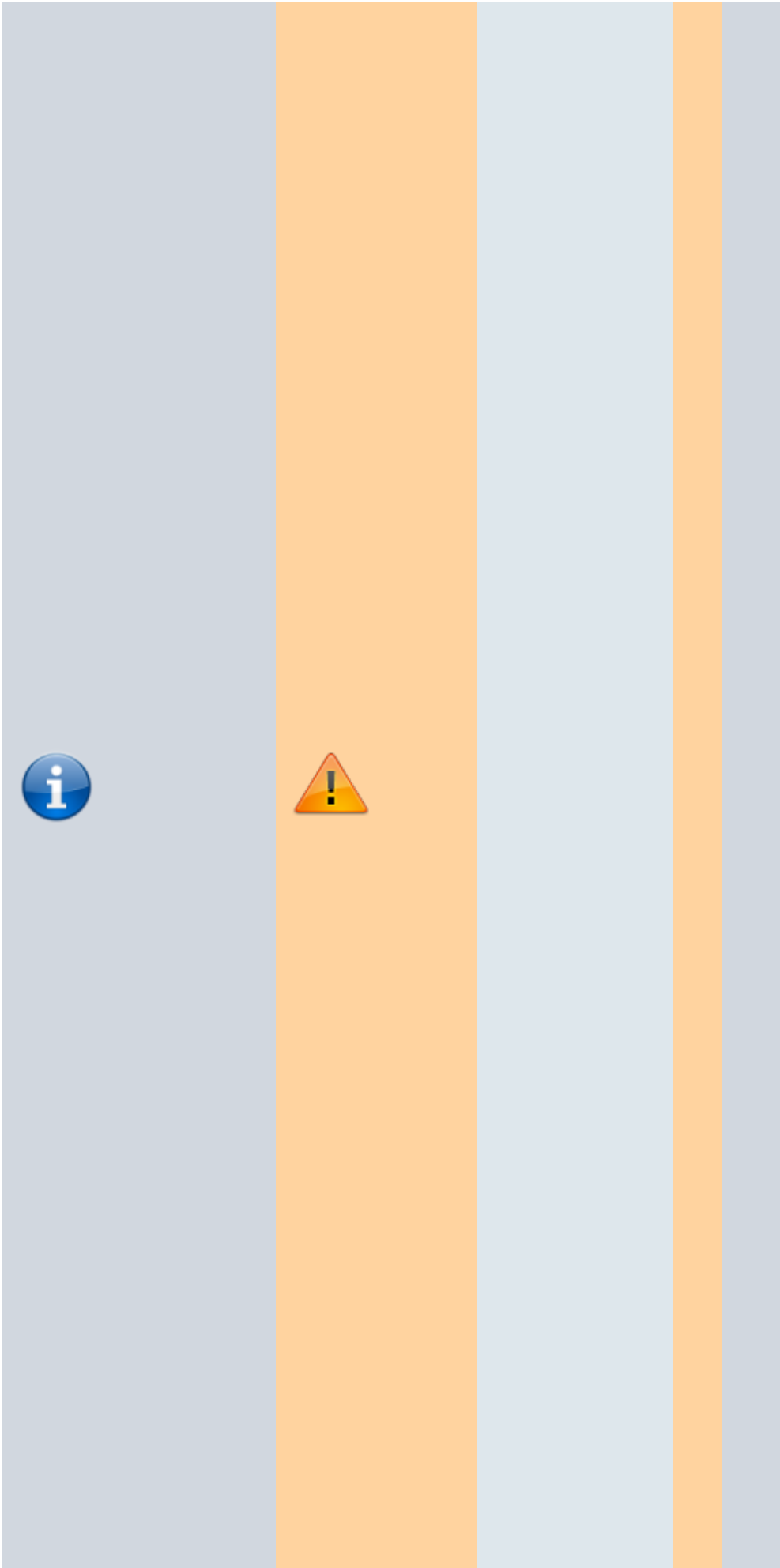




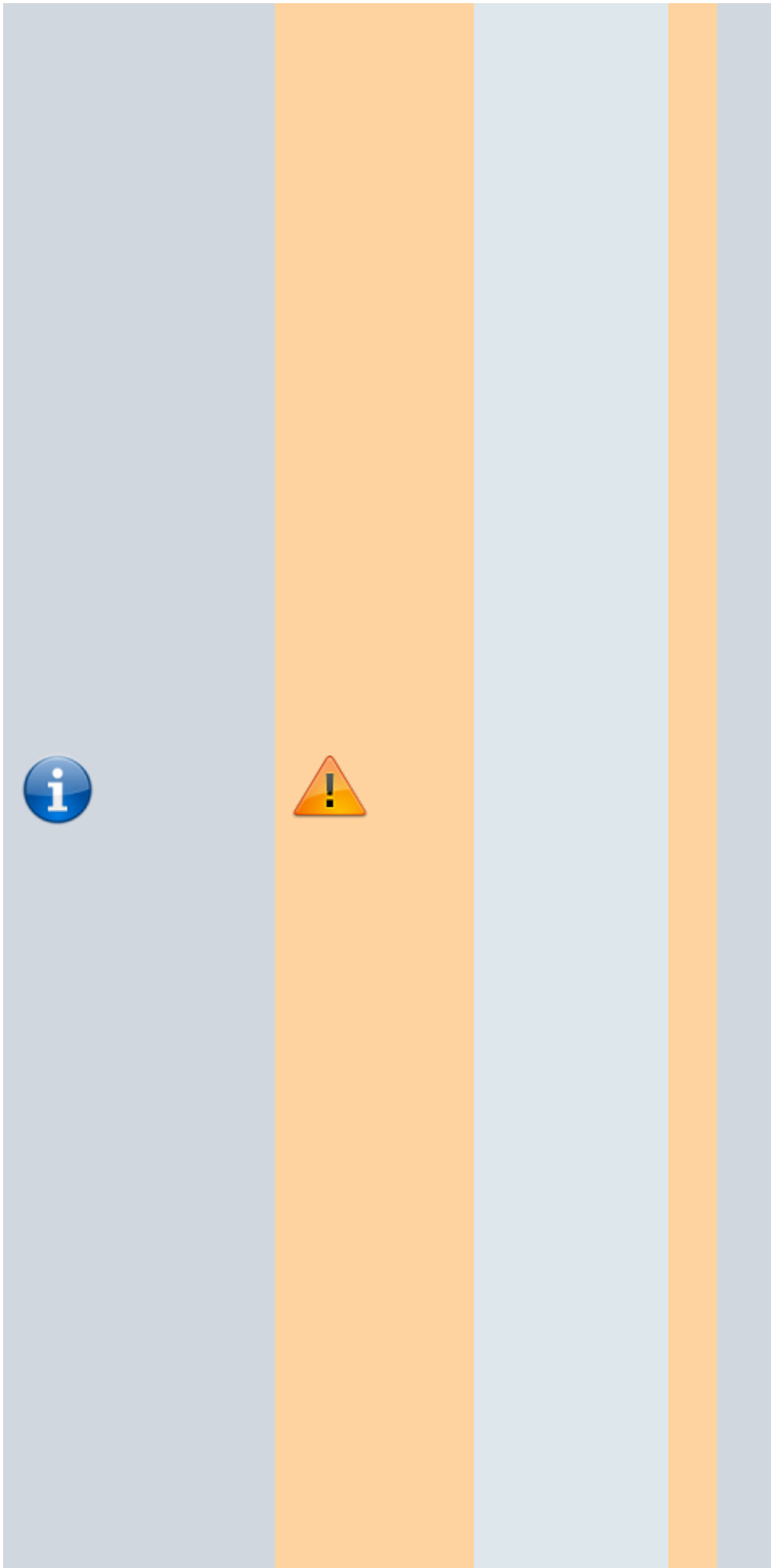
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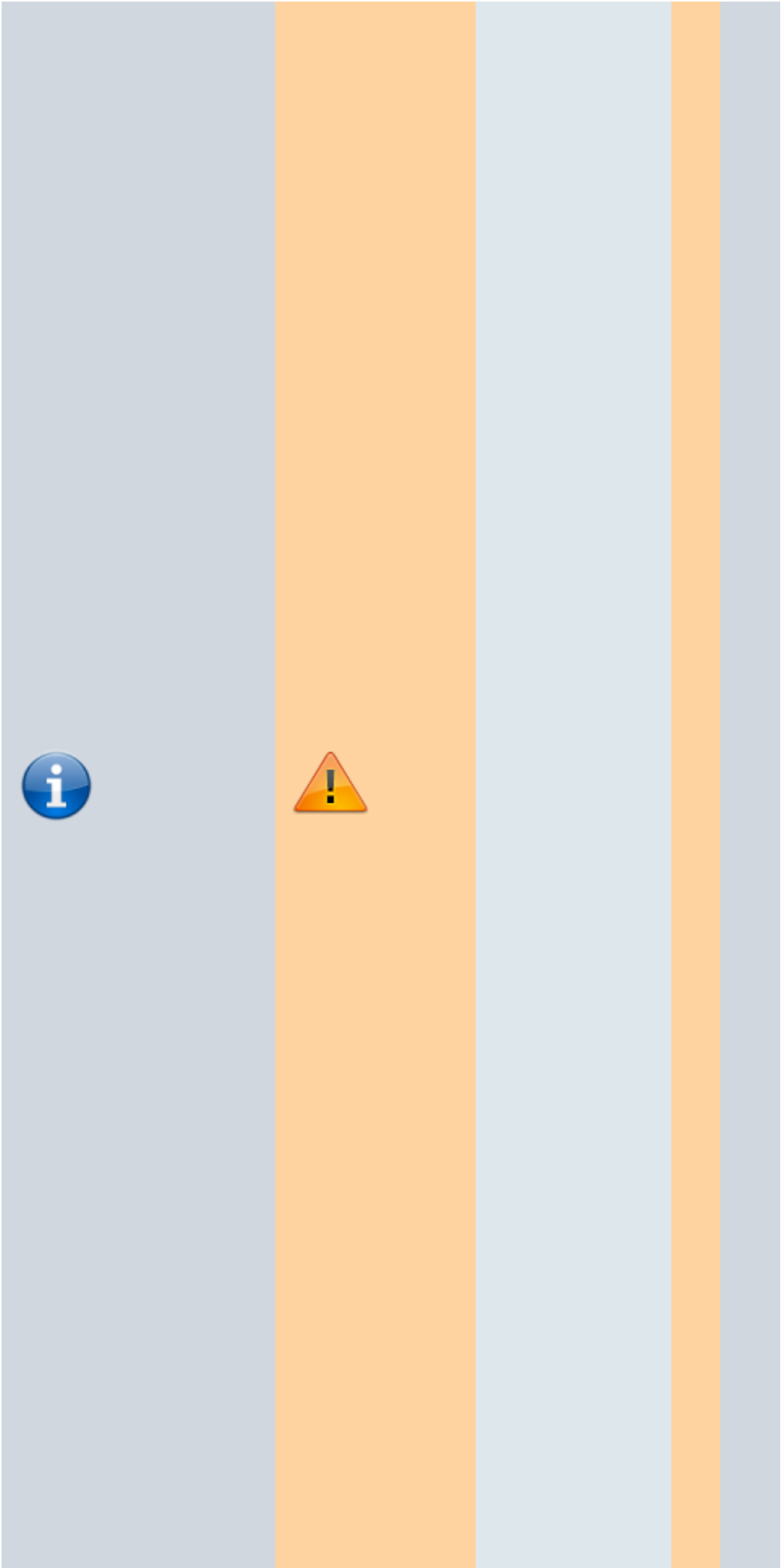
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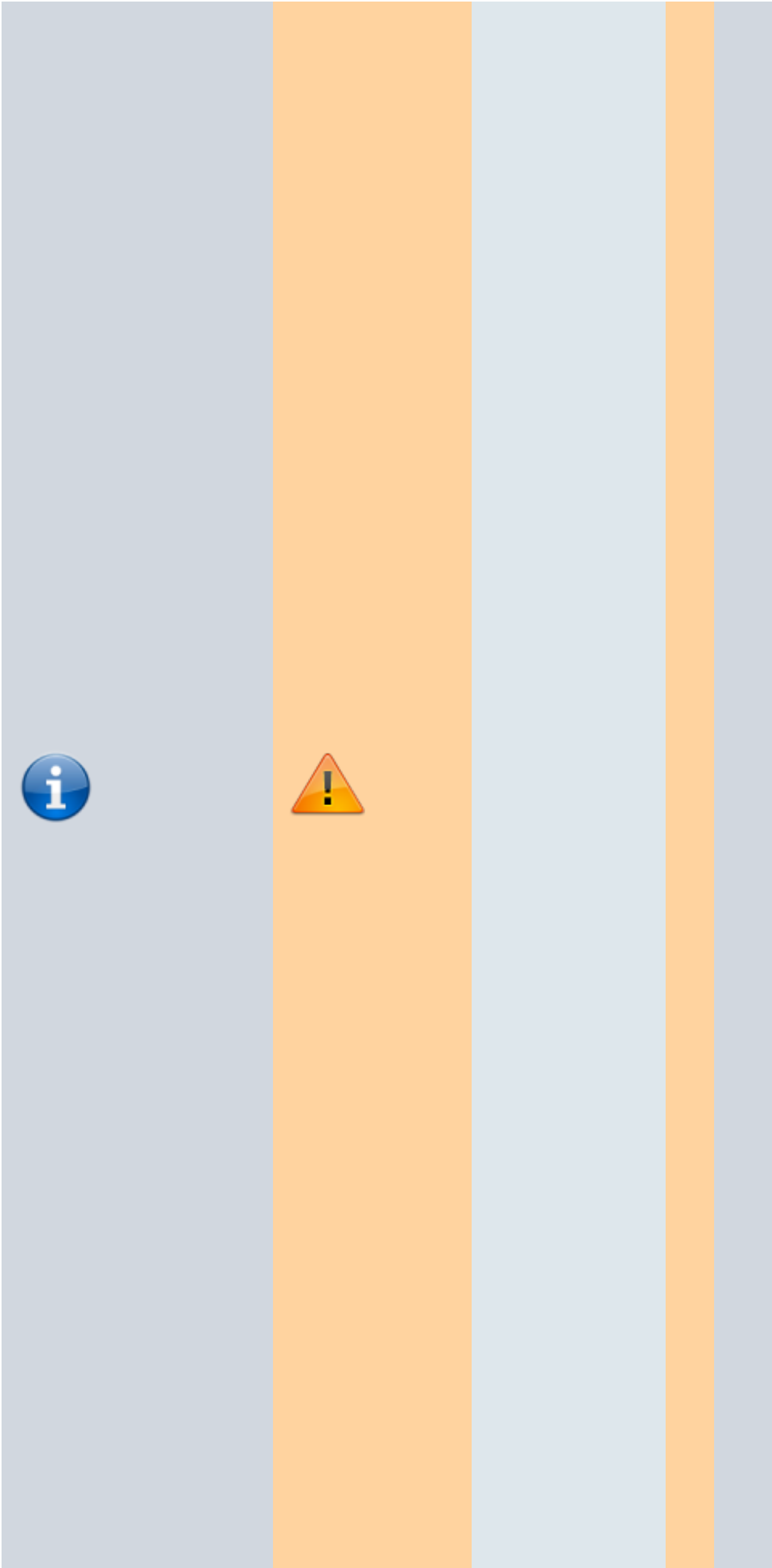
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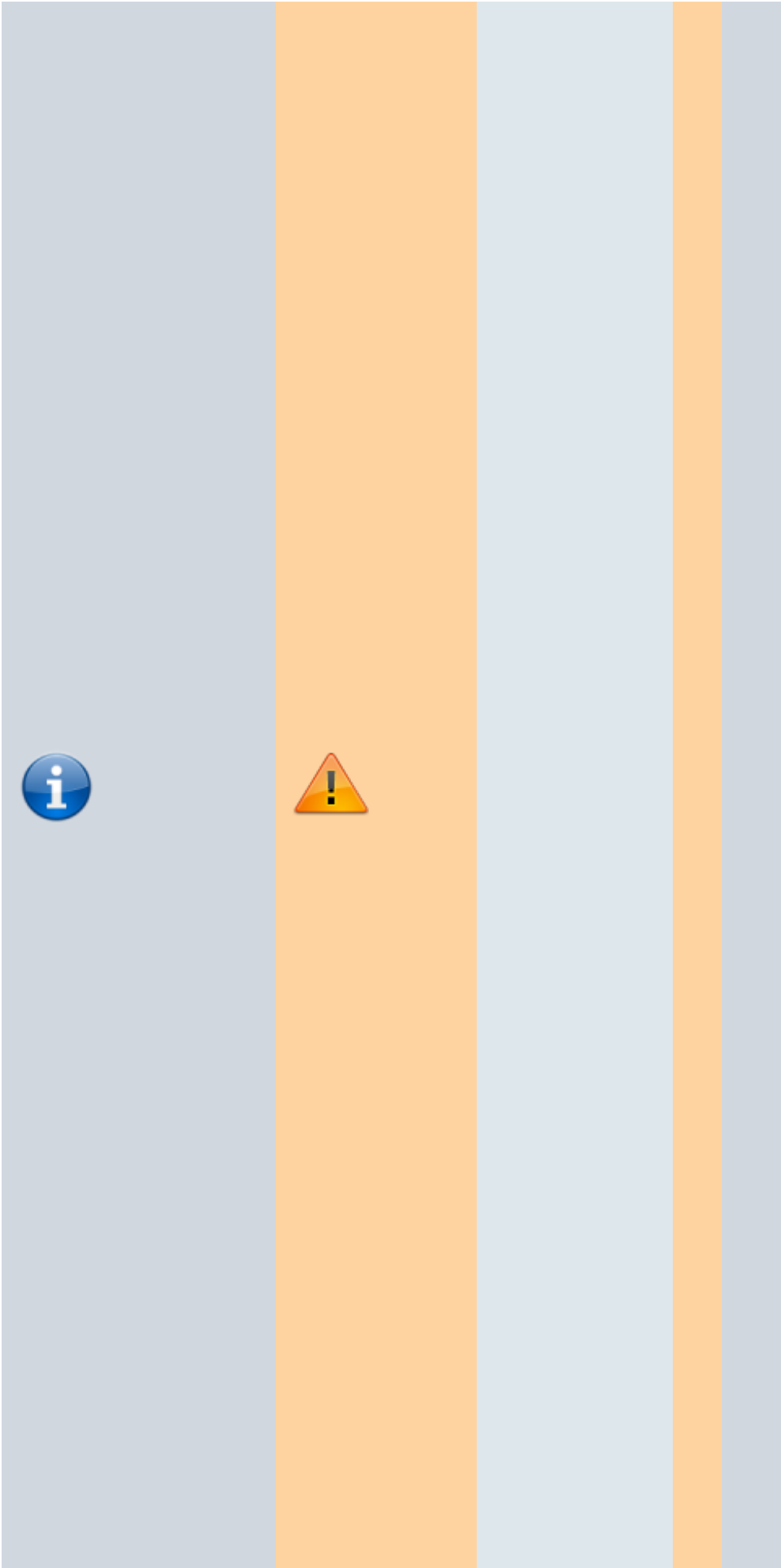
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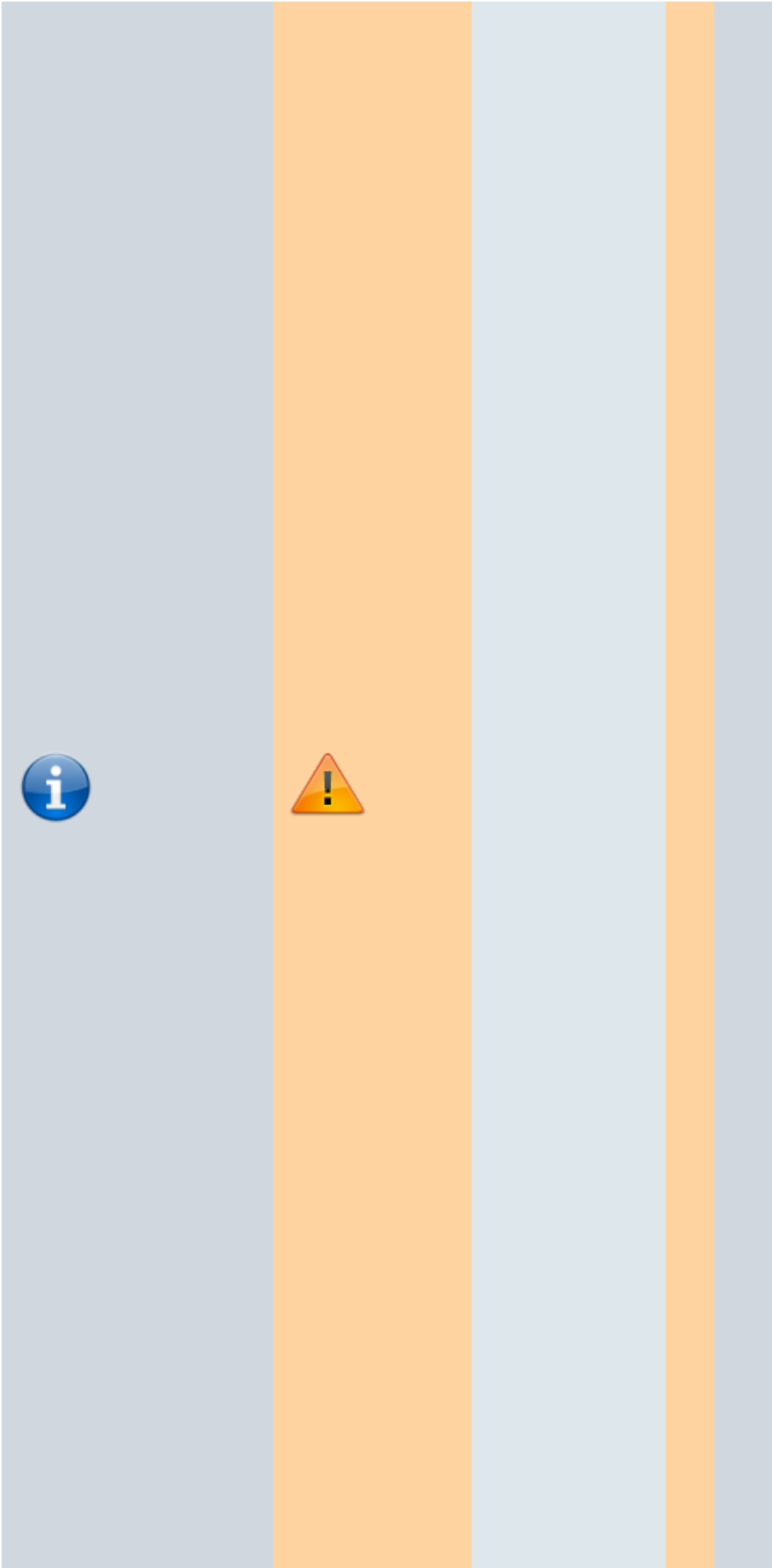
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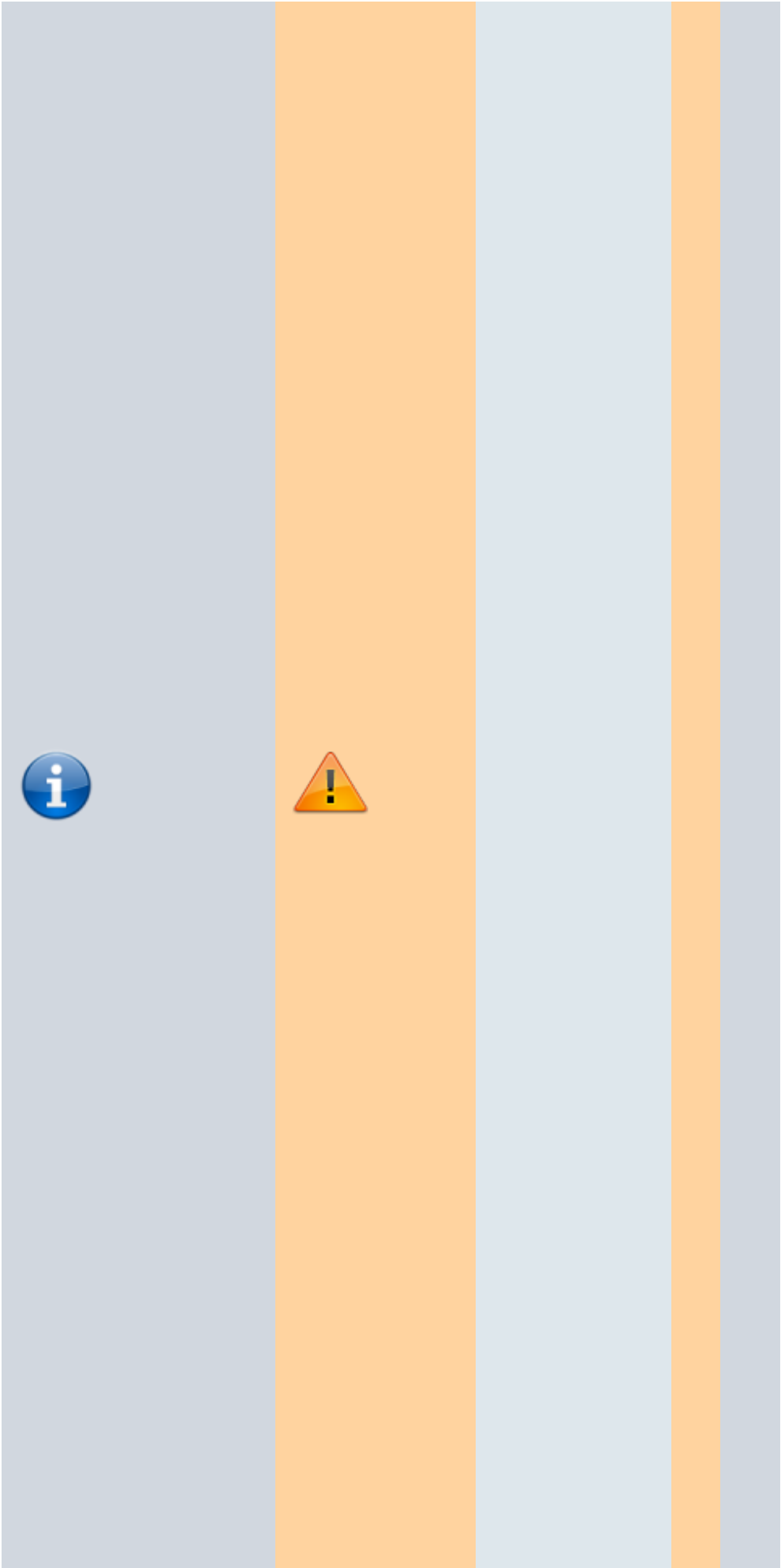
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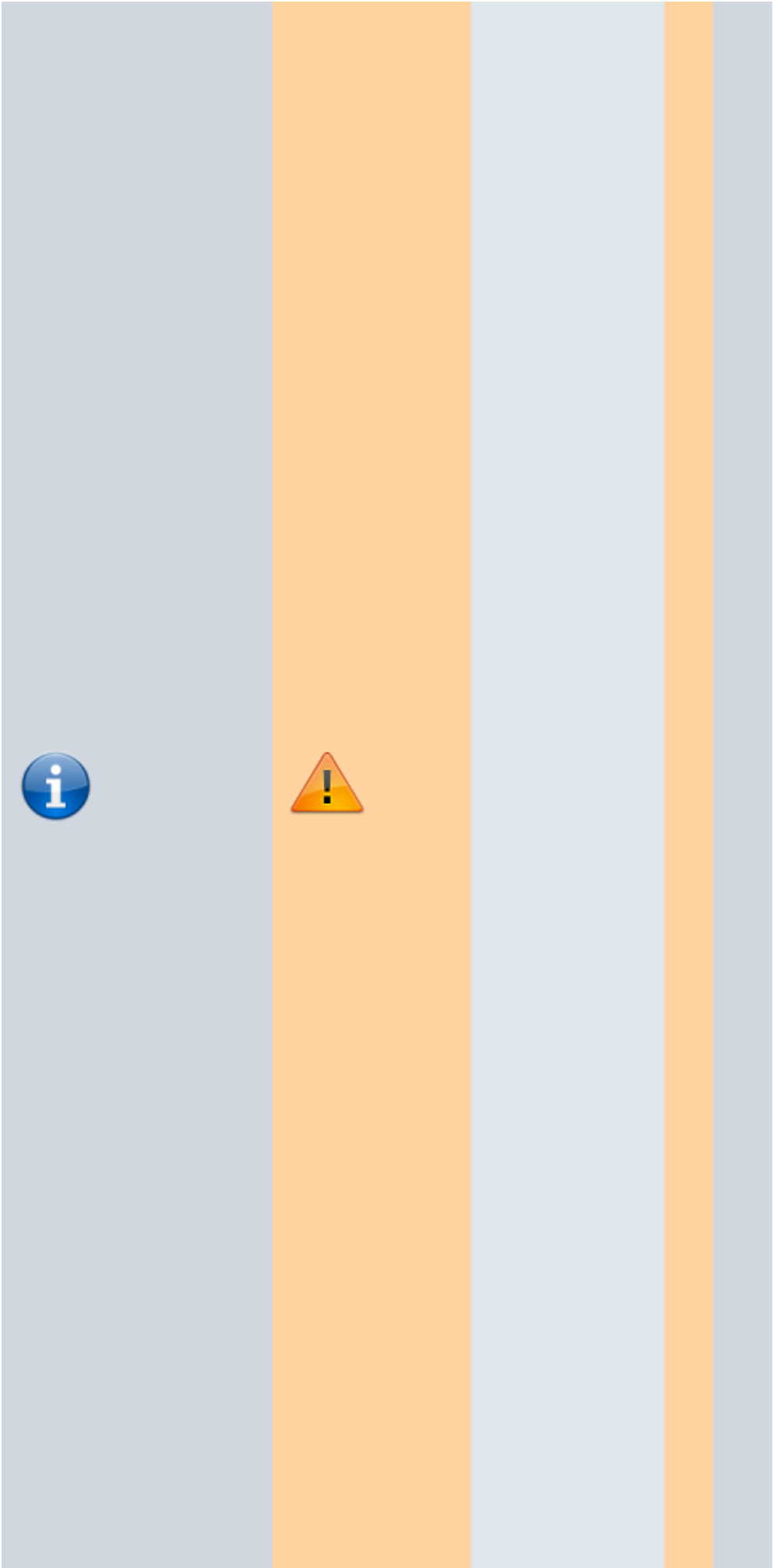
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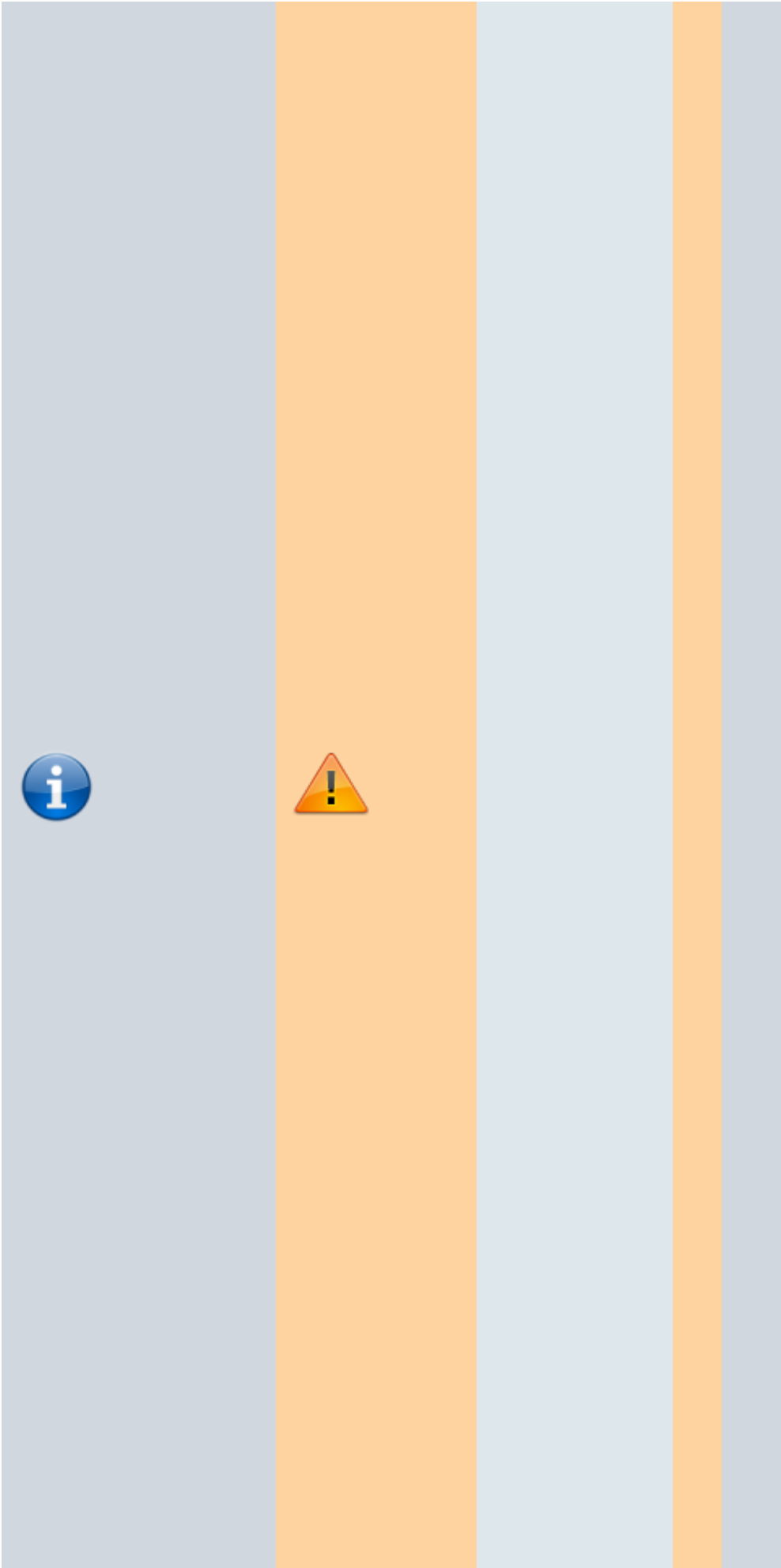
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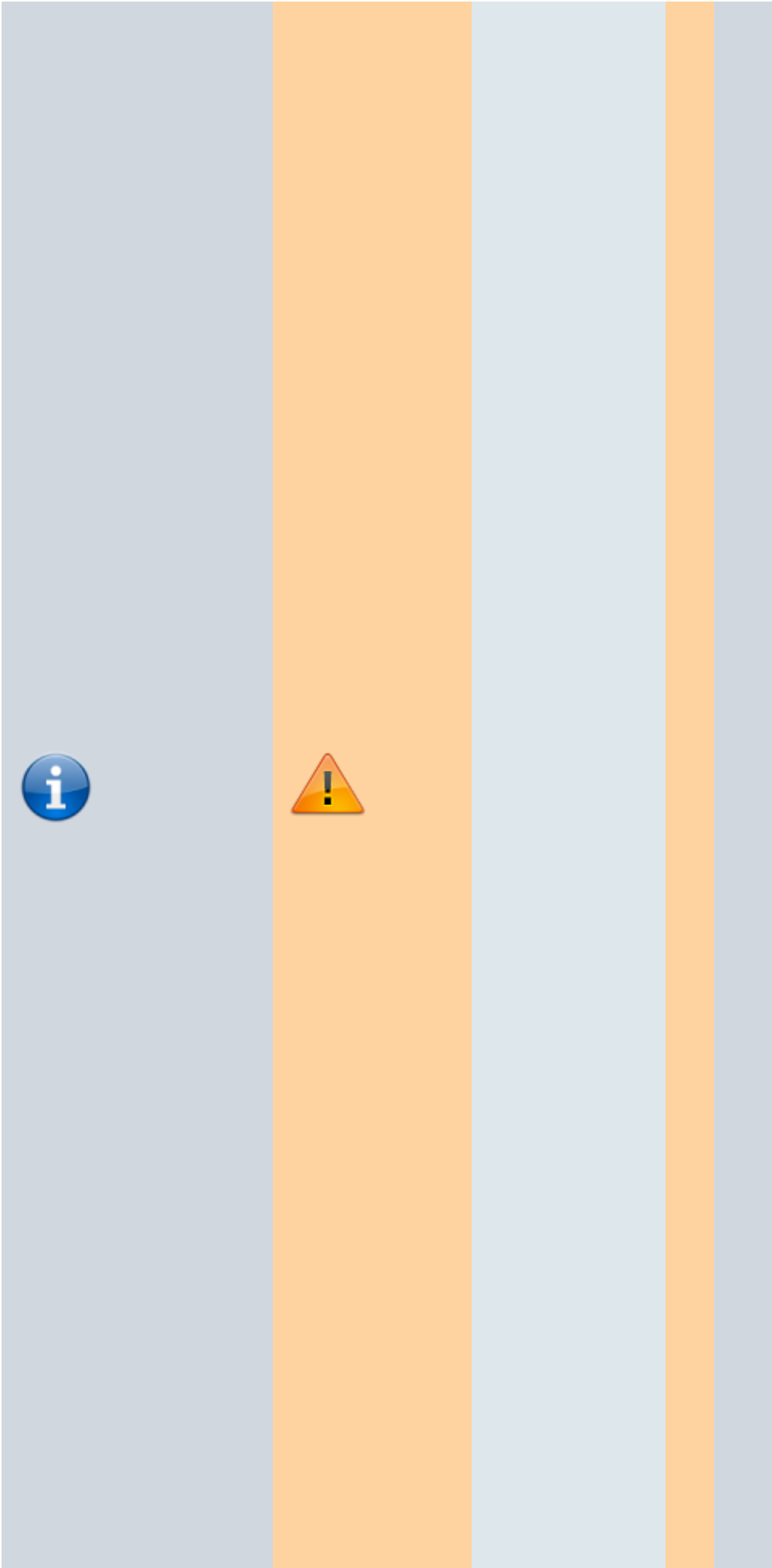
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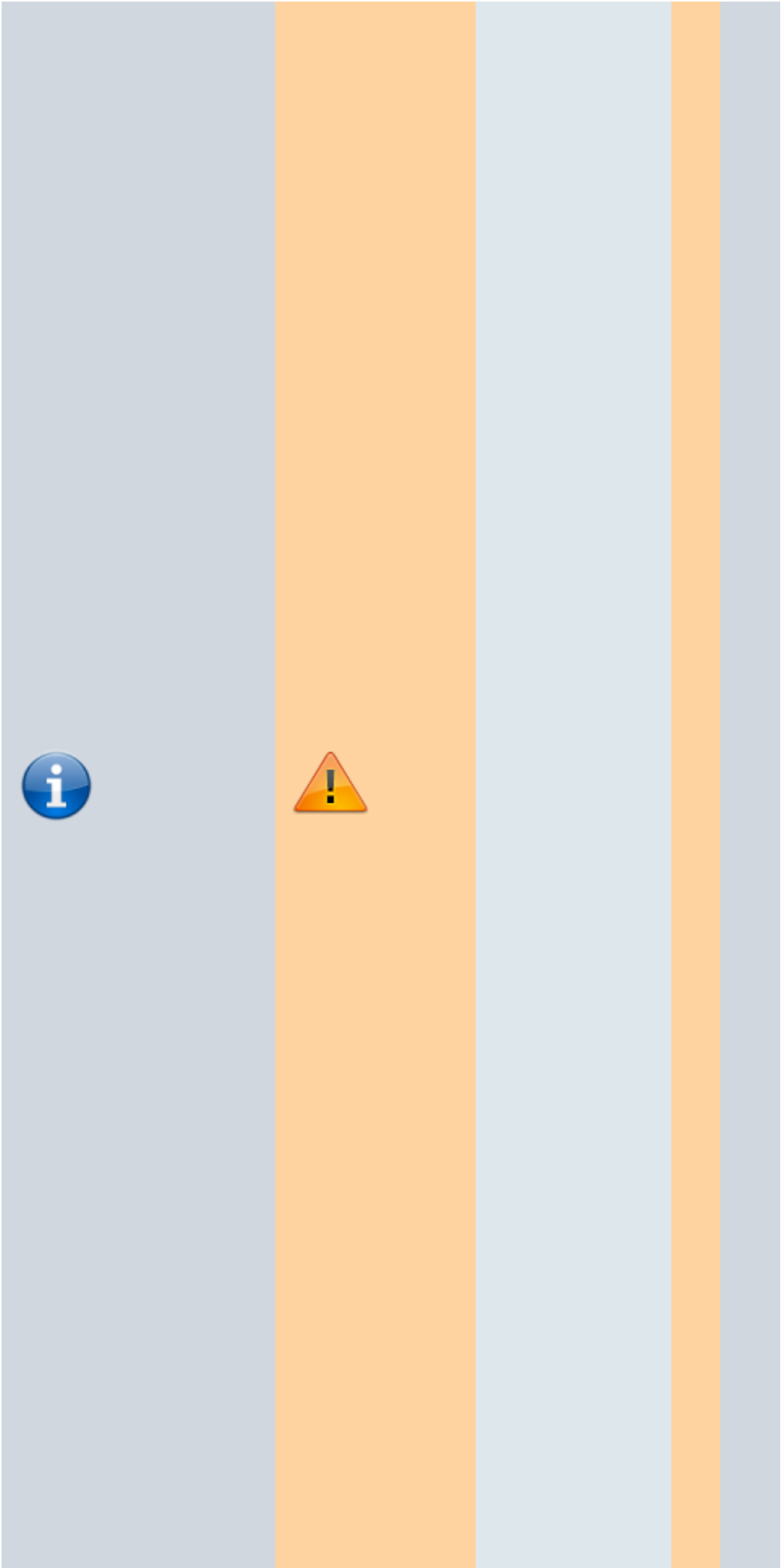
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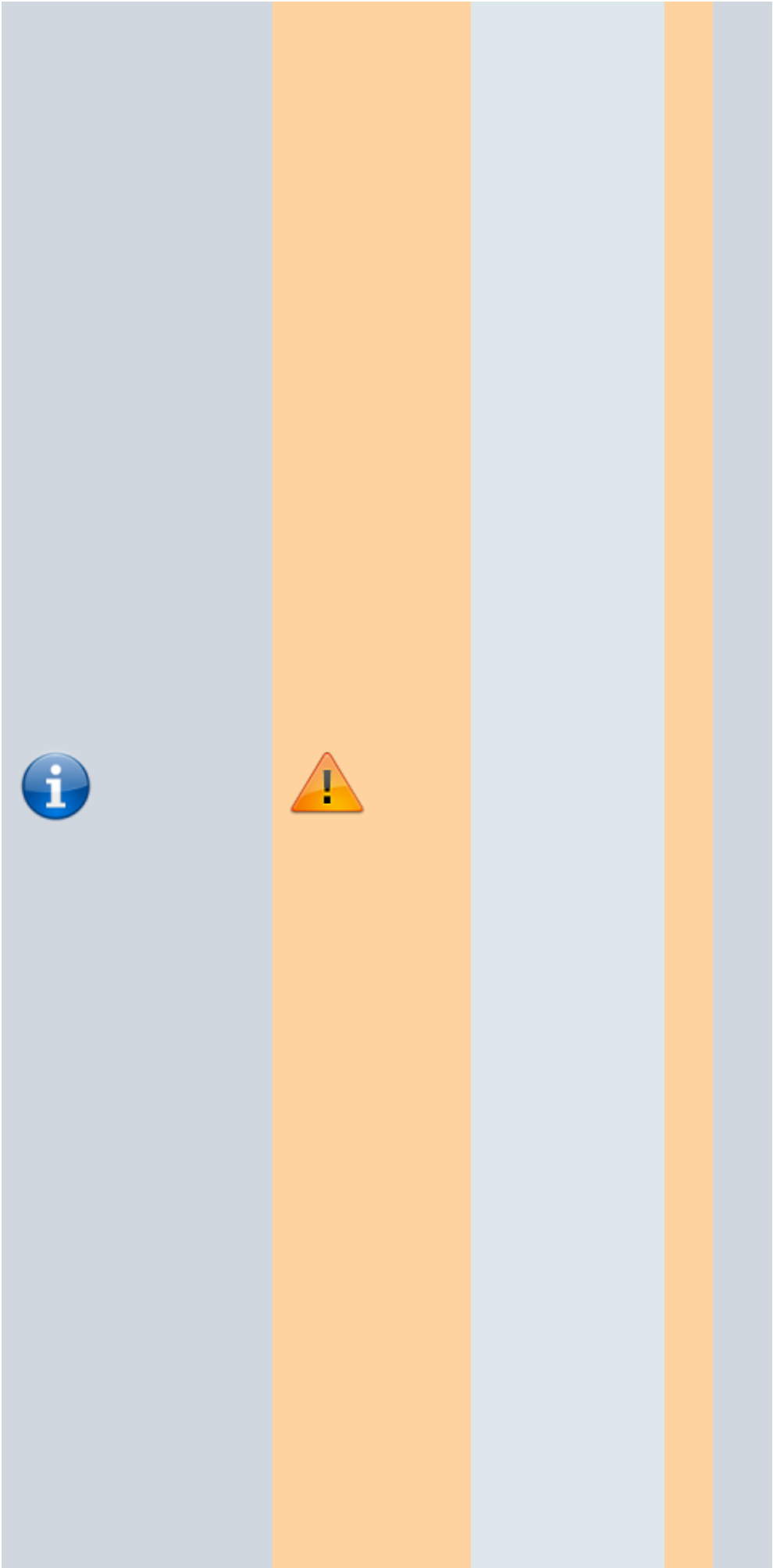
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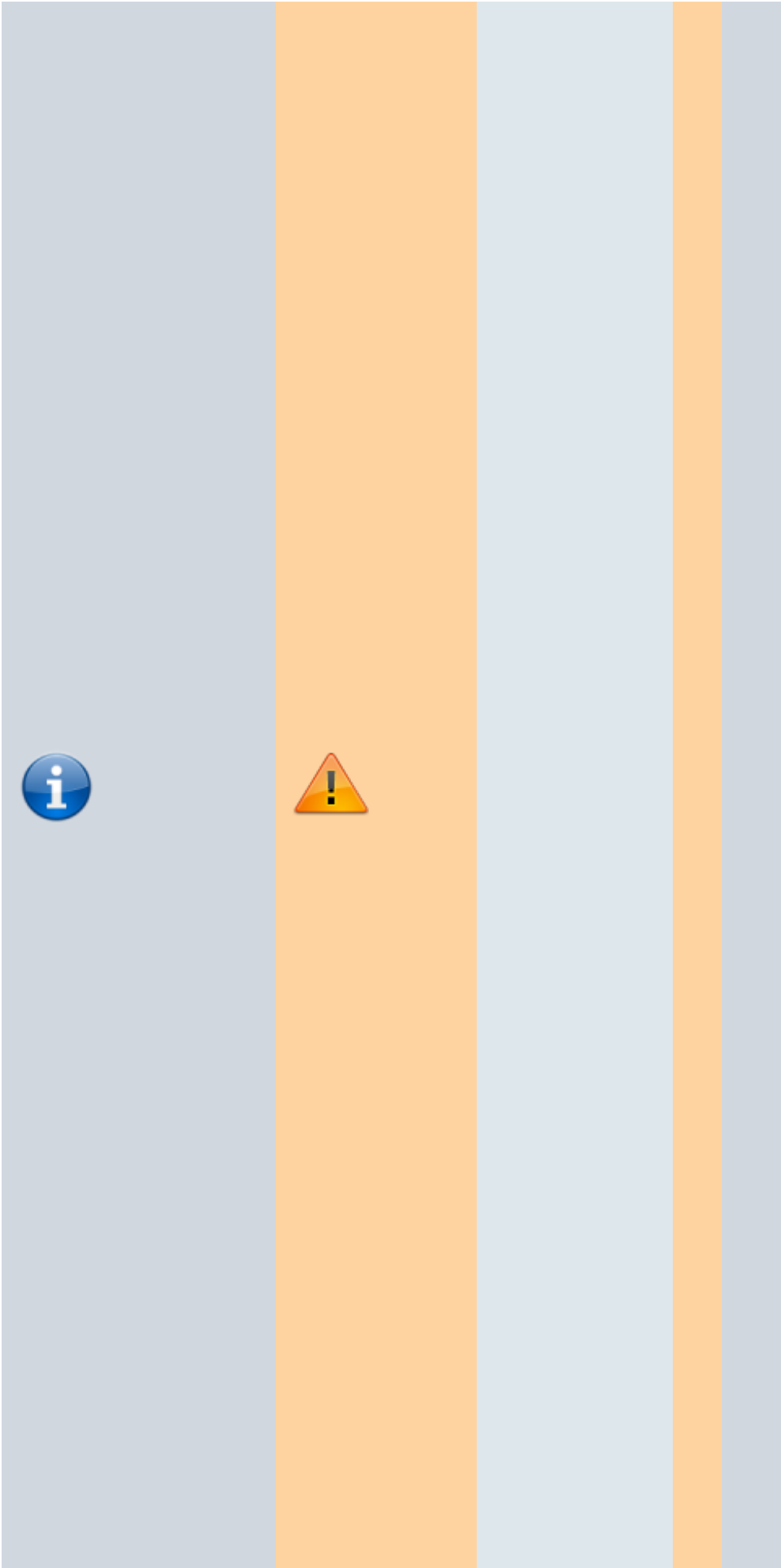


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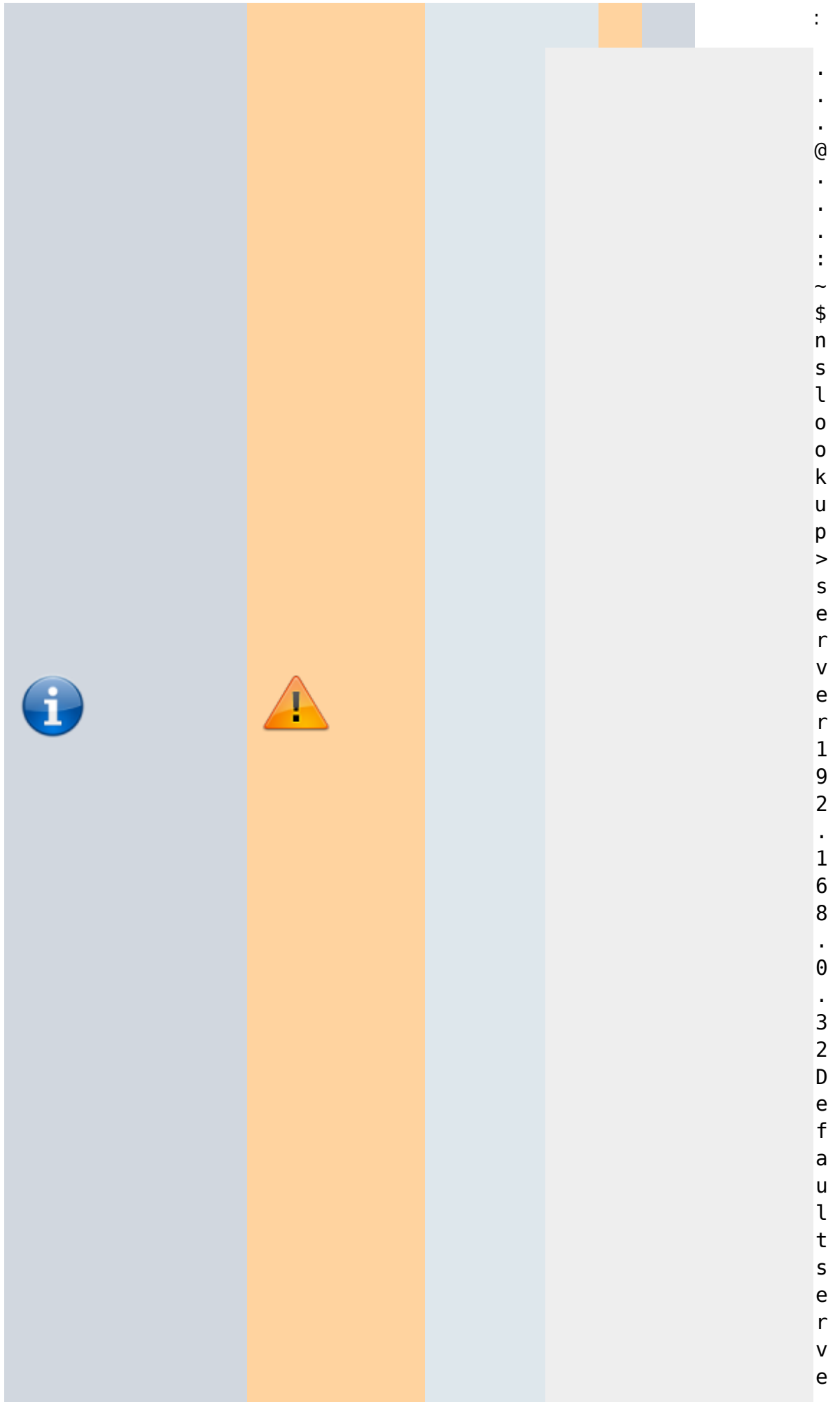


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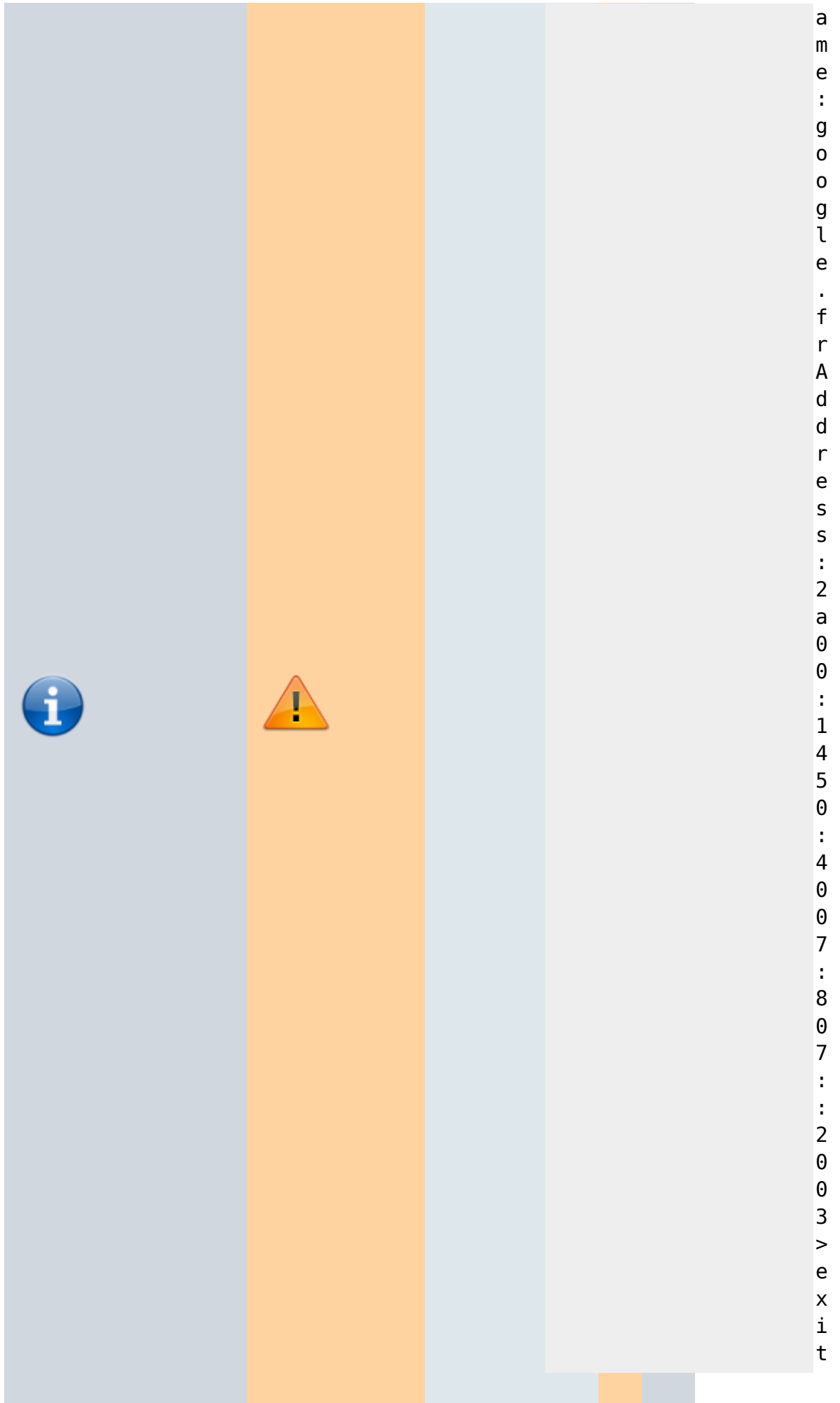
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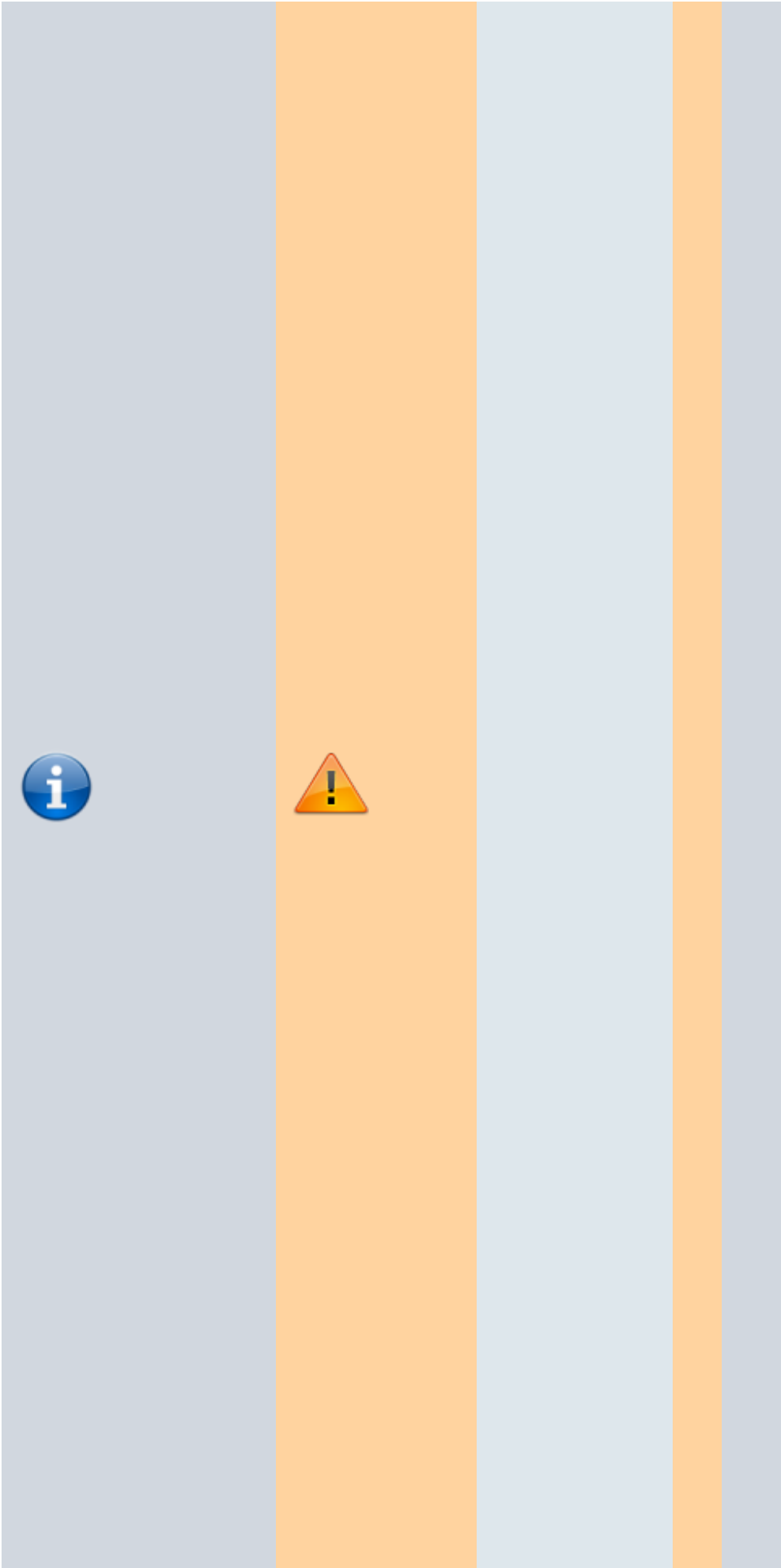


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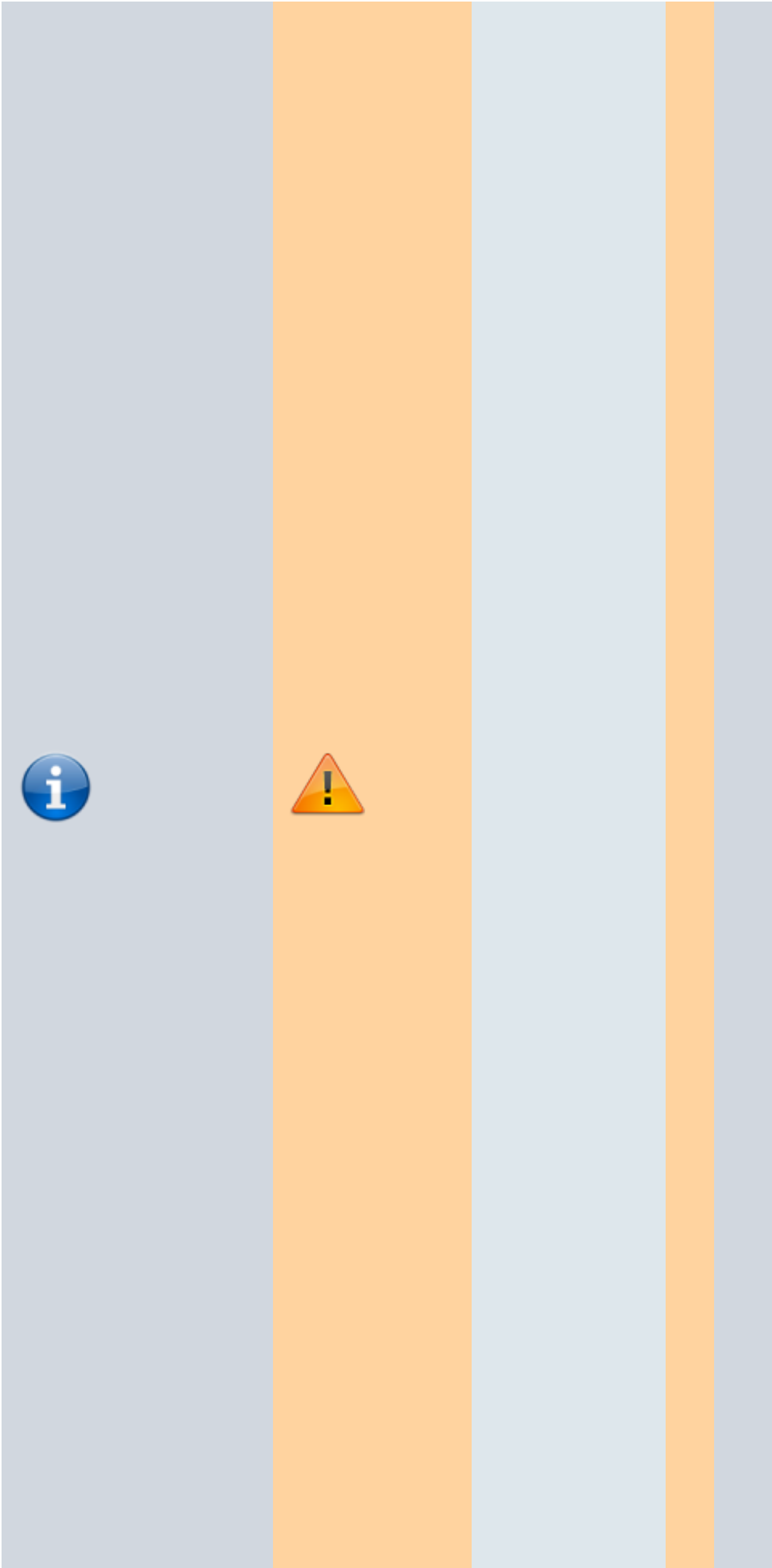
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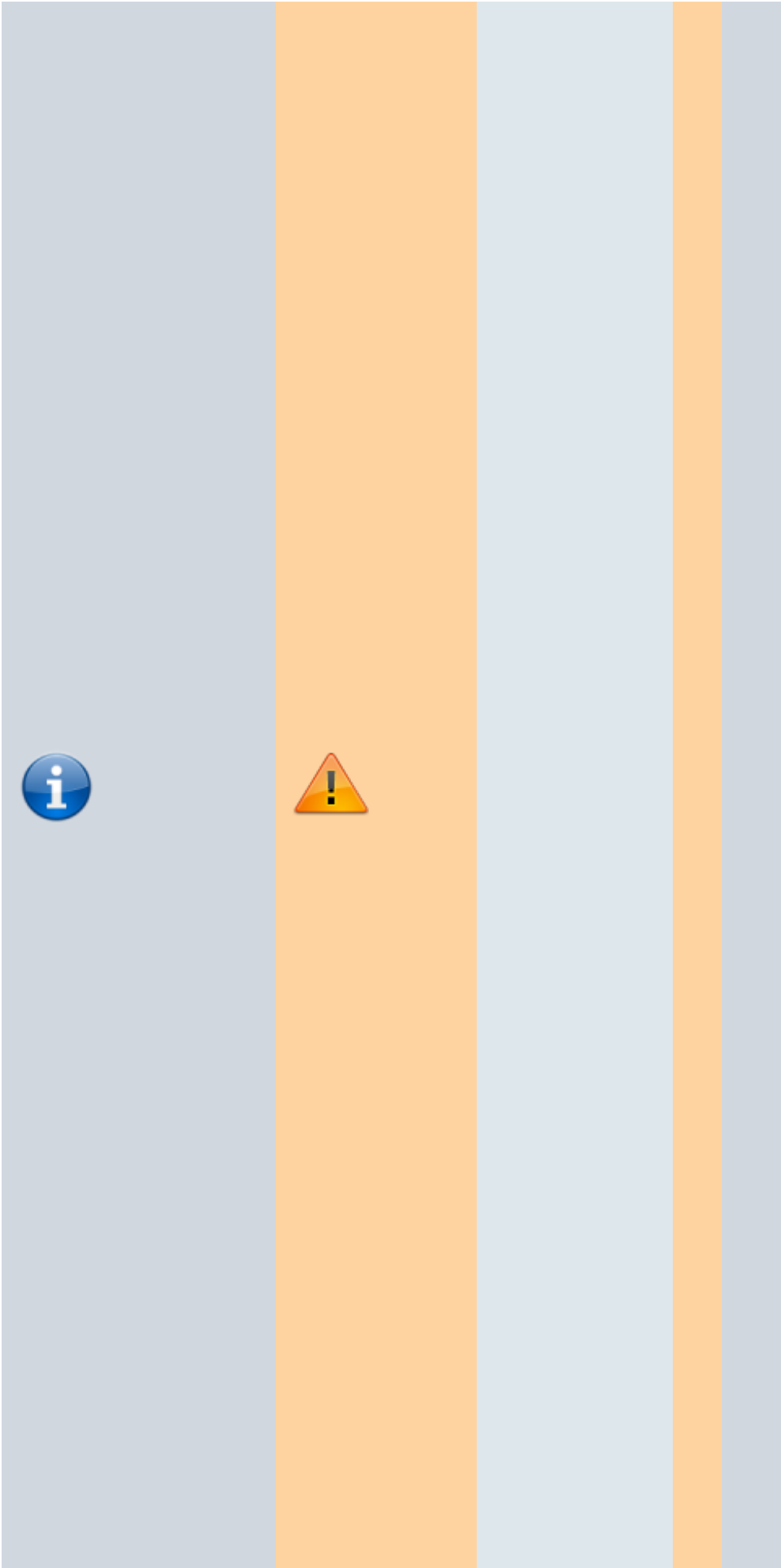




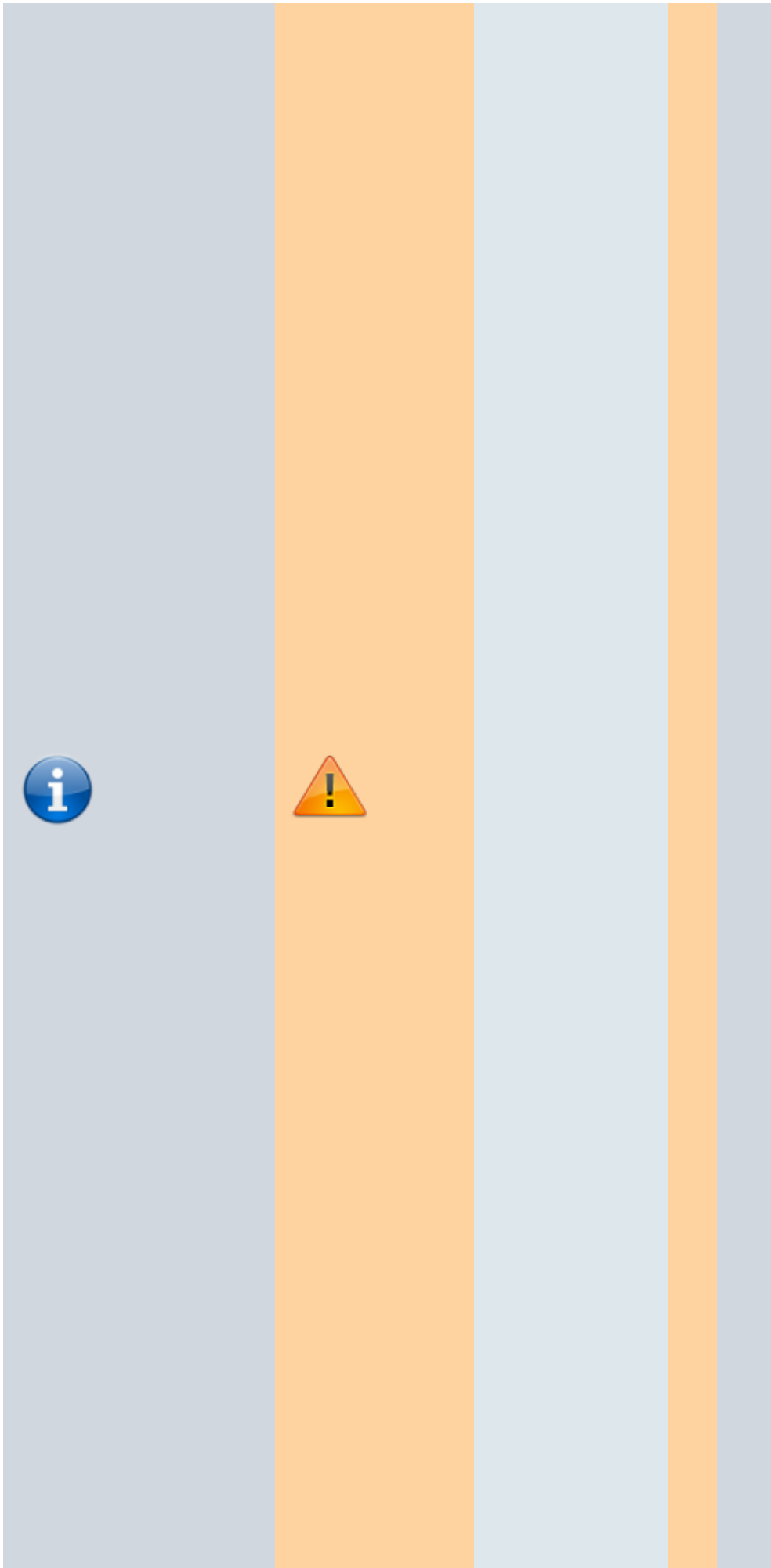
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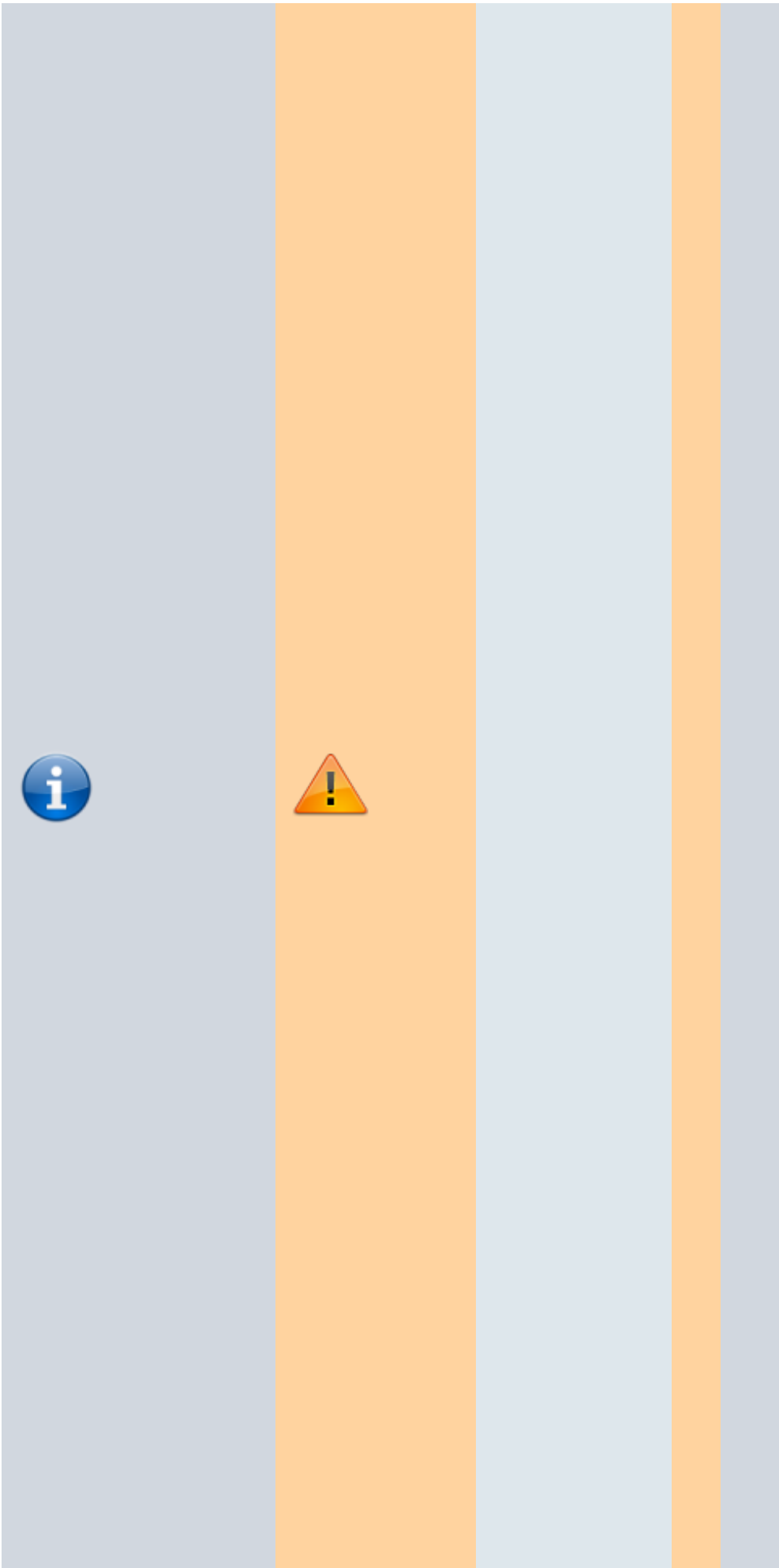
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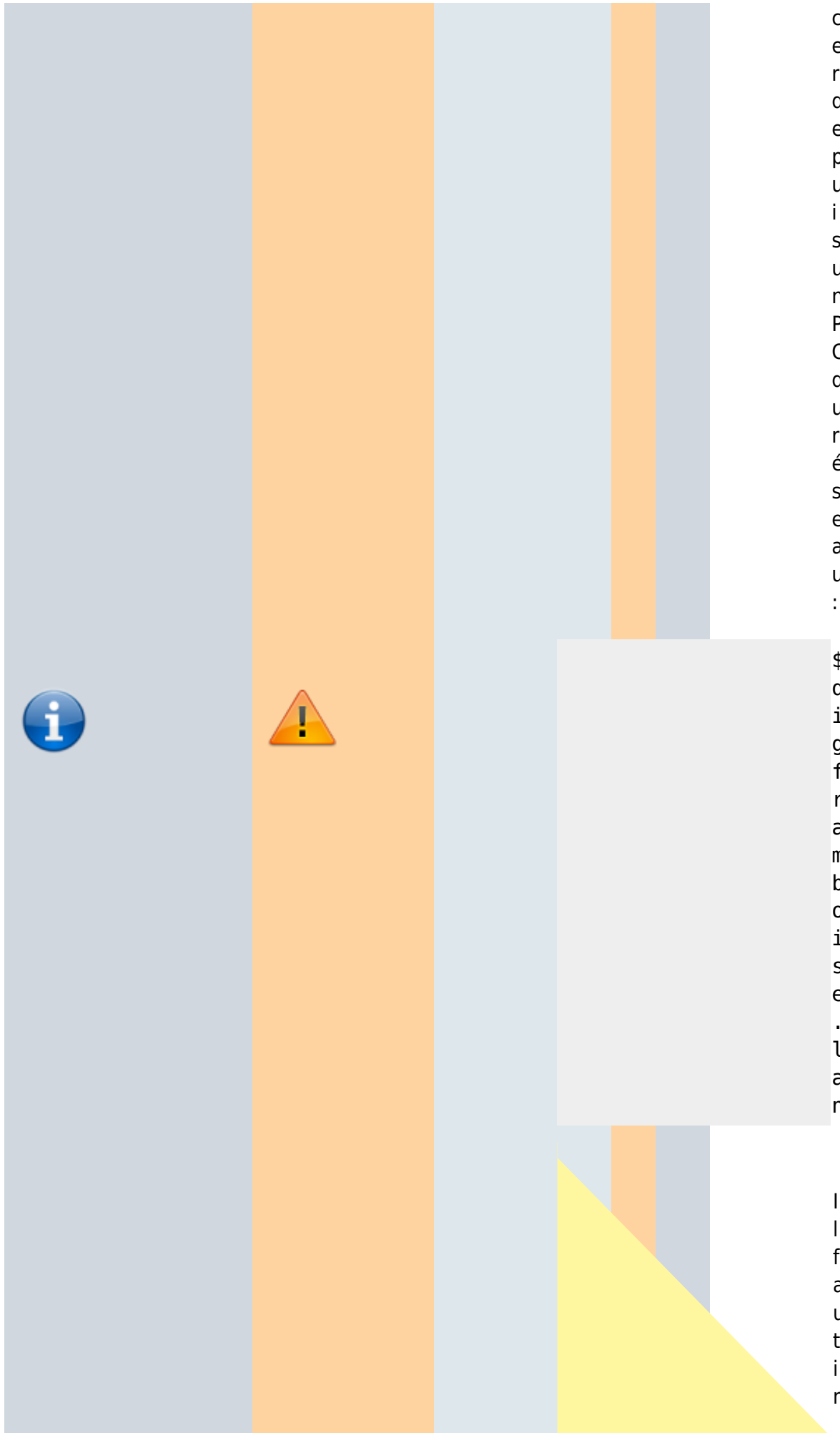
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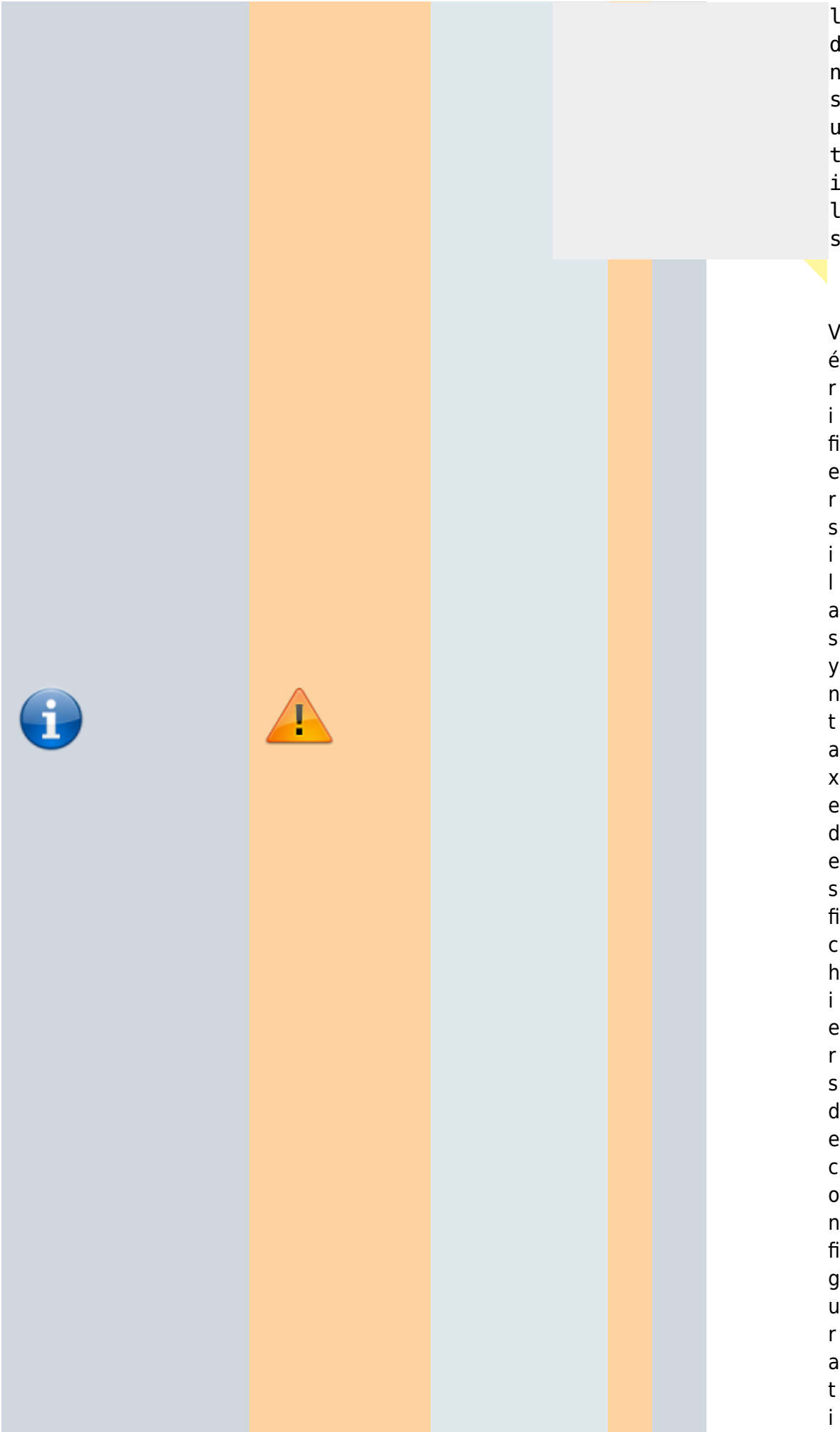


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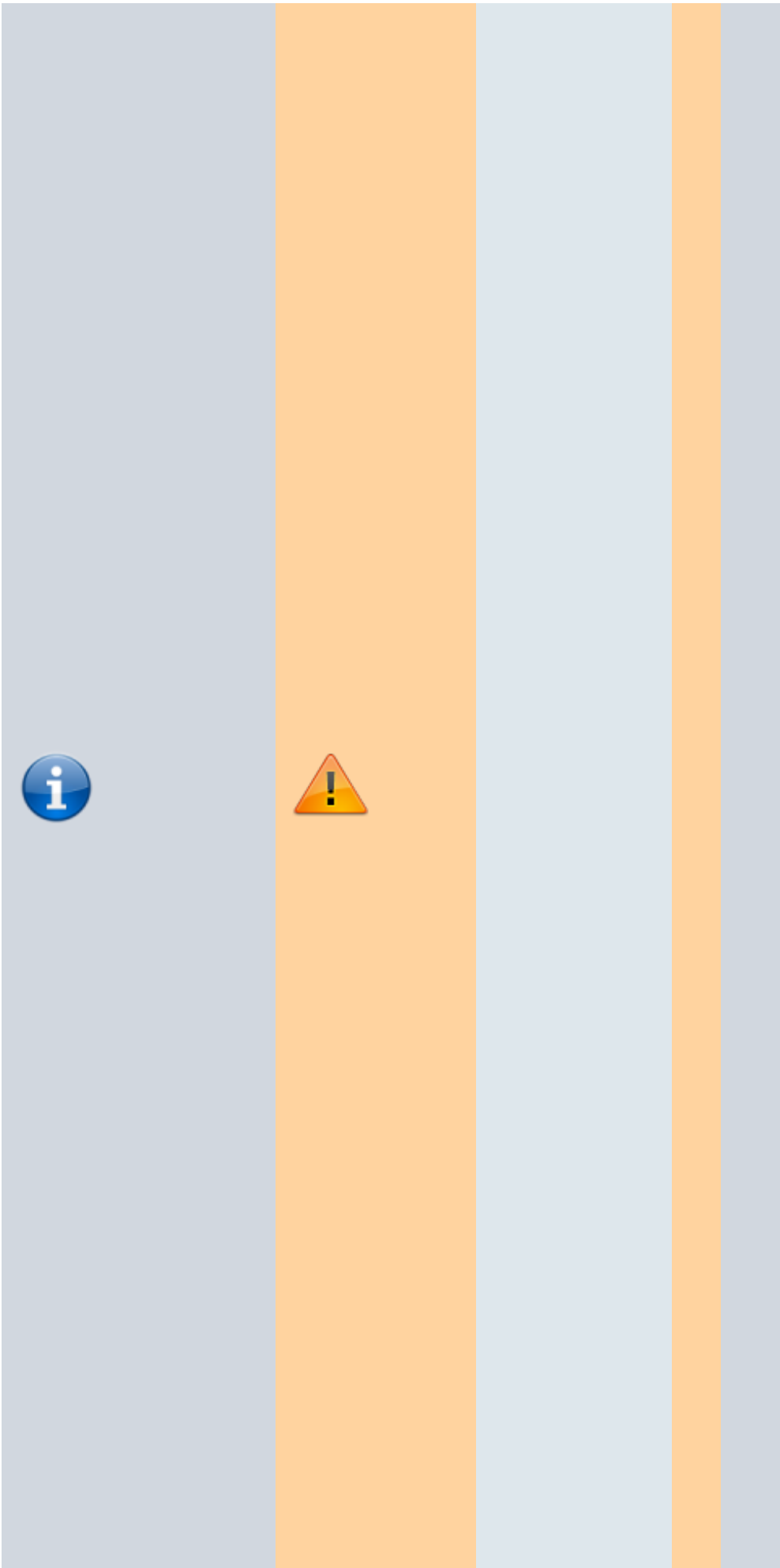
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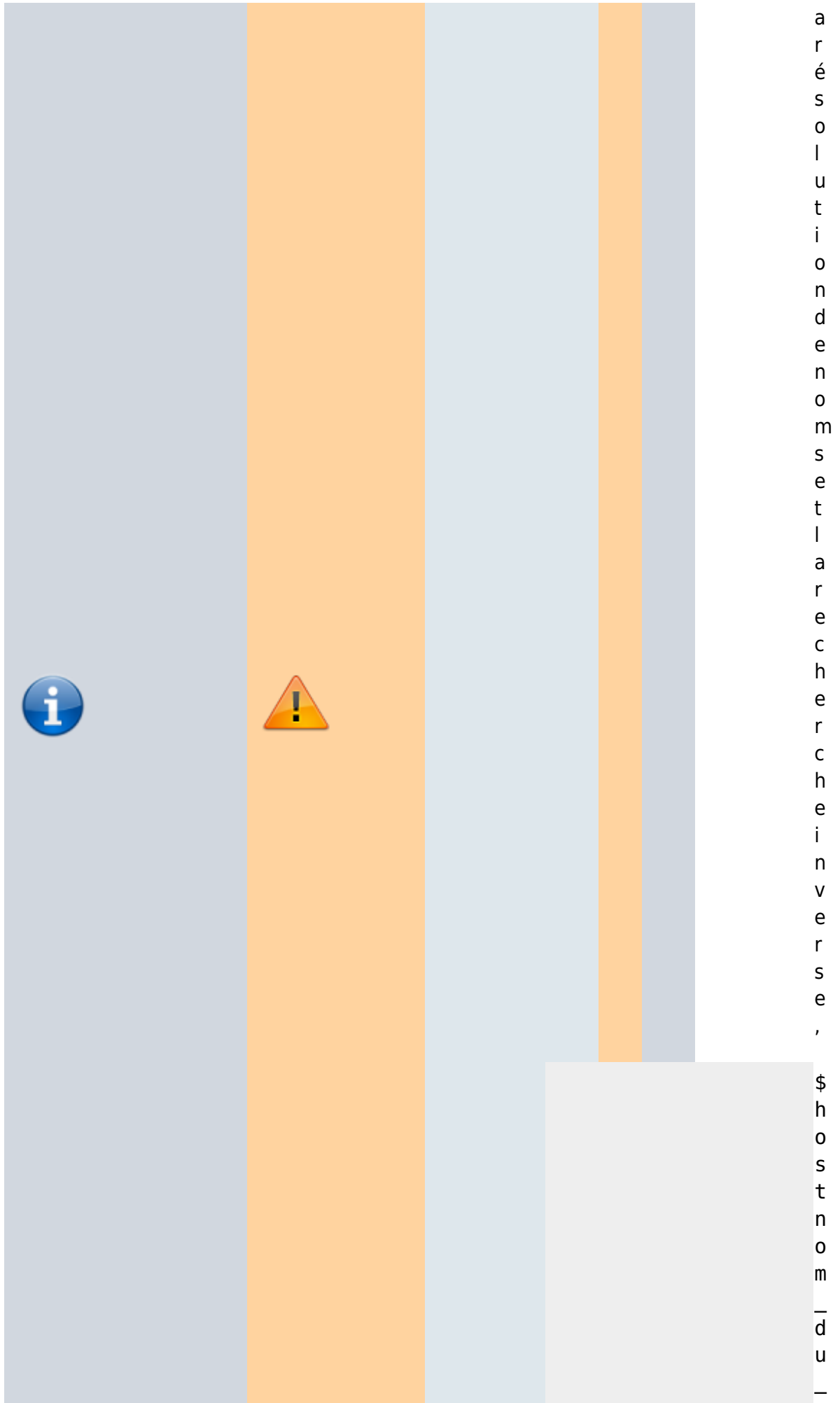


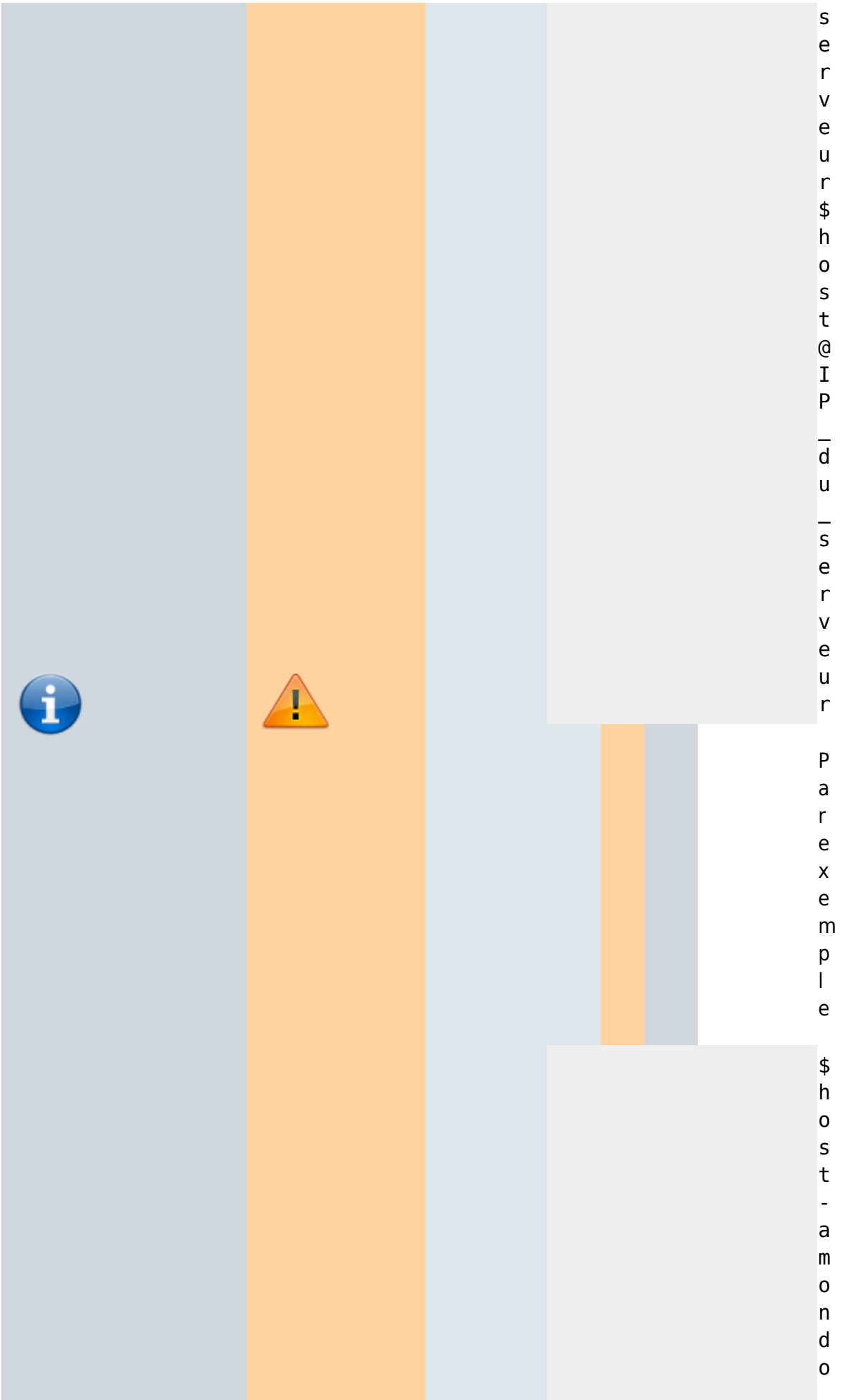
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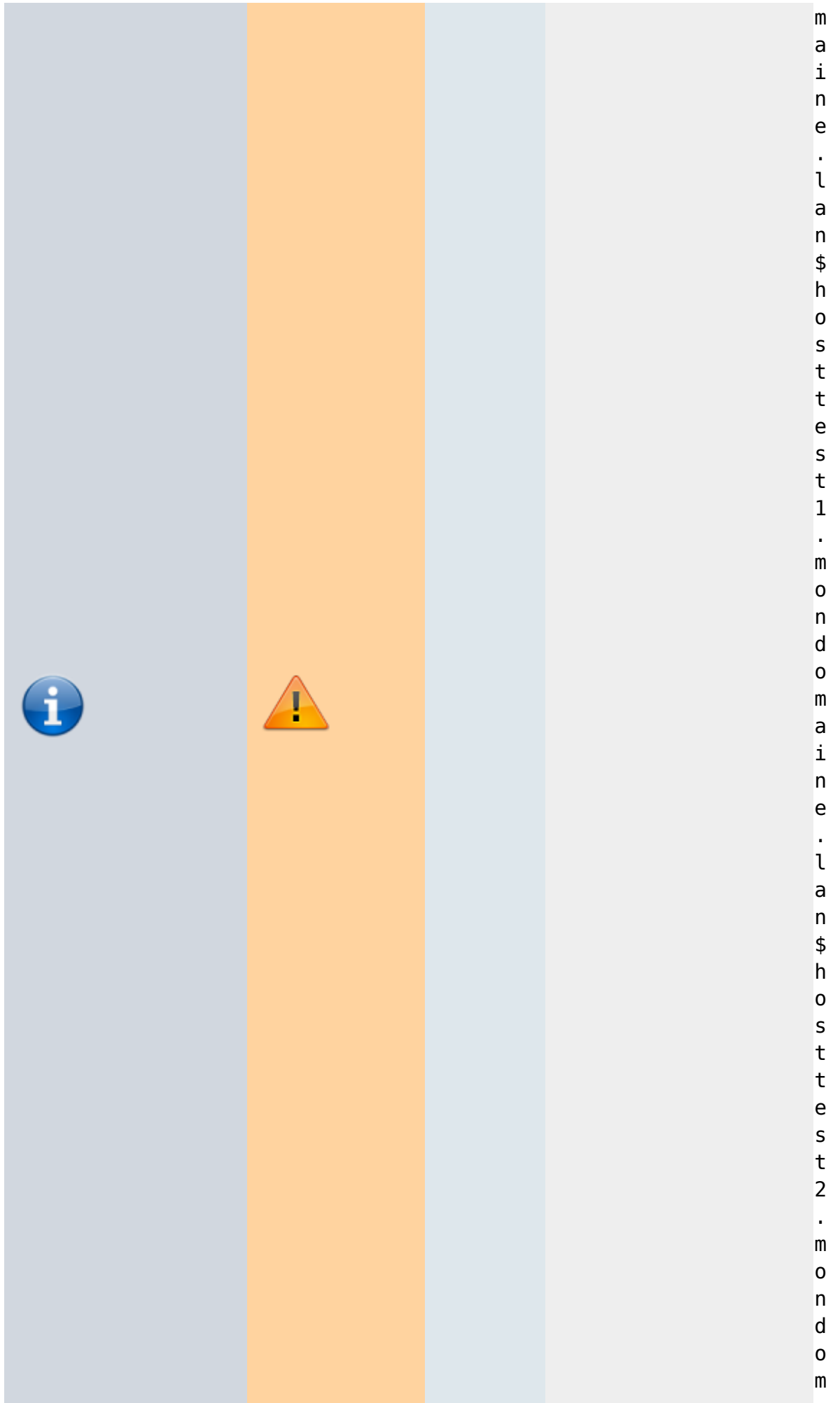
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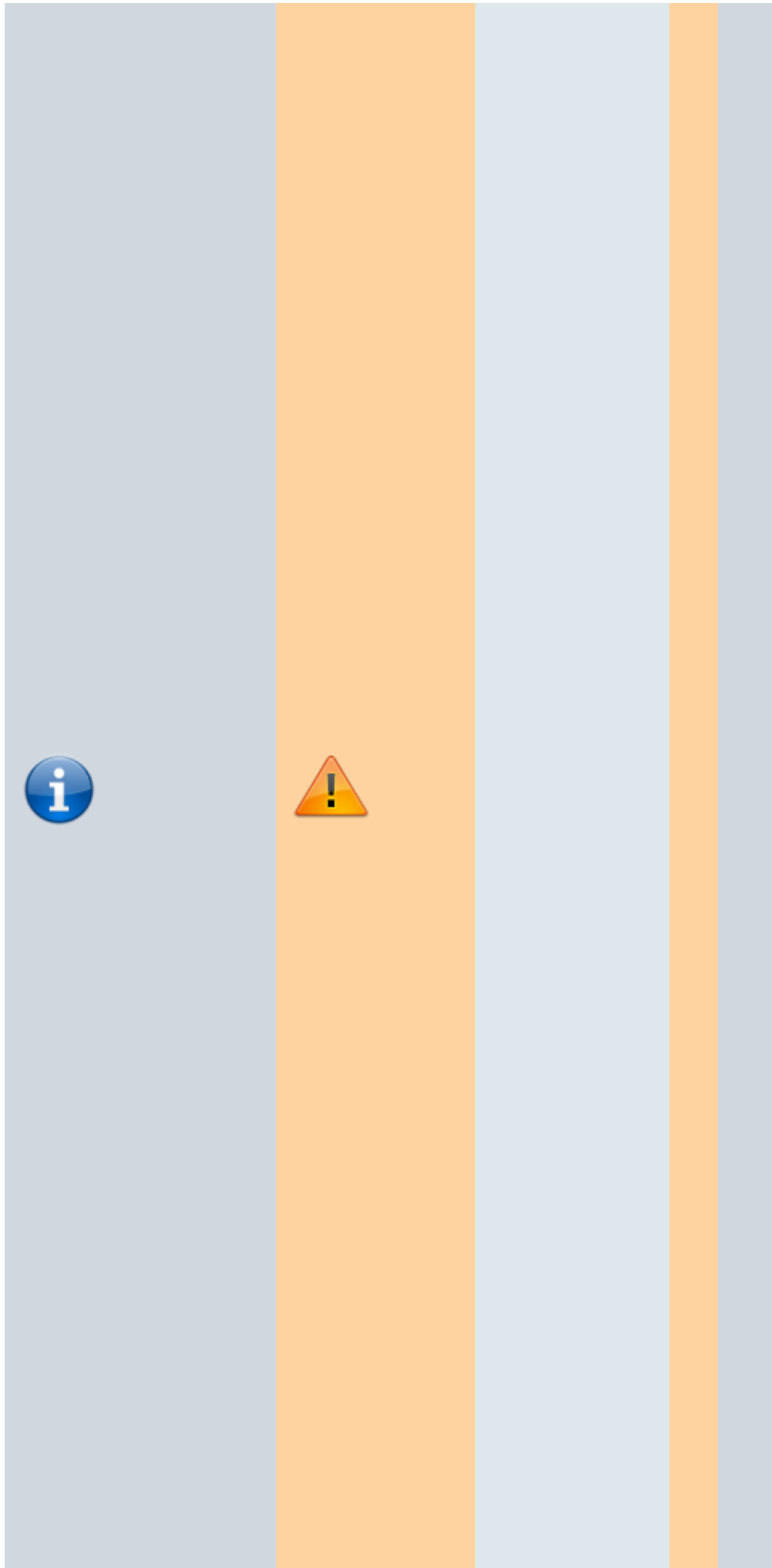




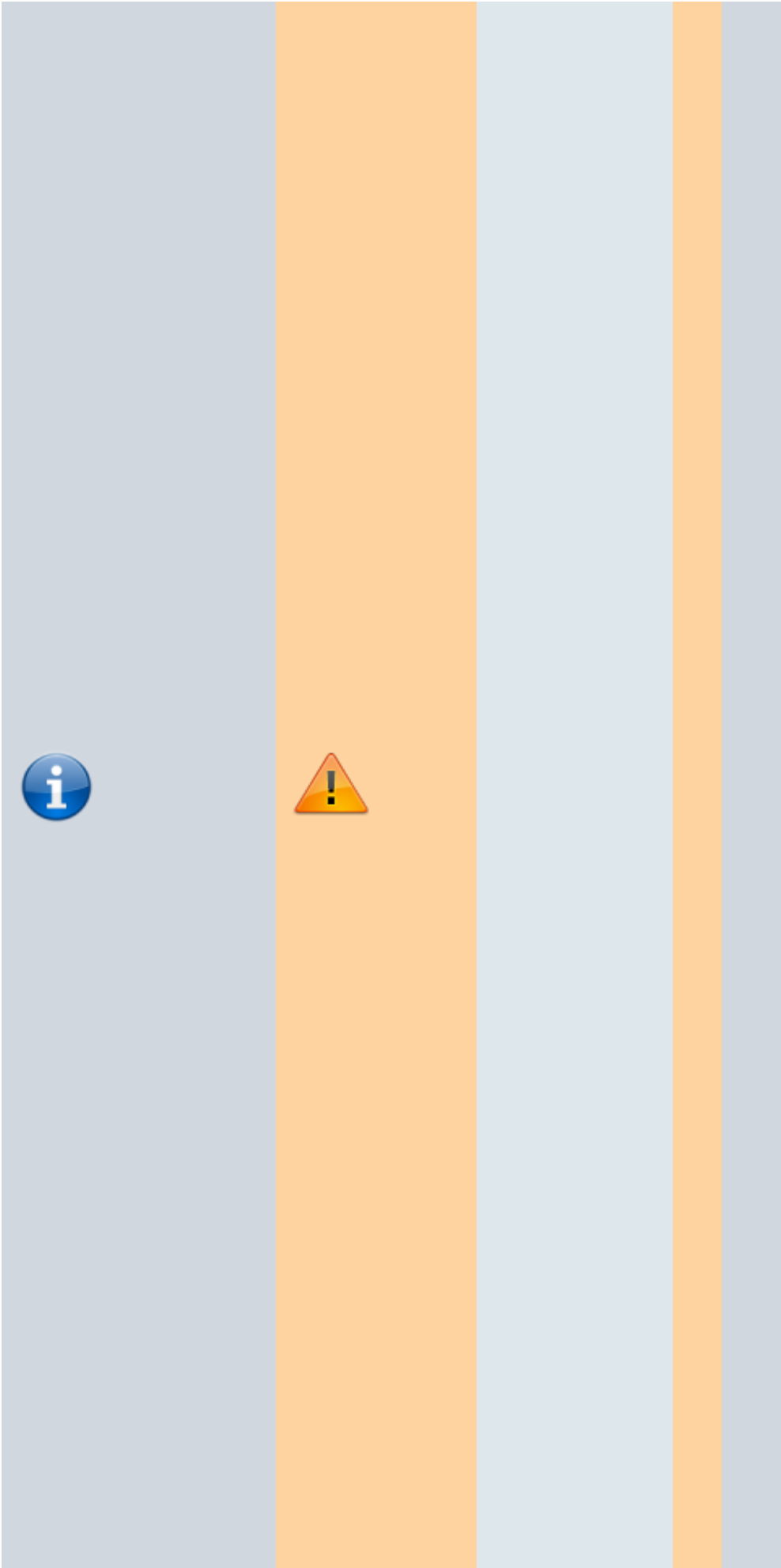


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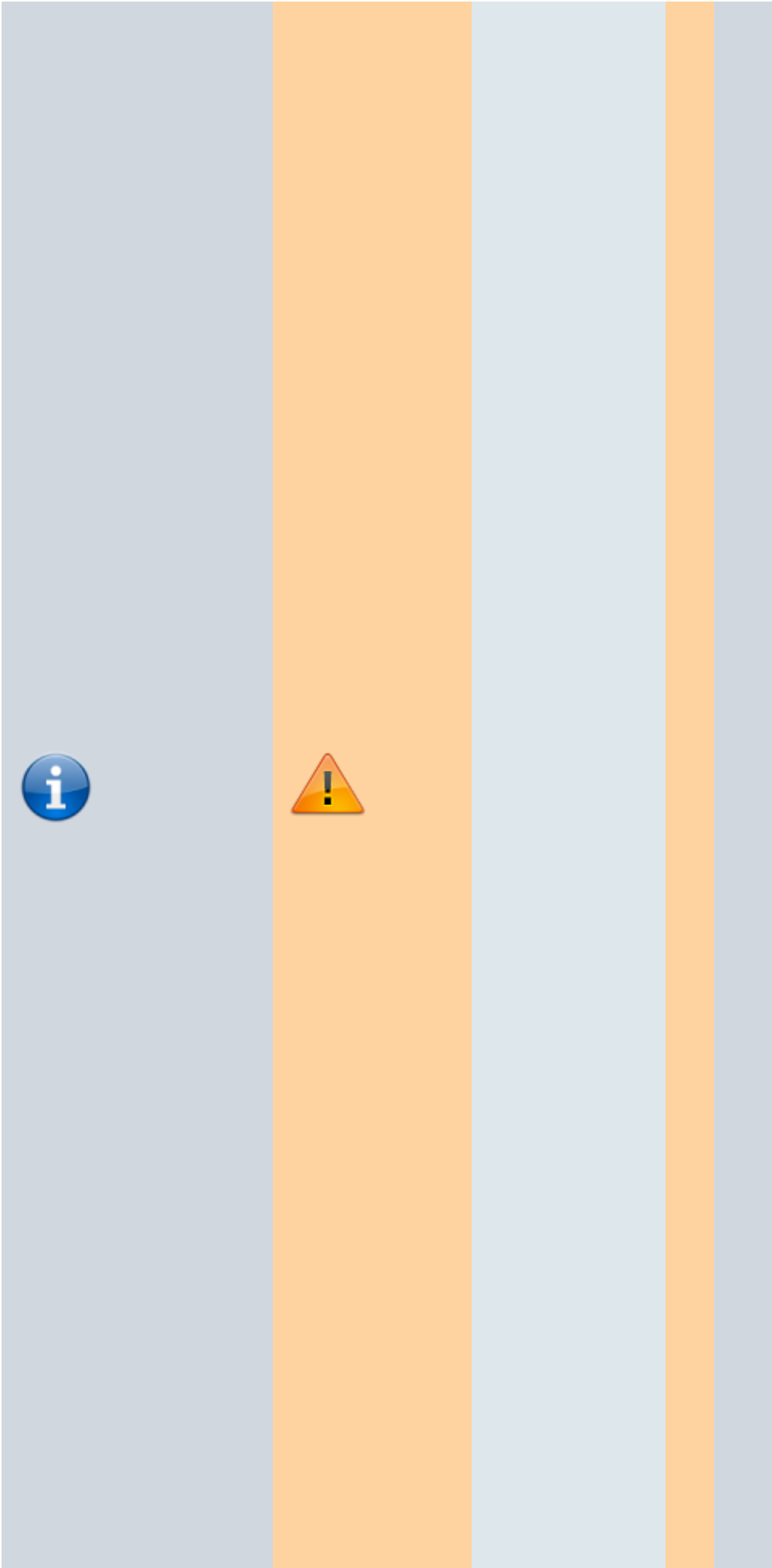
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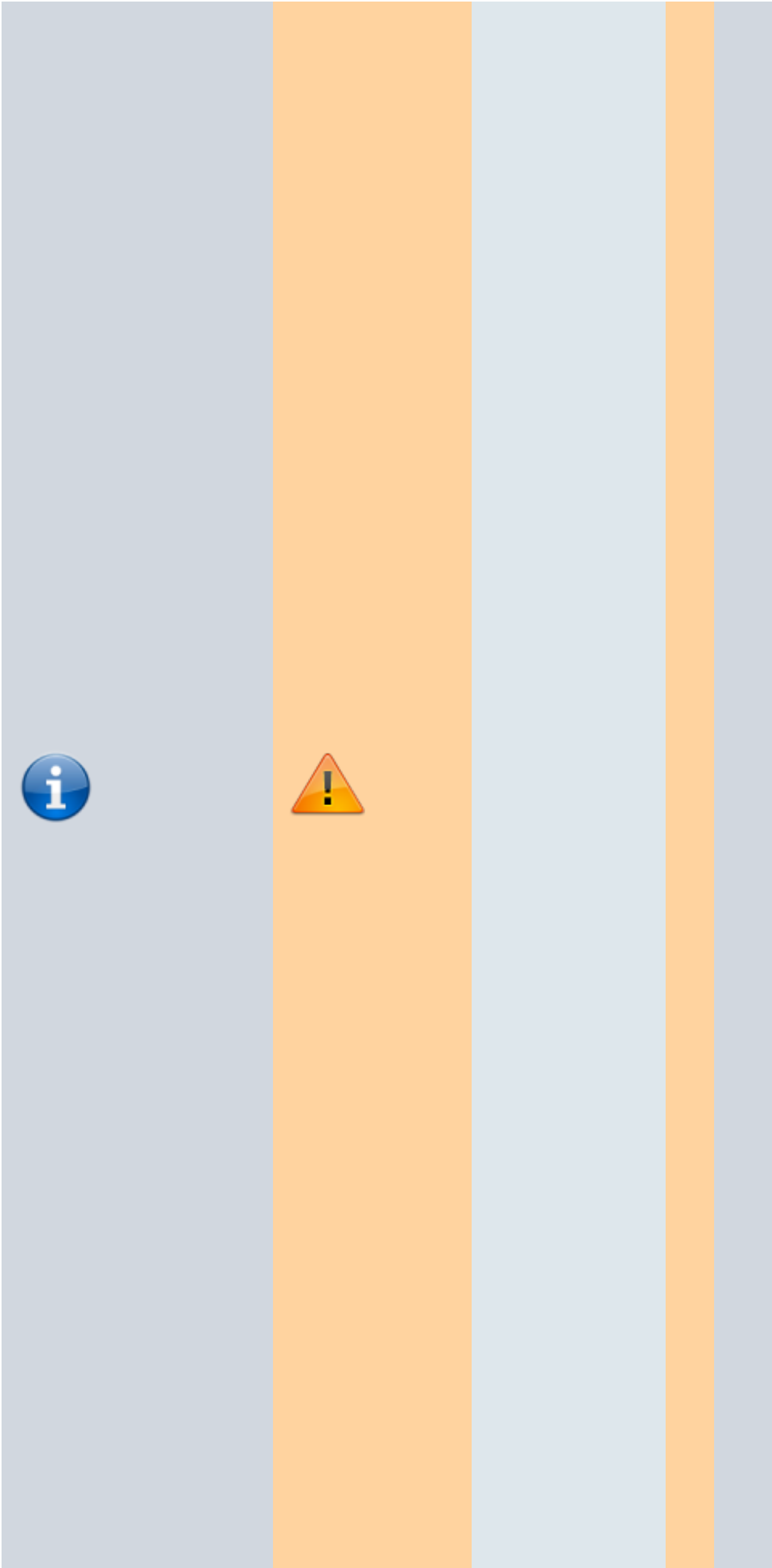


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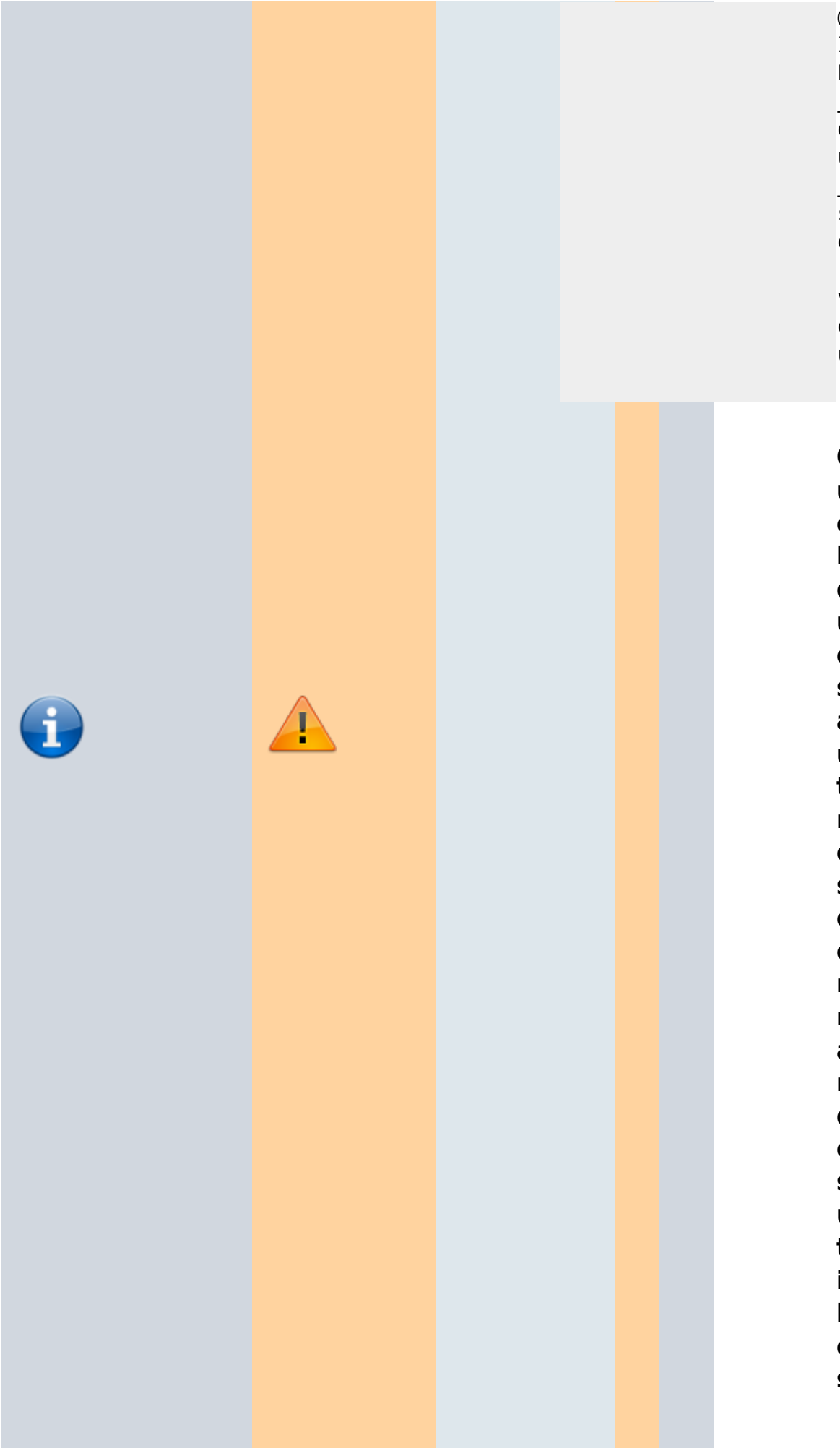
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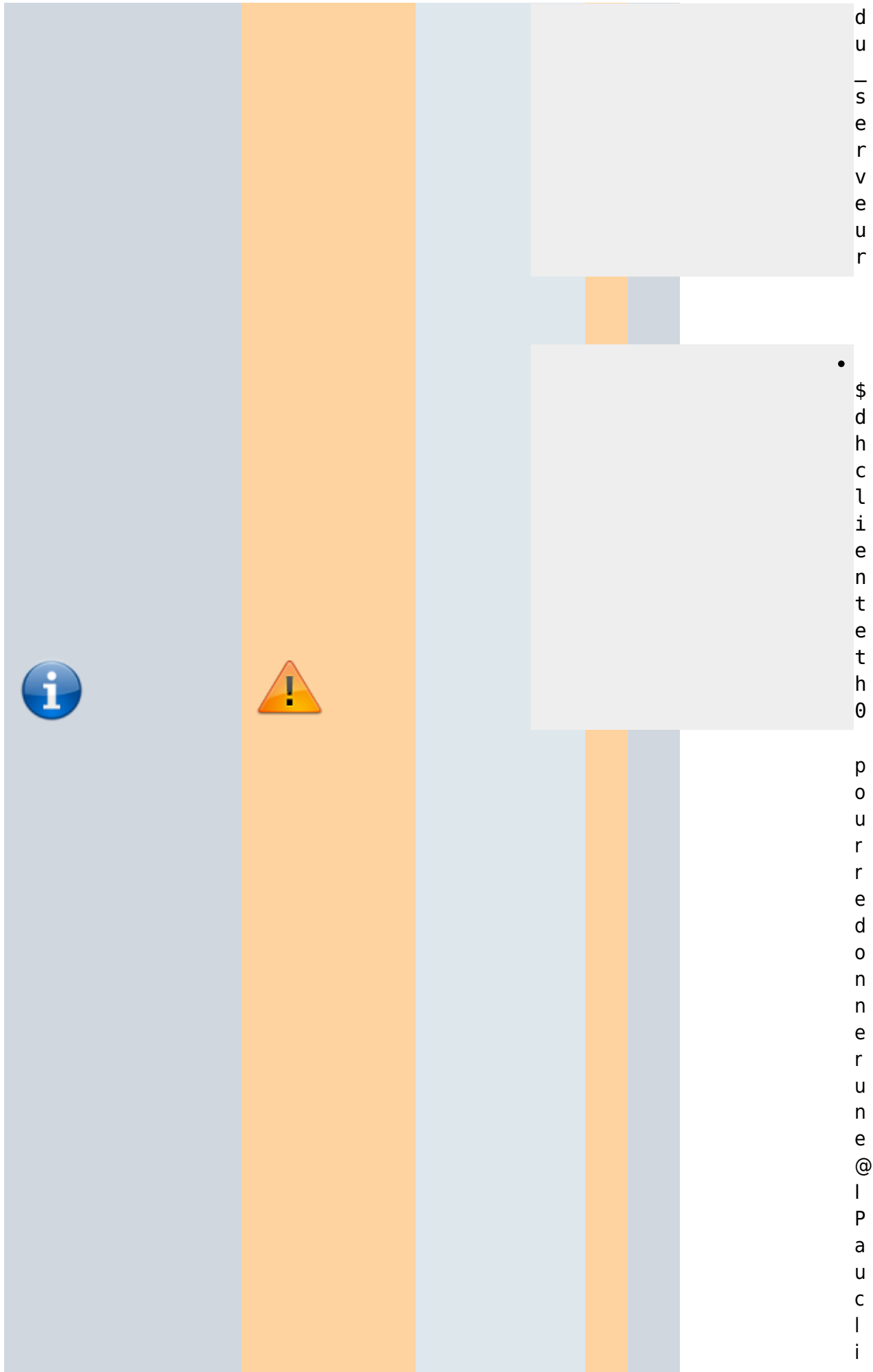
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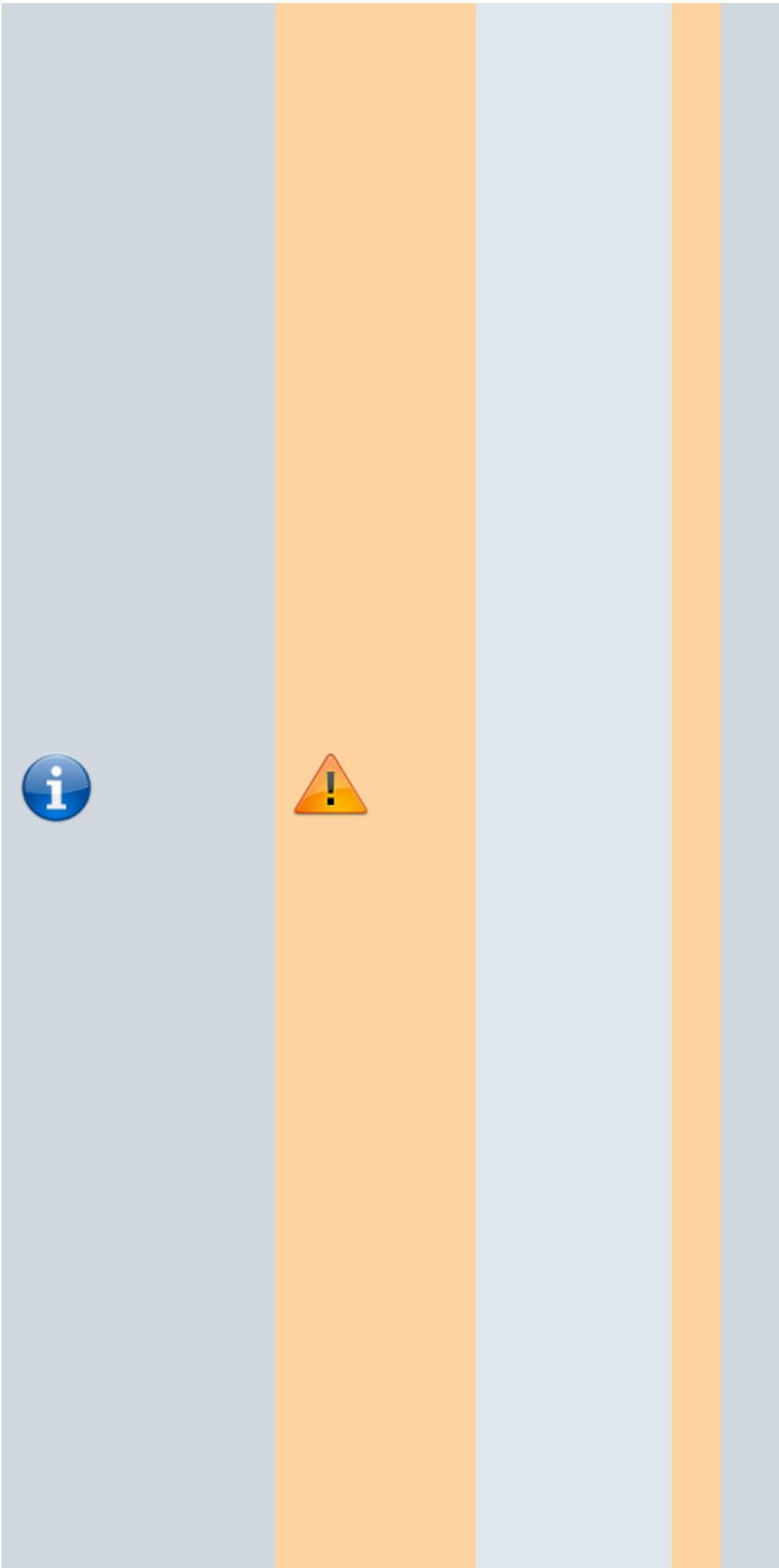


@IP - du - serveur

Quelques autres commandes utiles.

Client -> Server

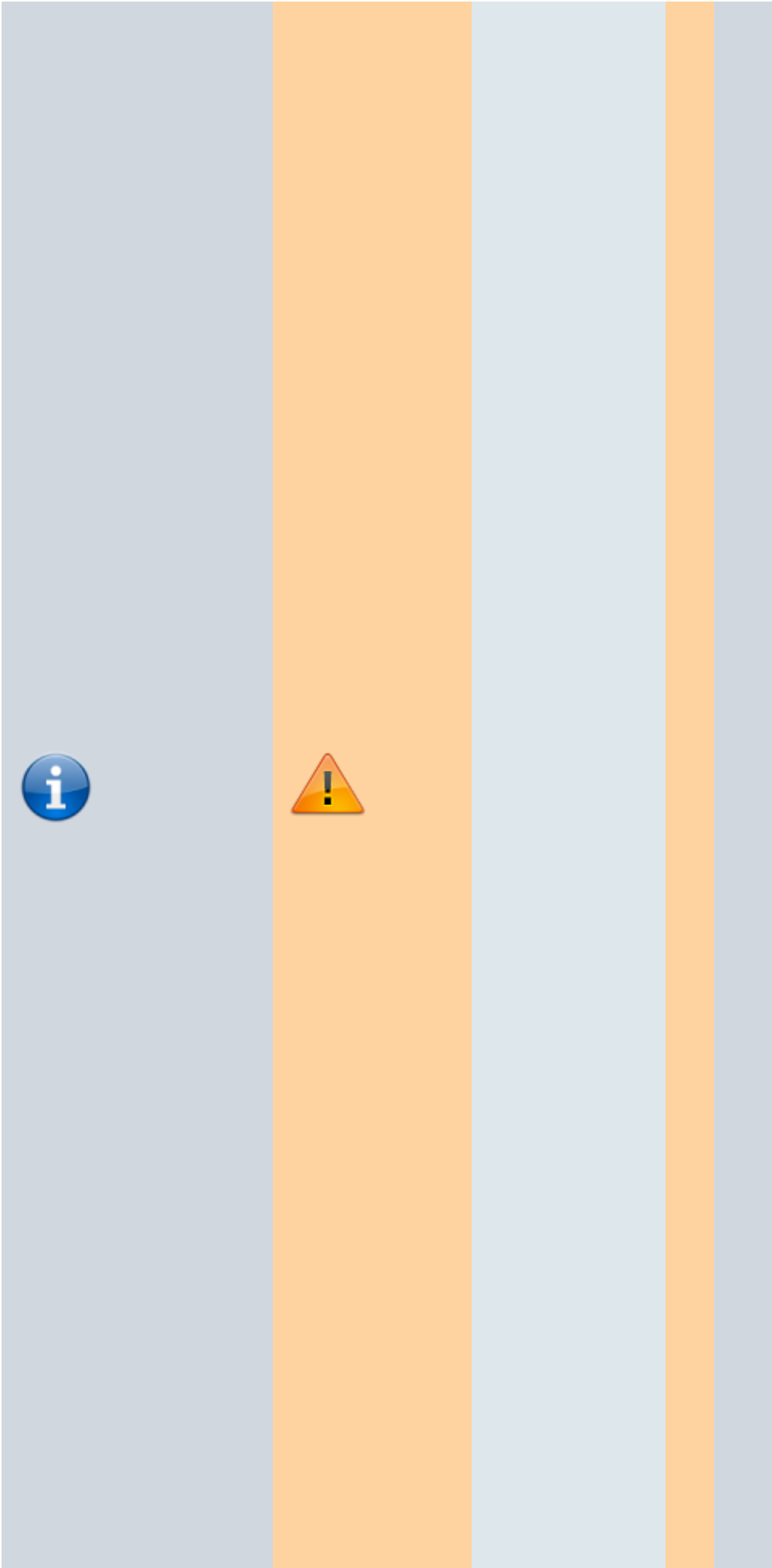




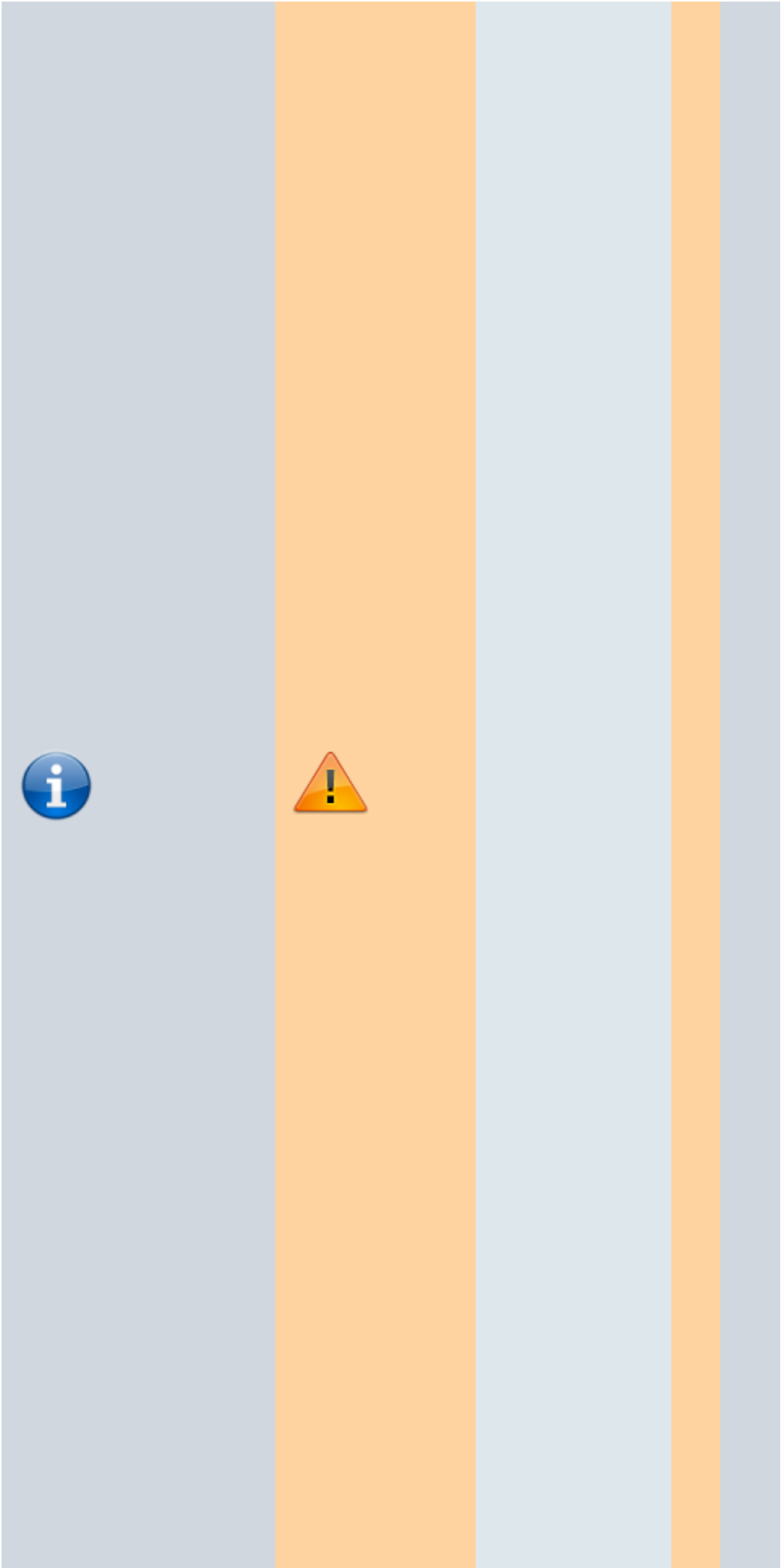
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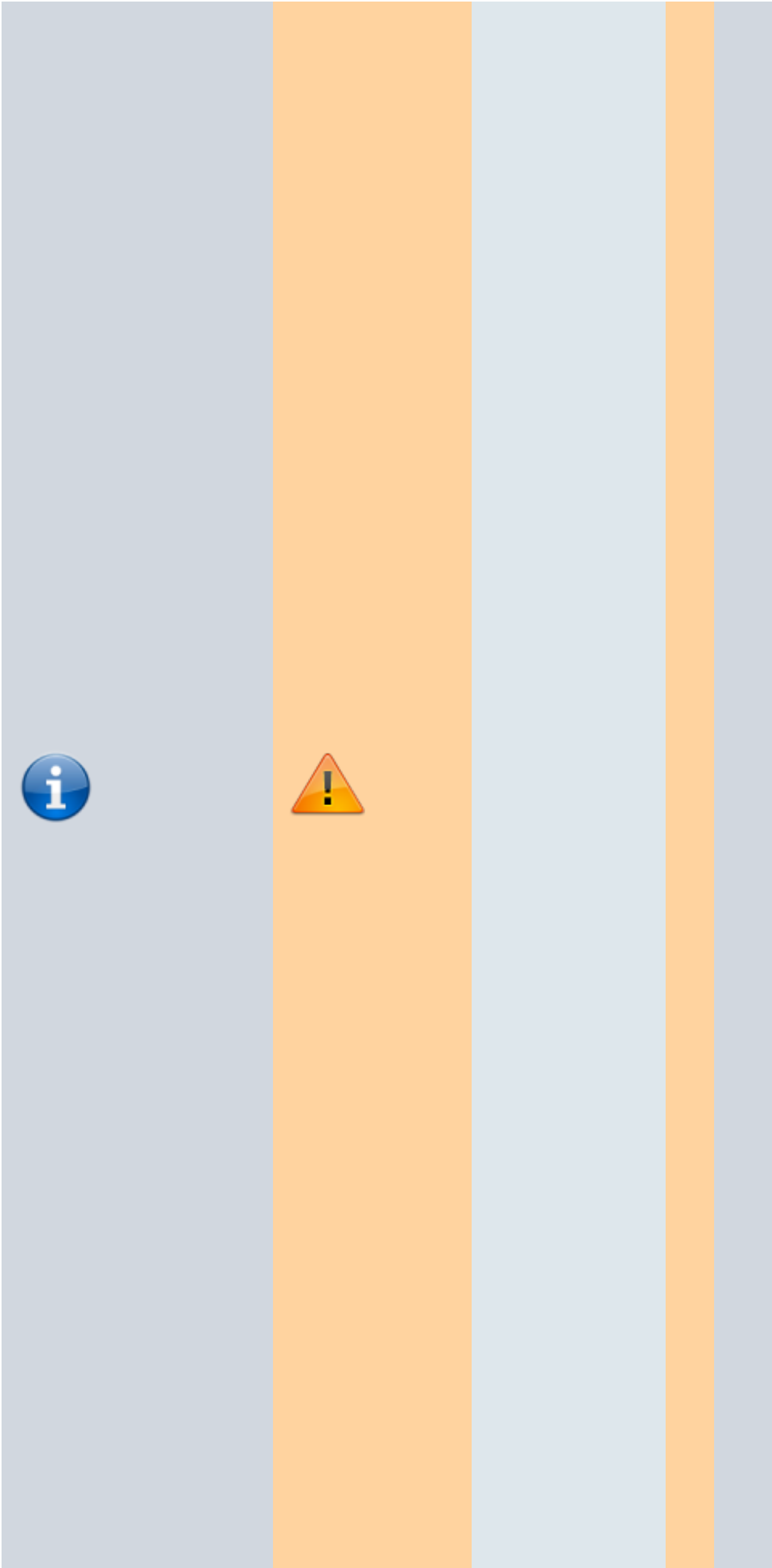
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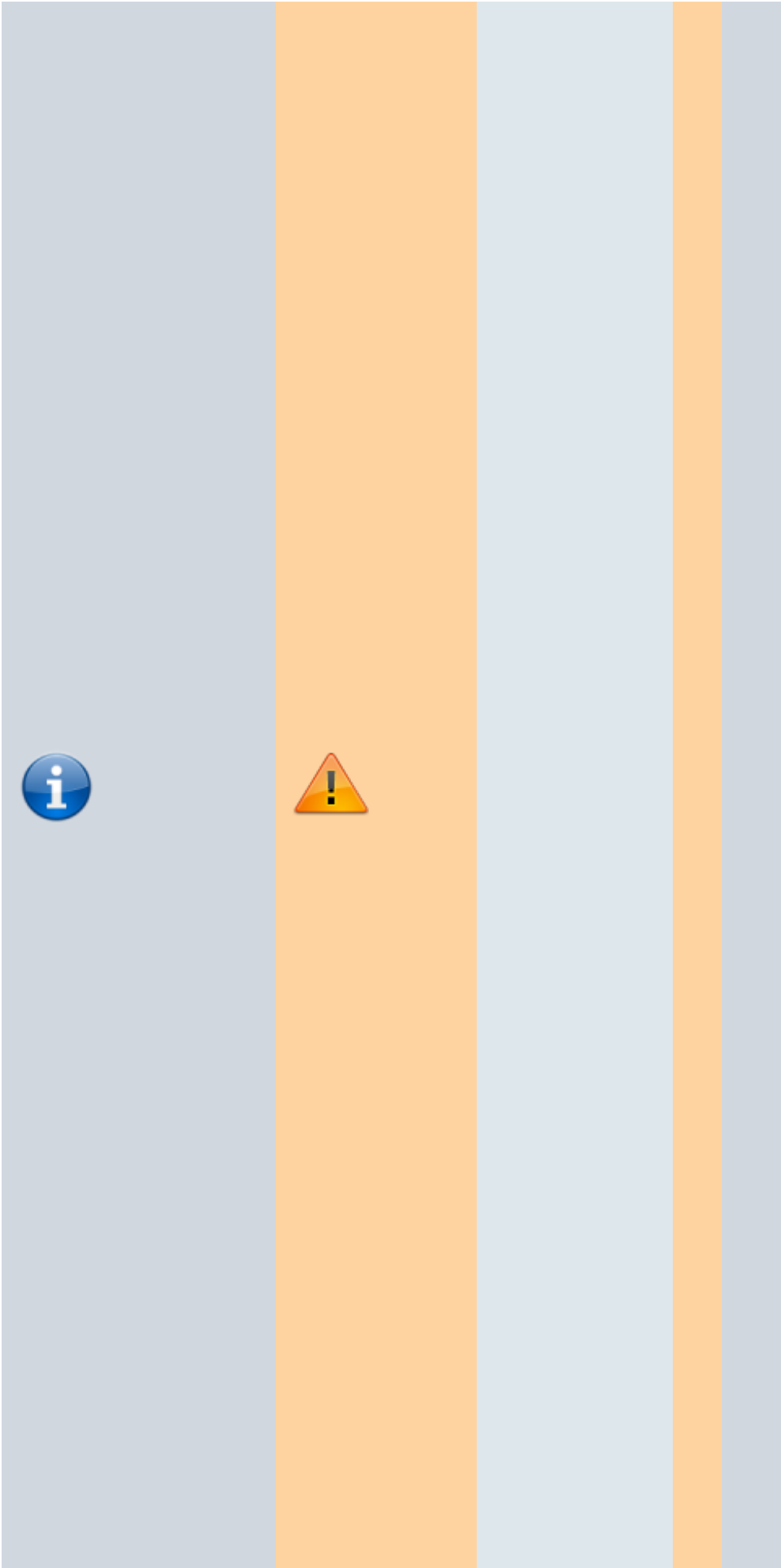
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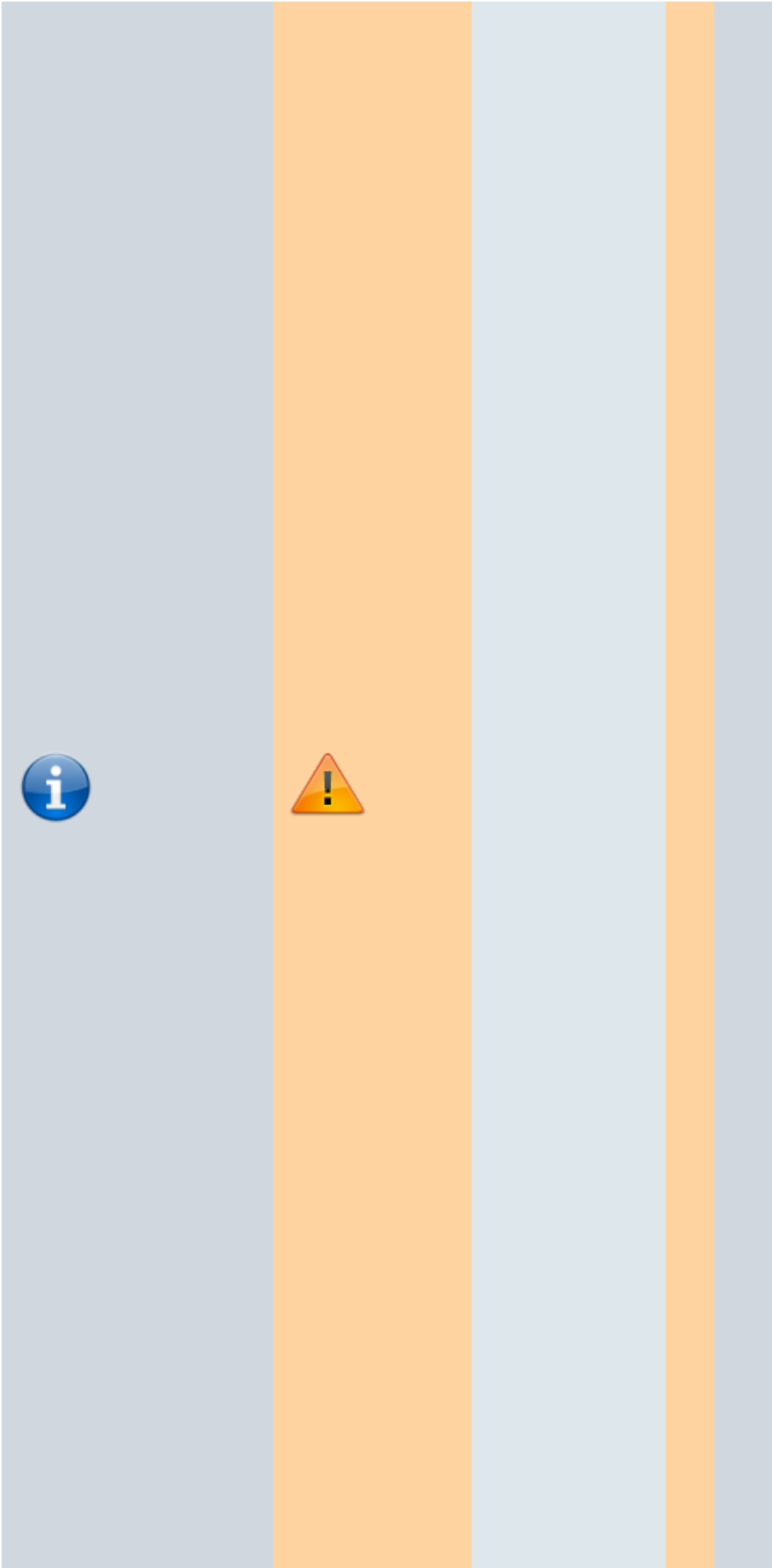
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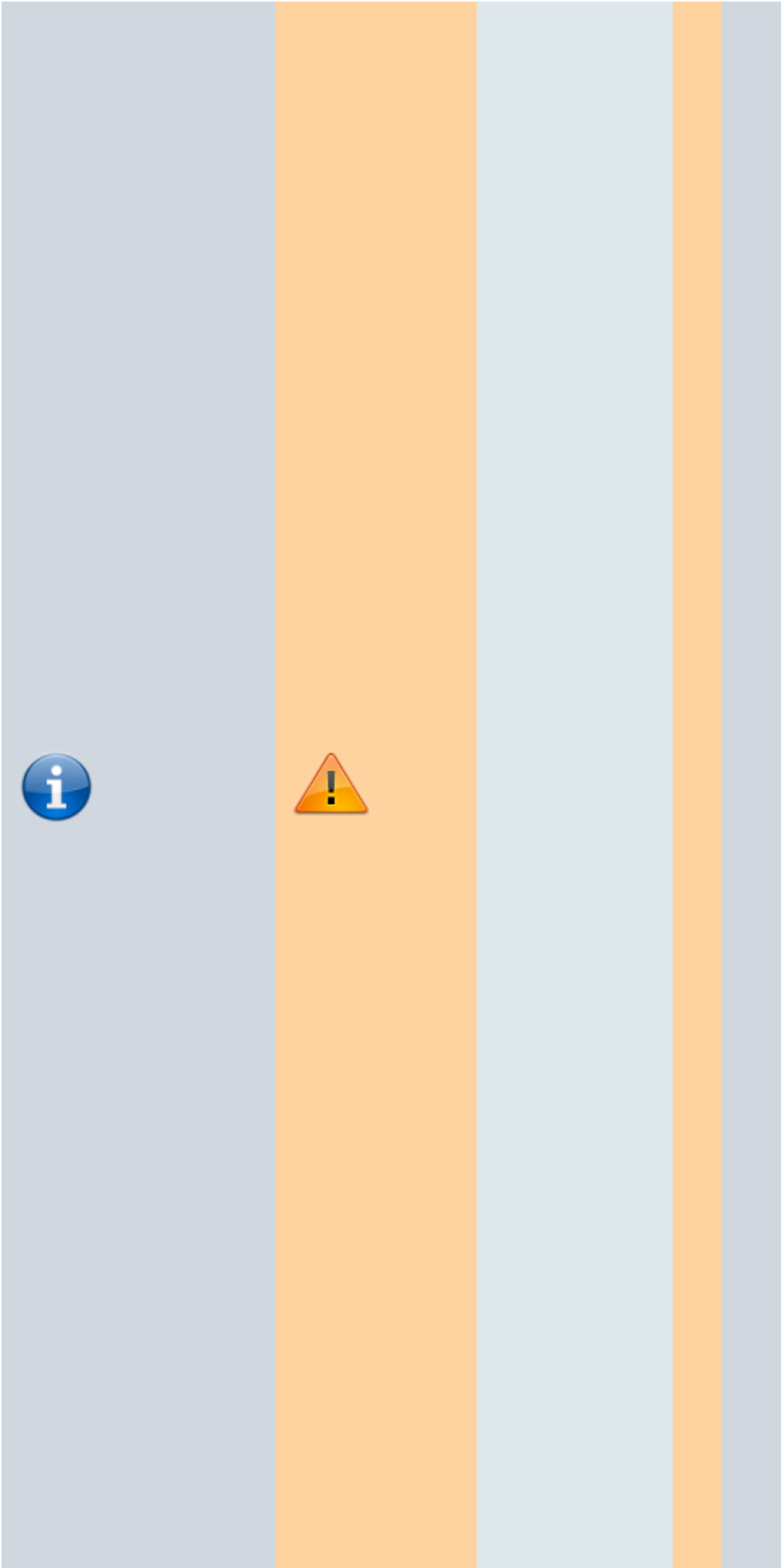
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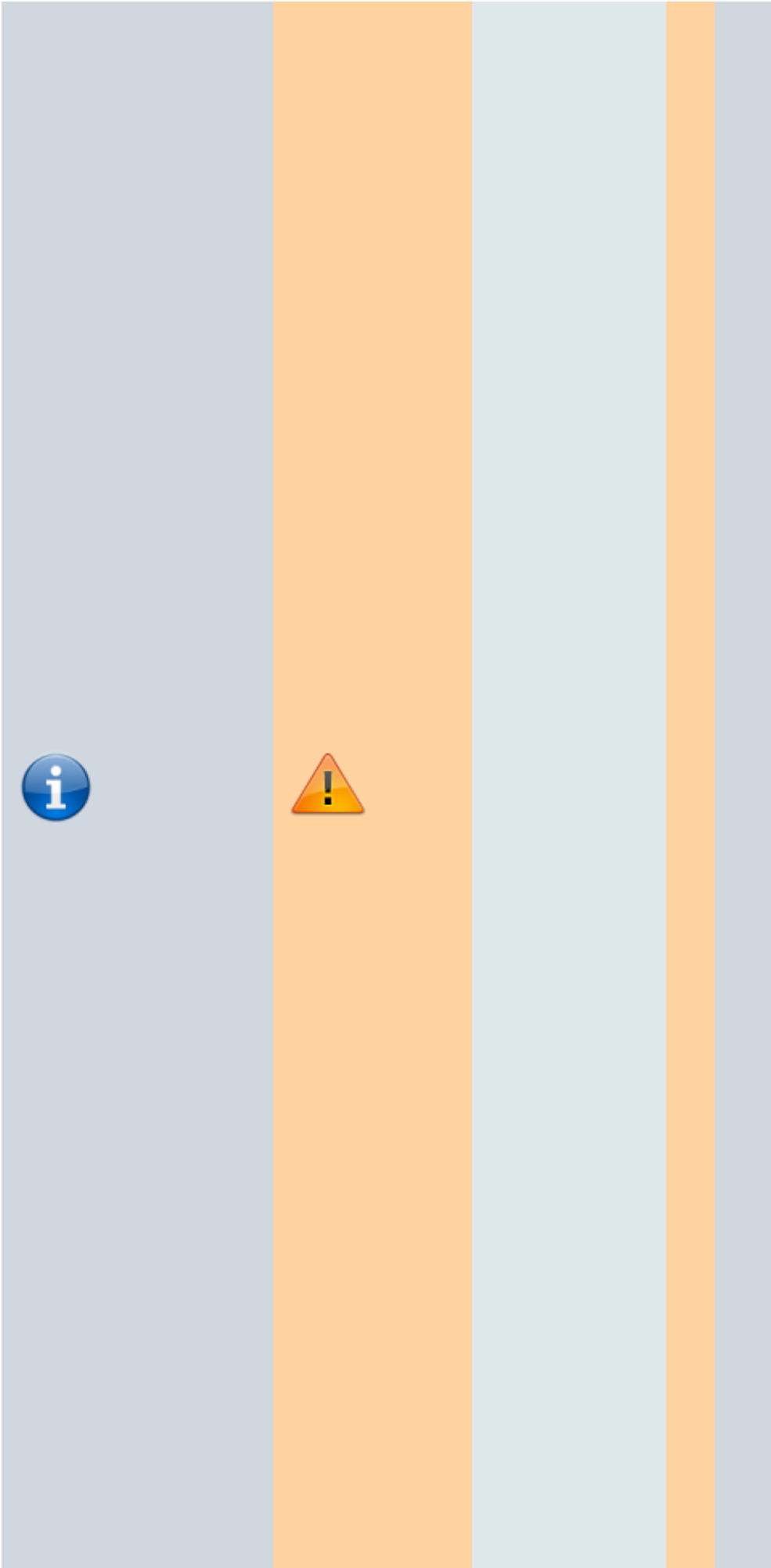
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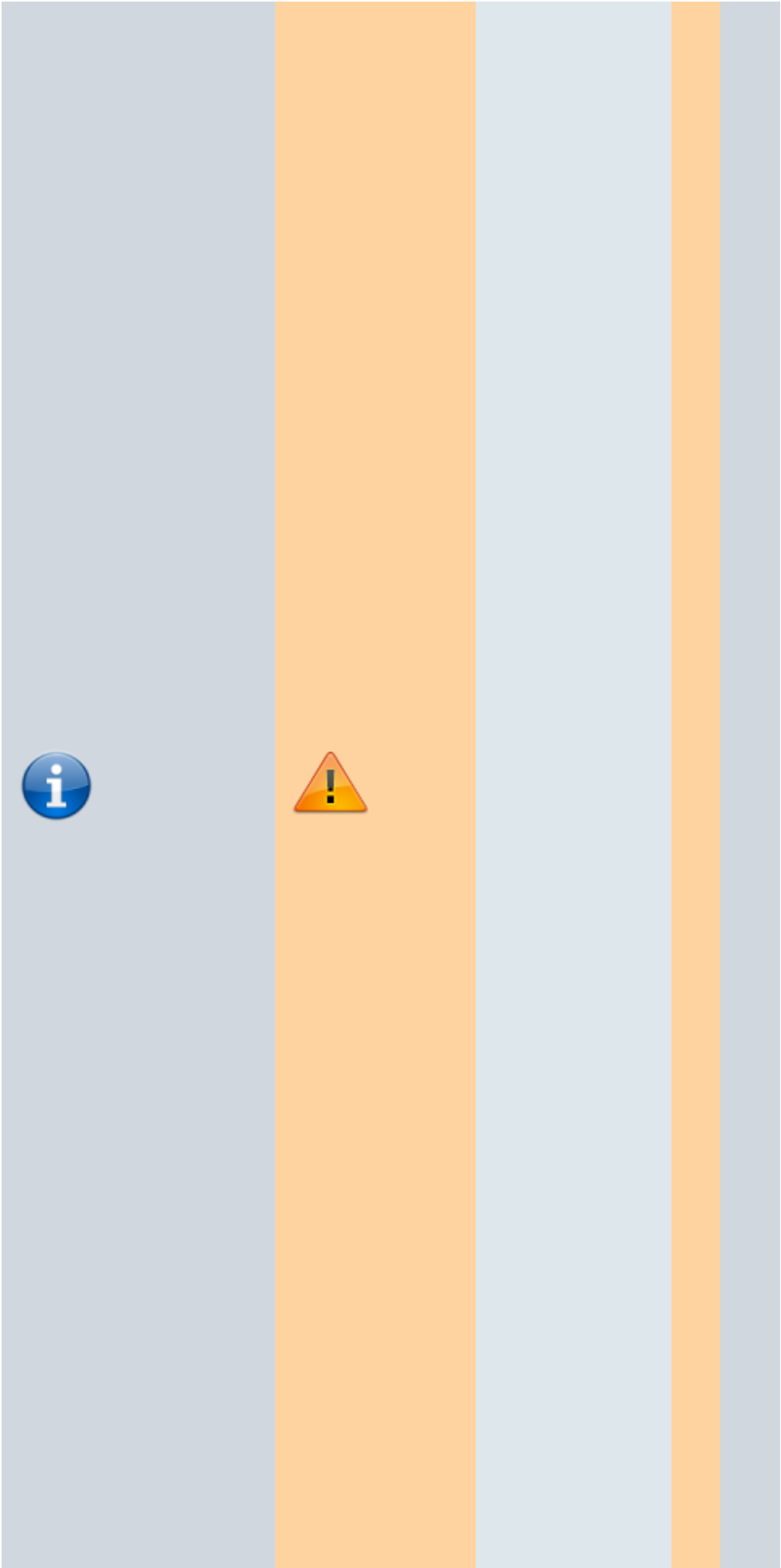
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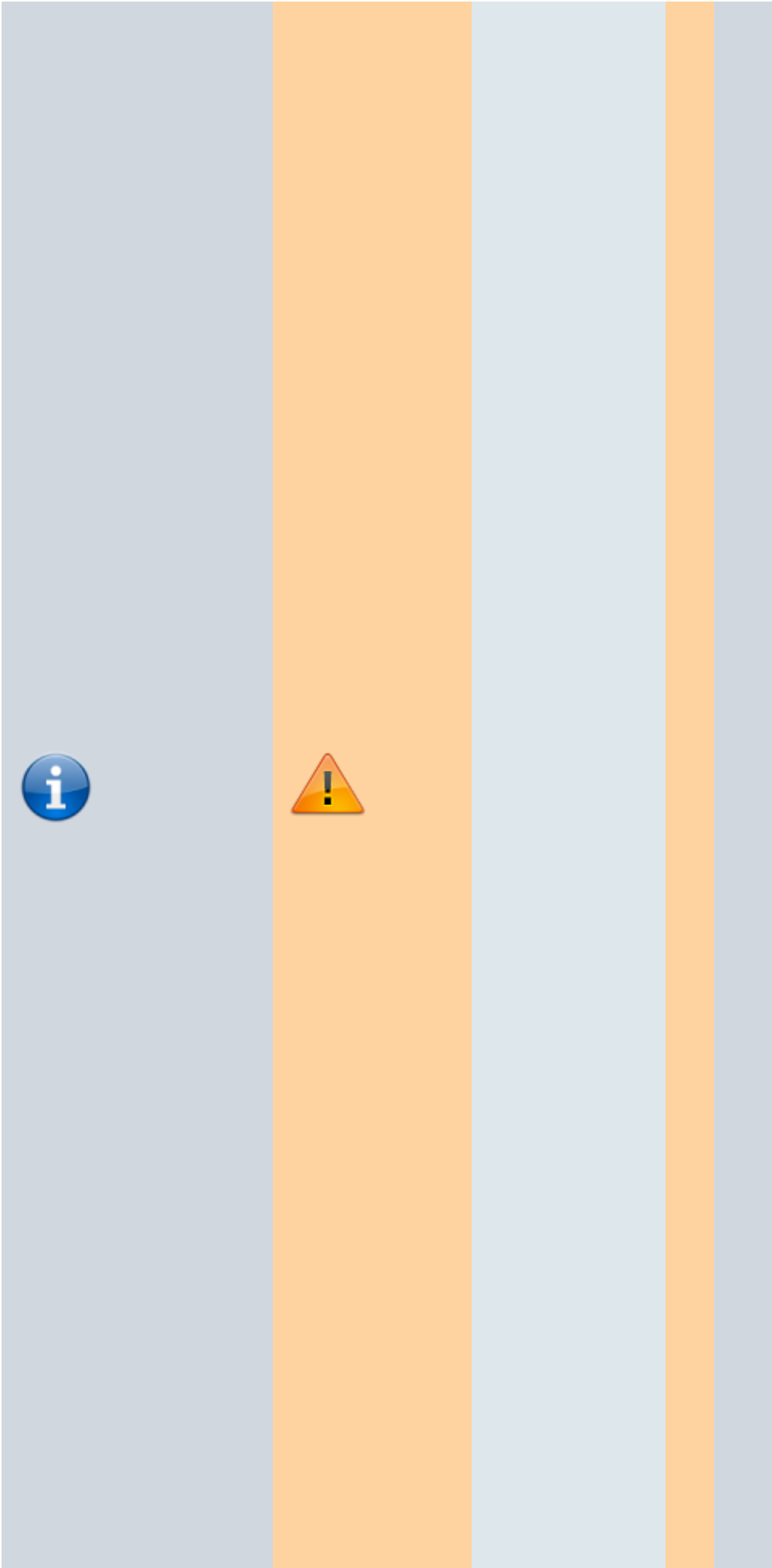
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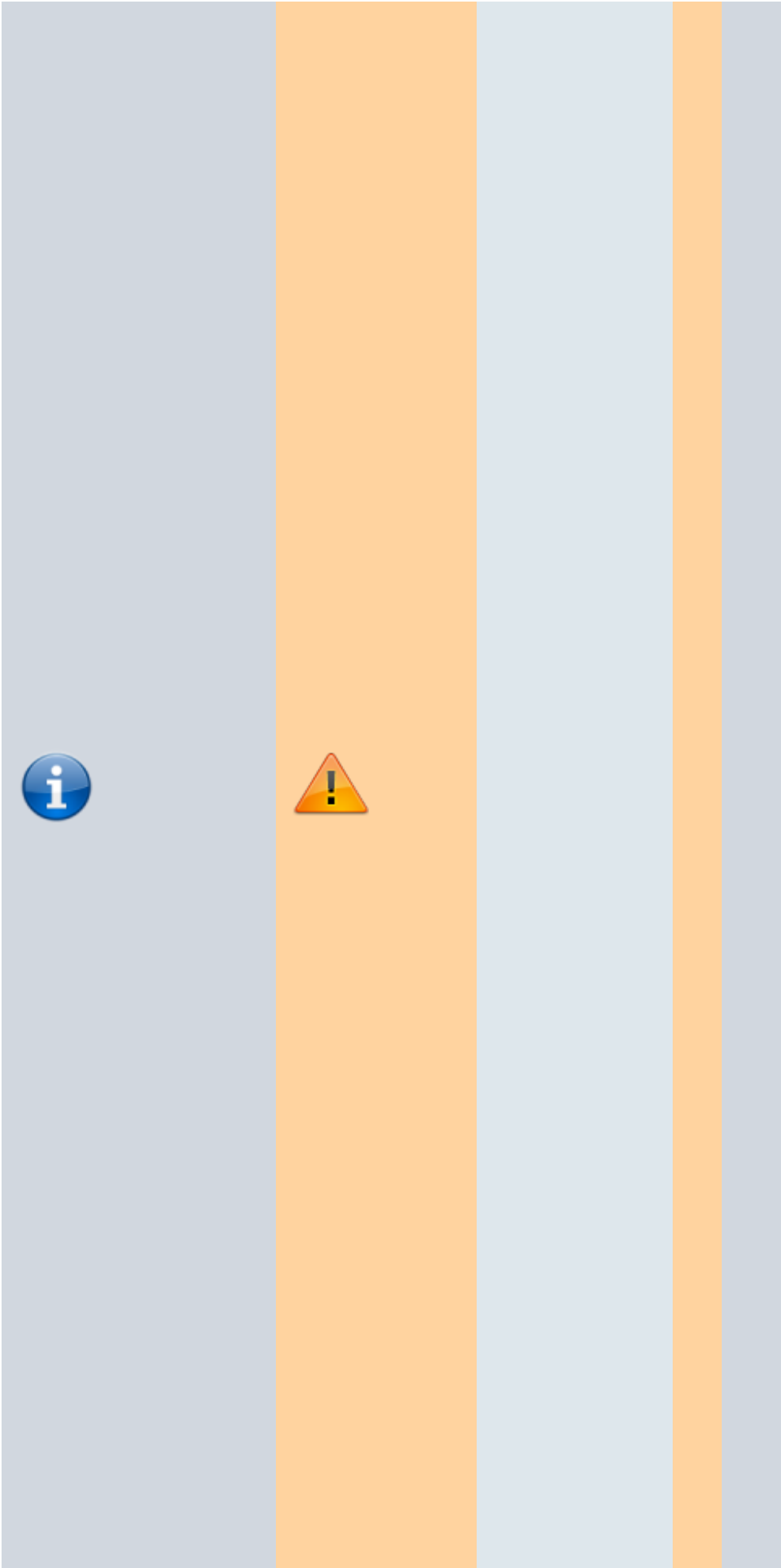
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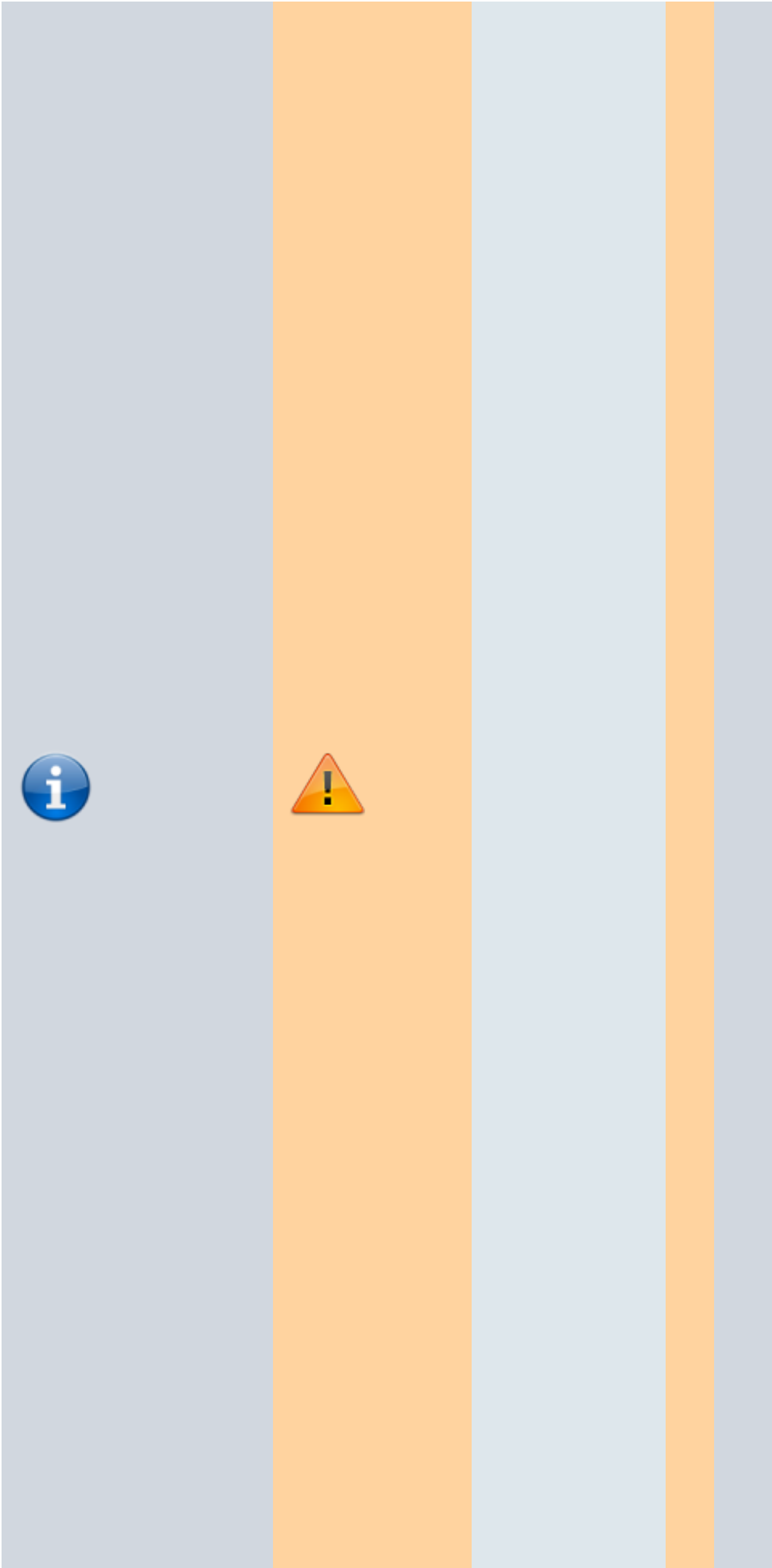
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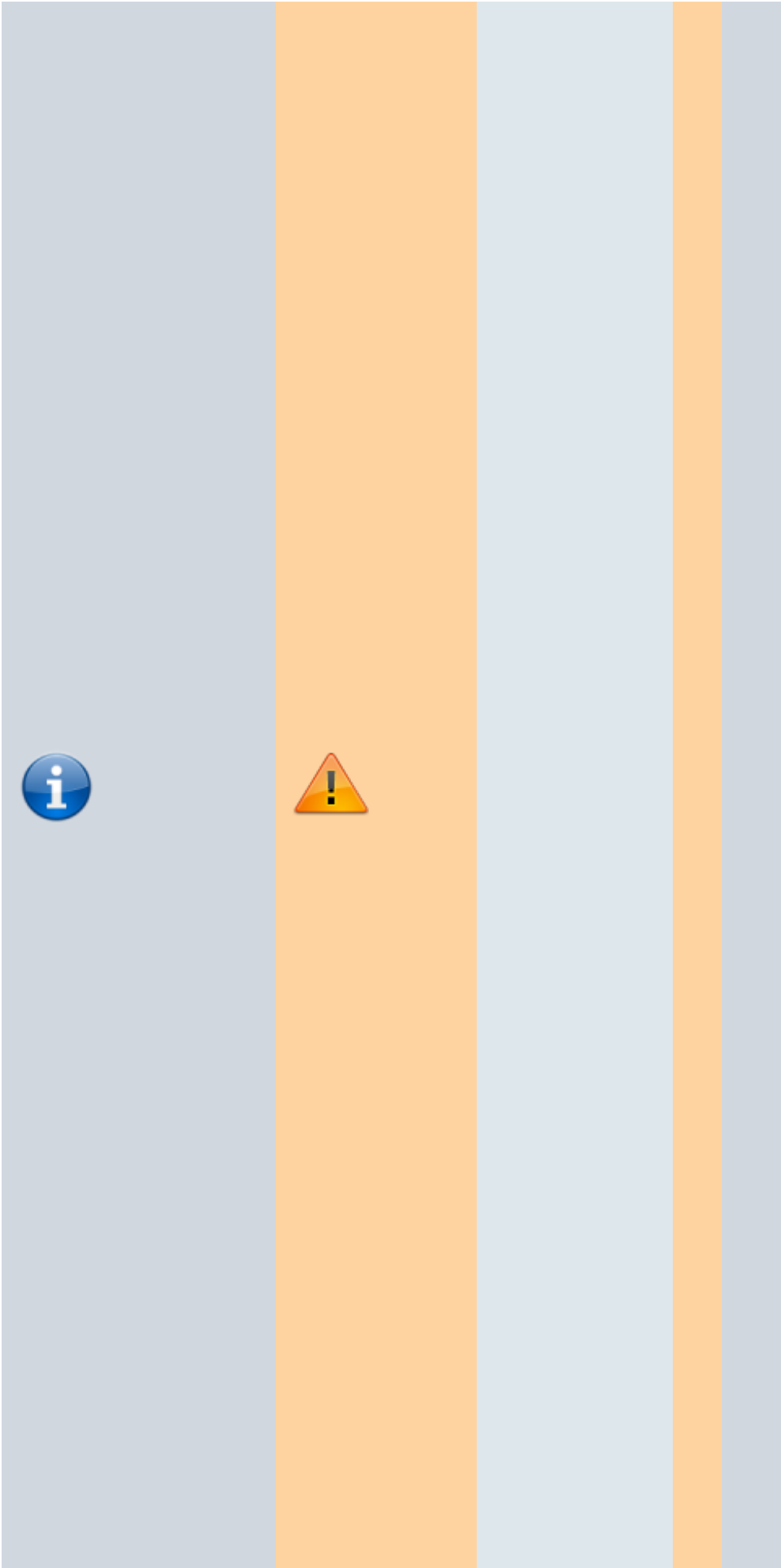
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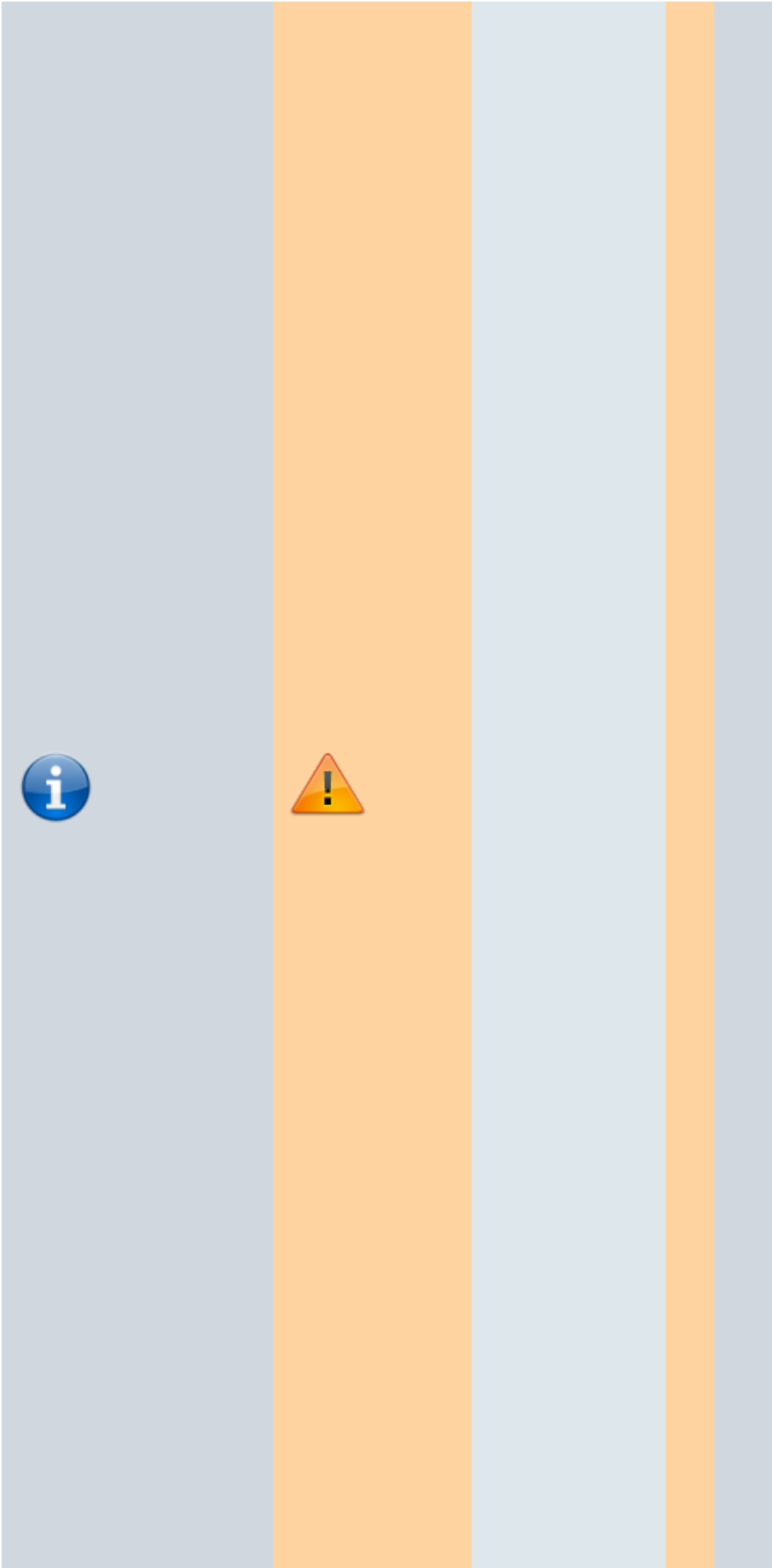
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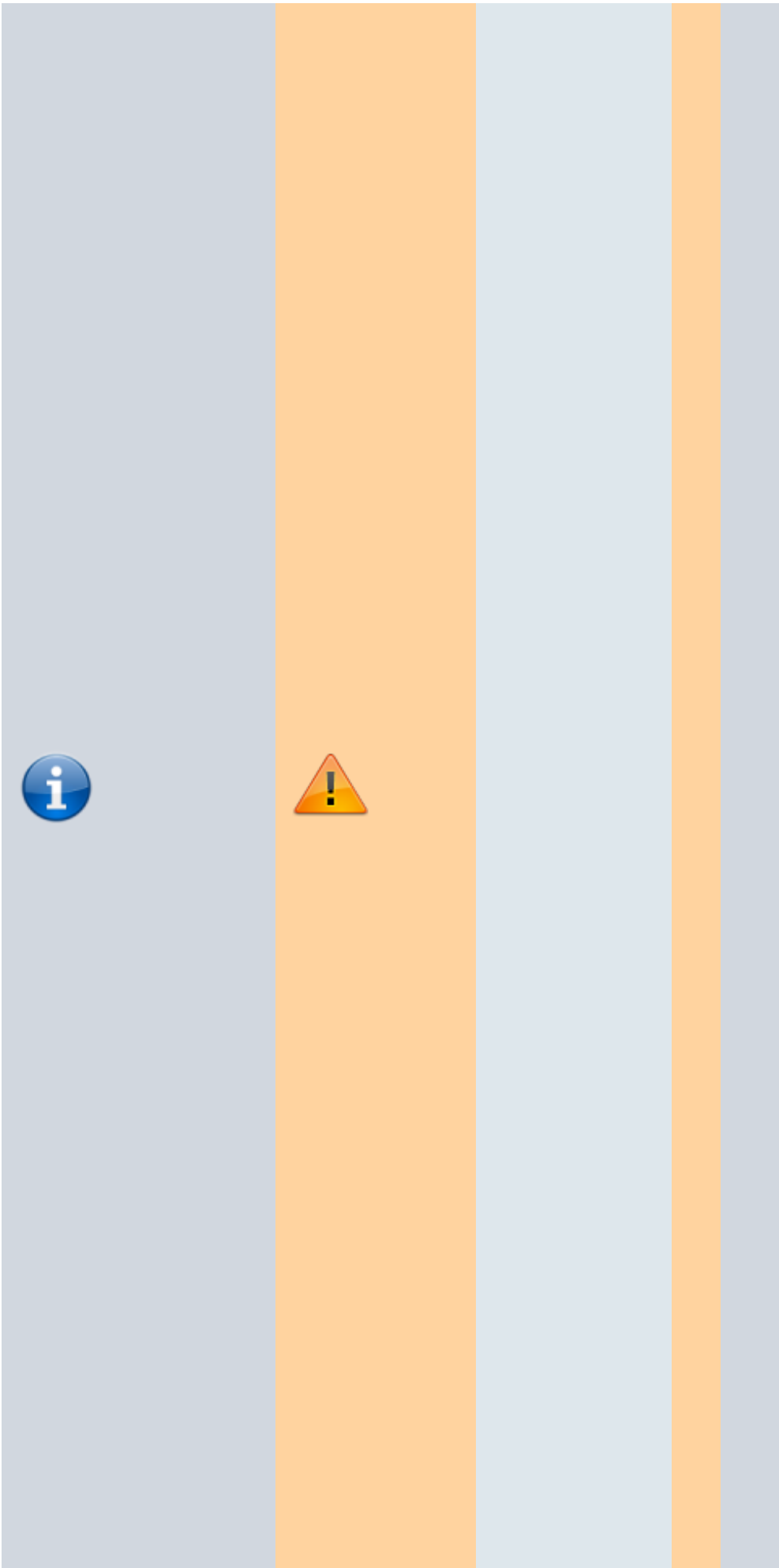


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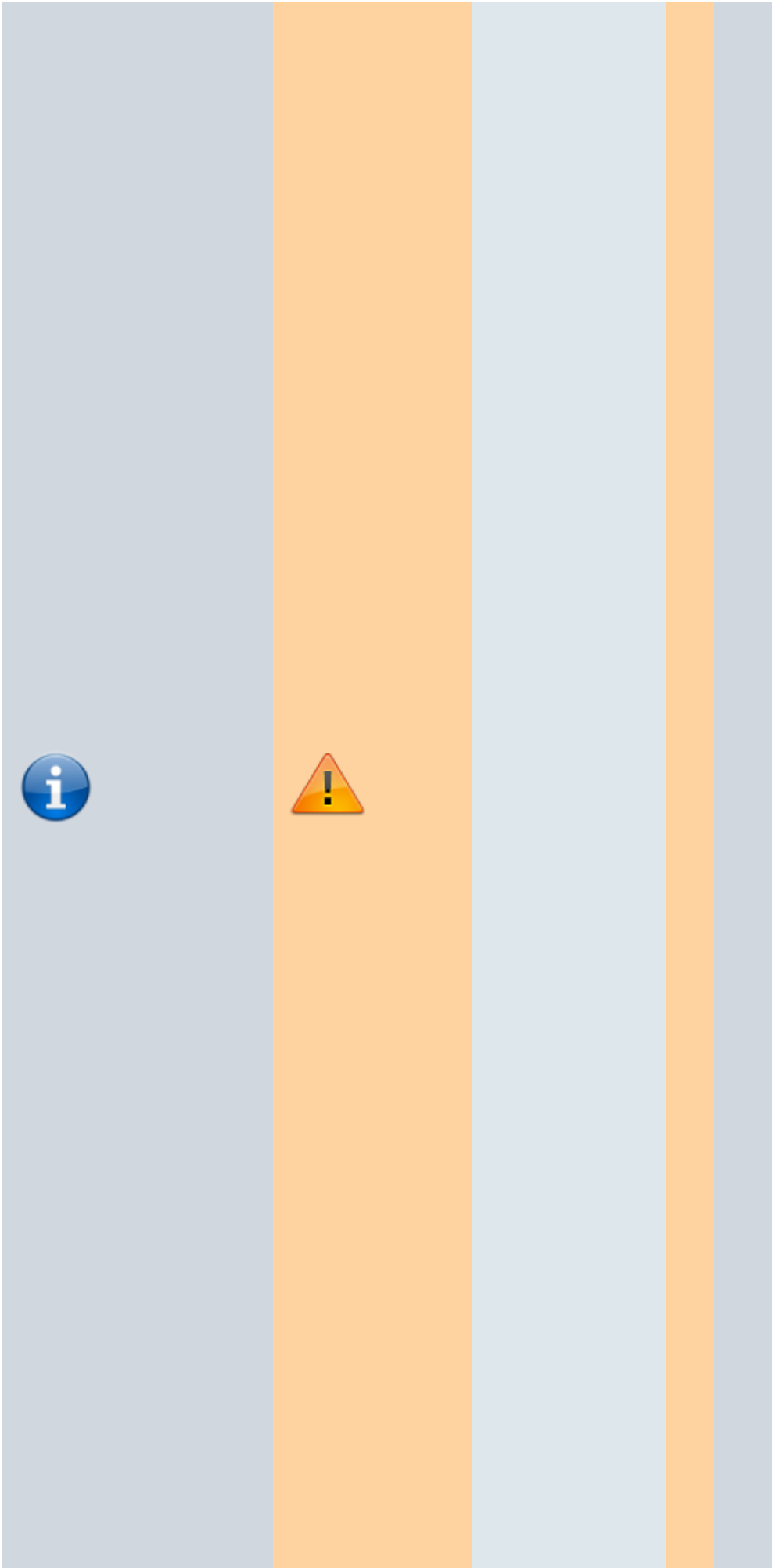


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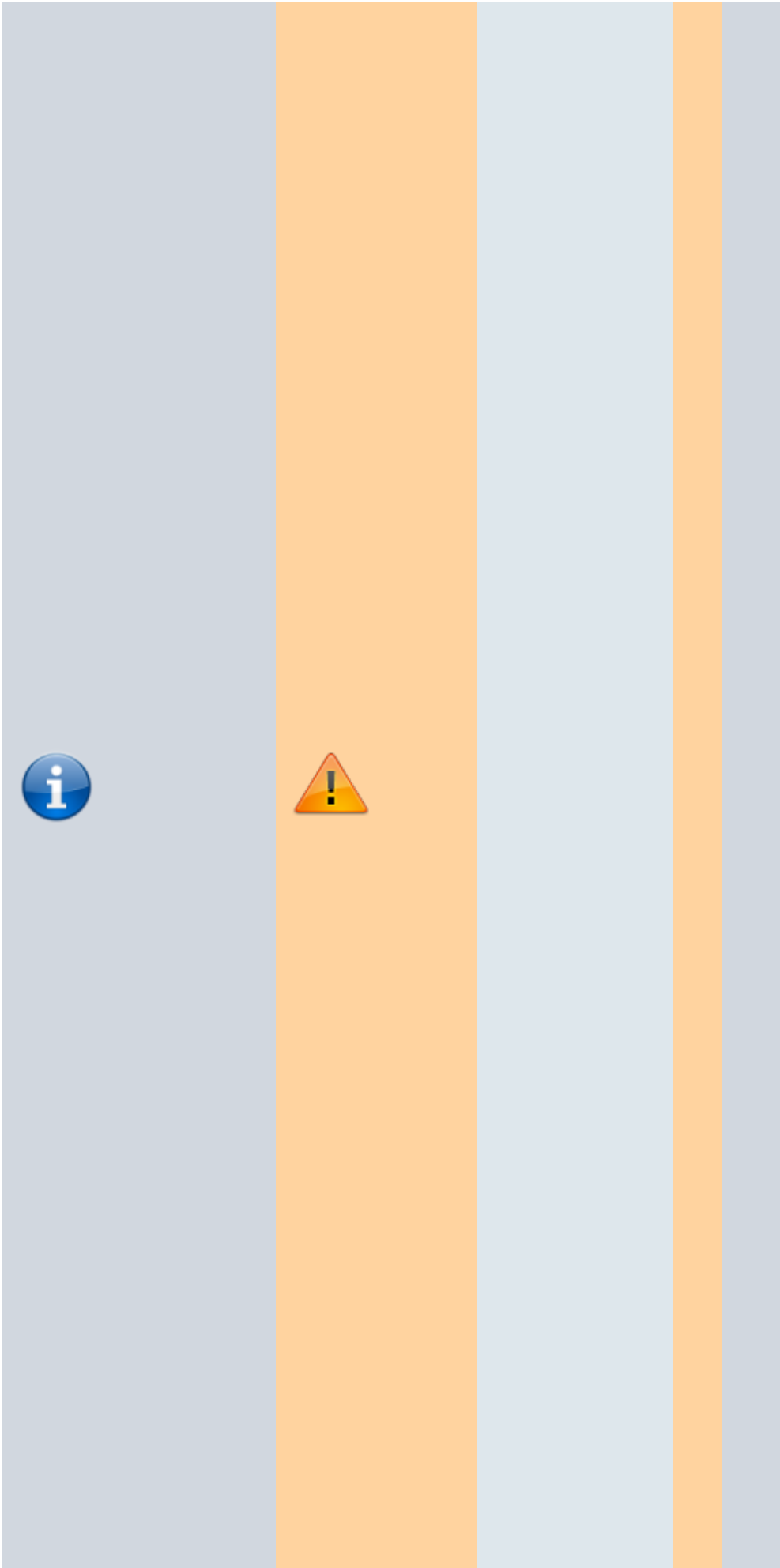
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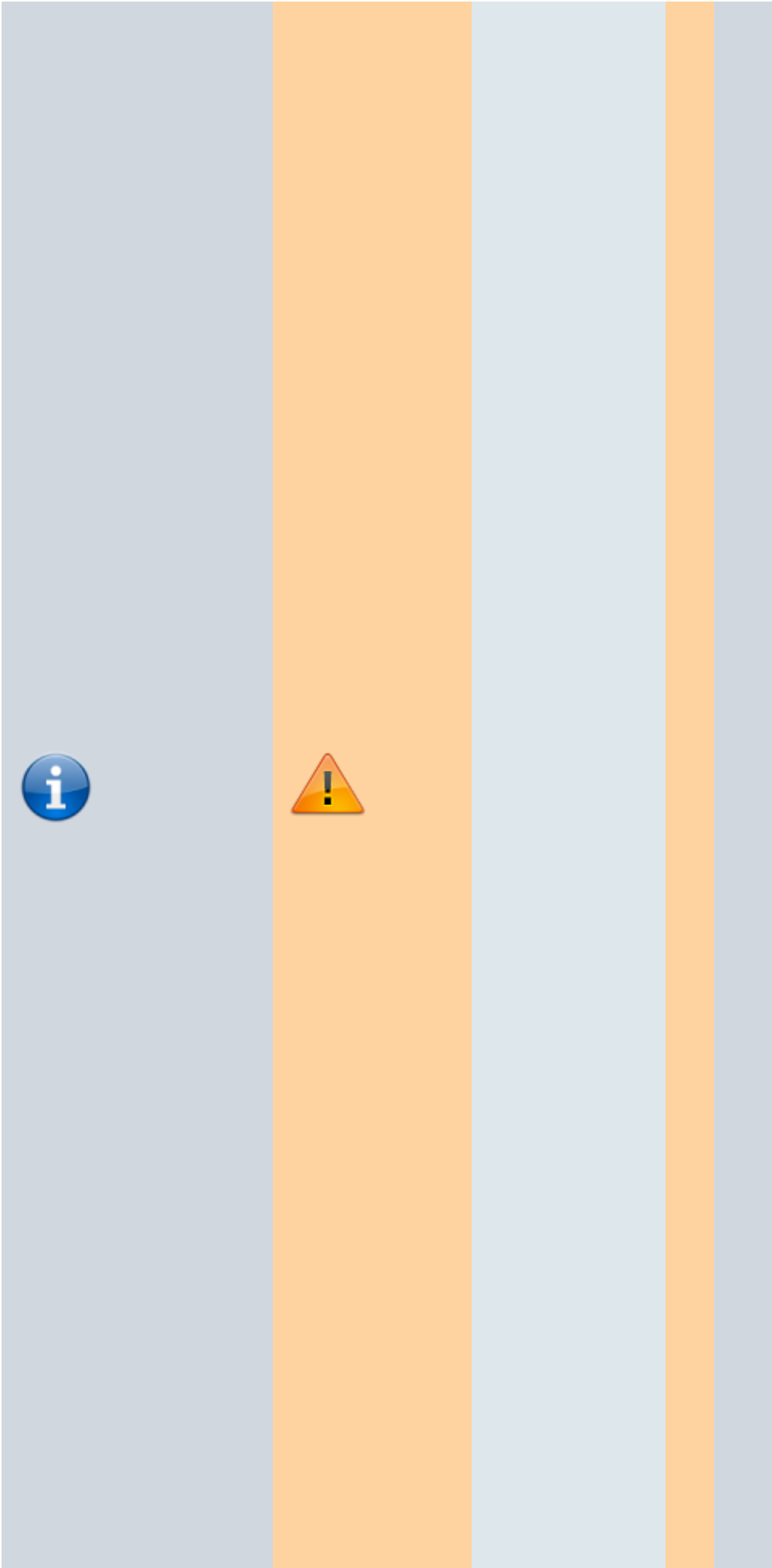
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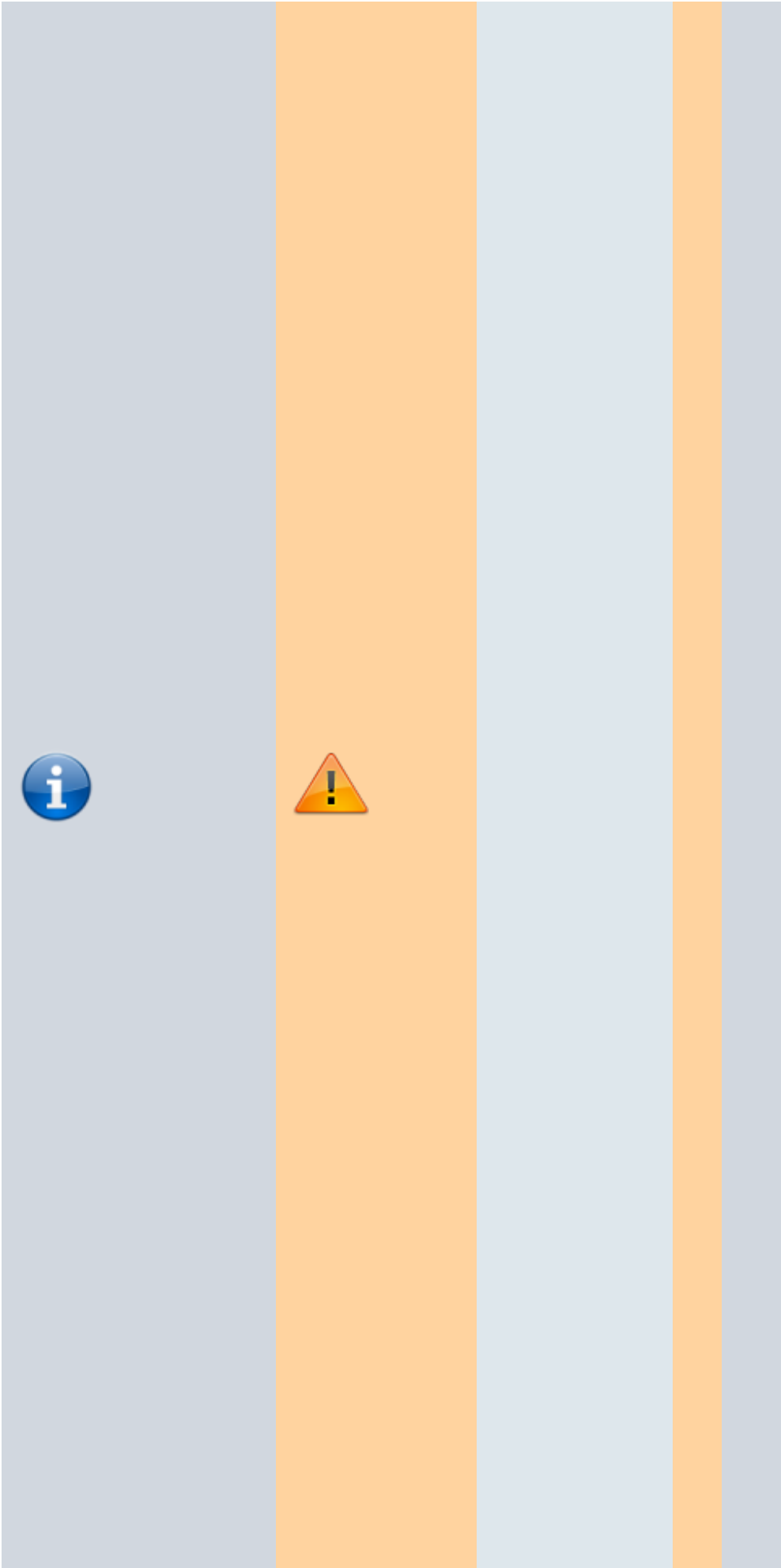
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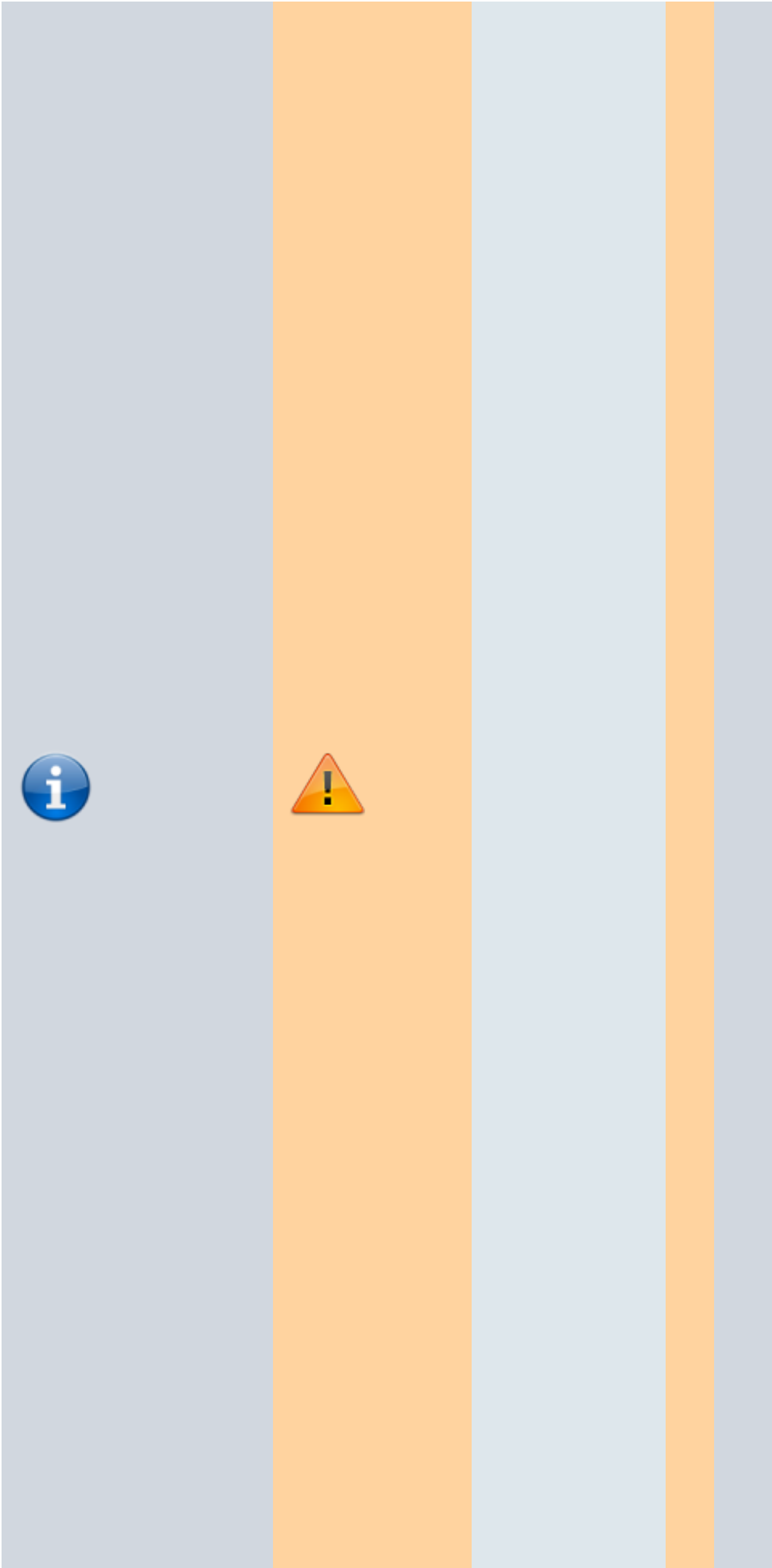
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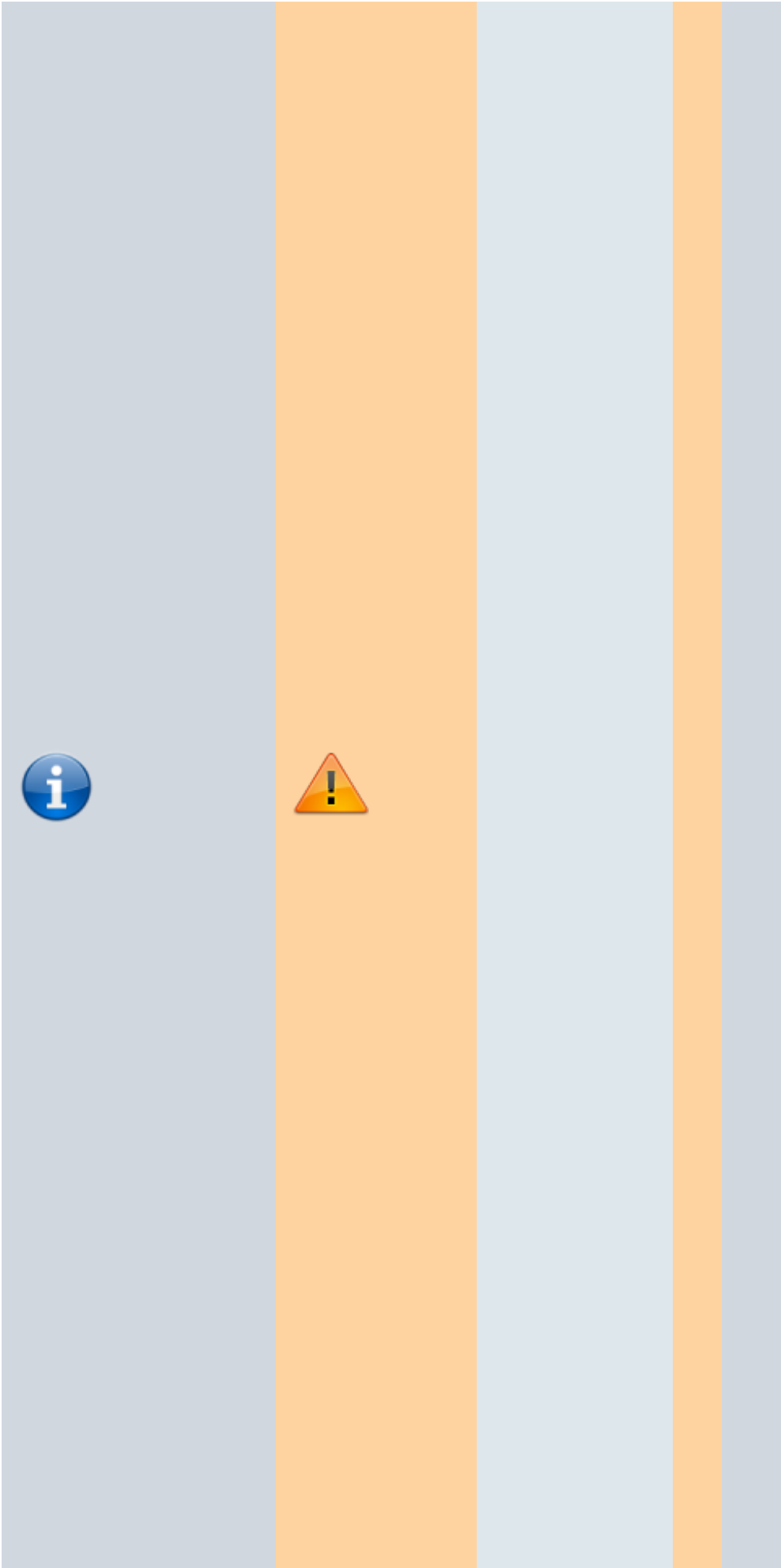
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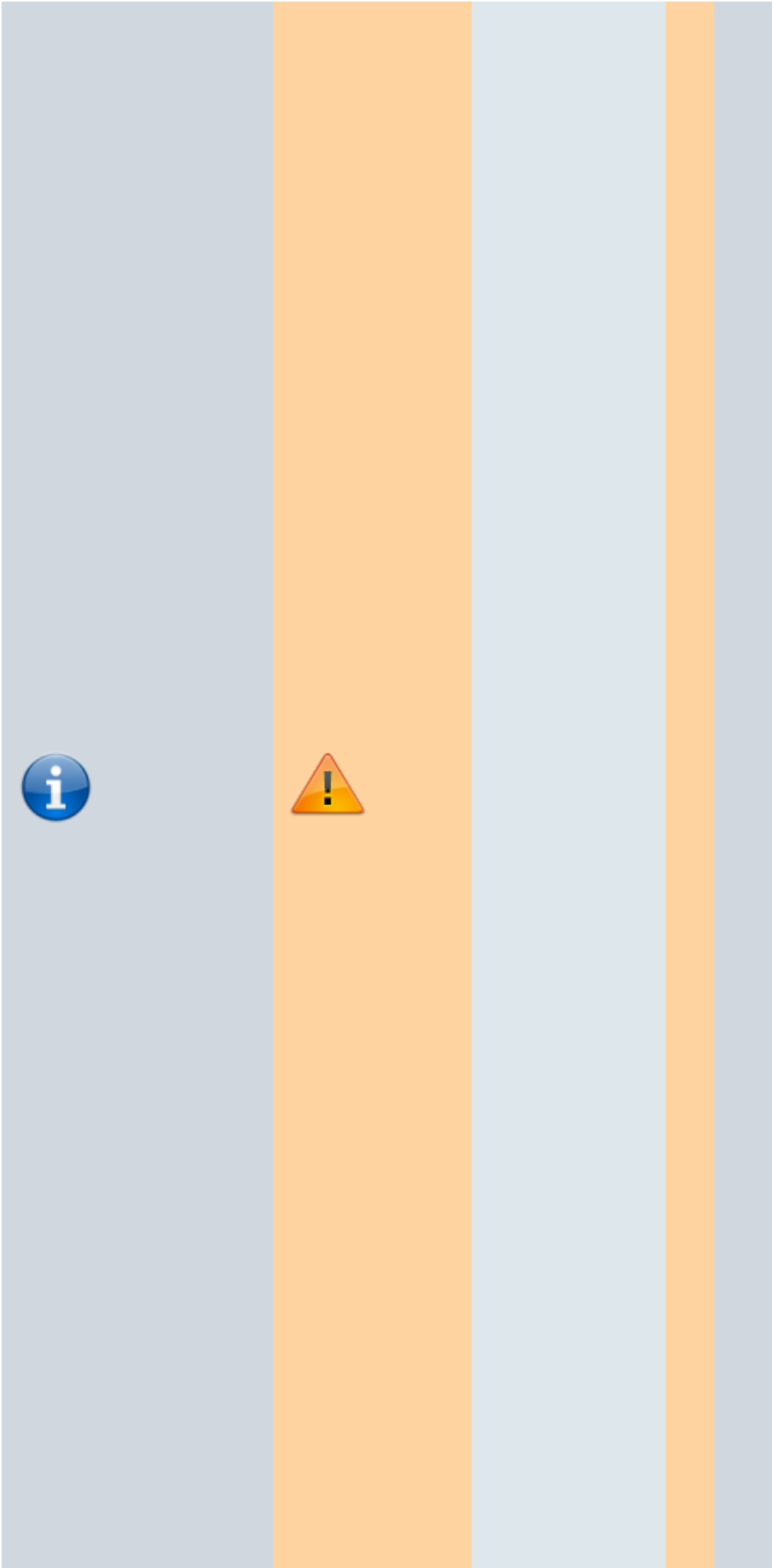
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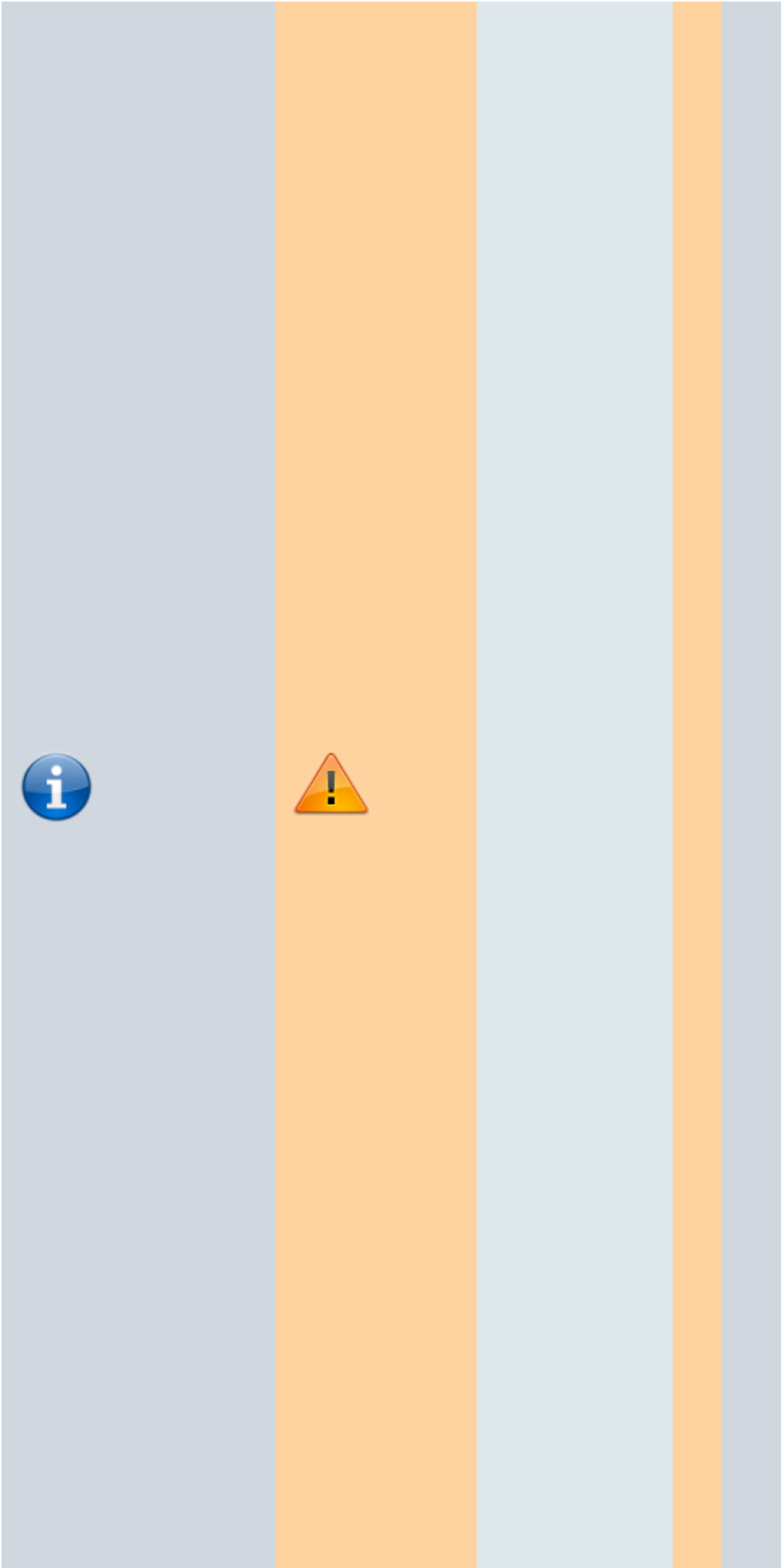
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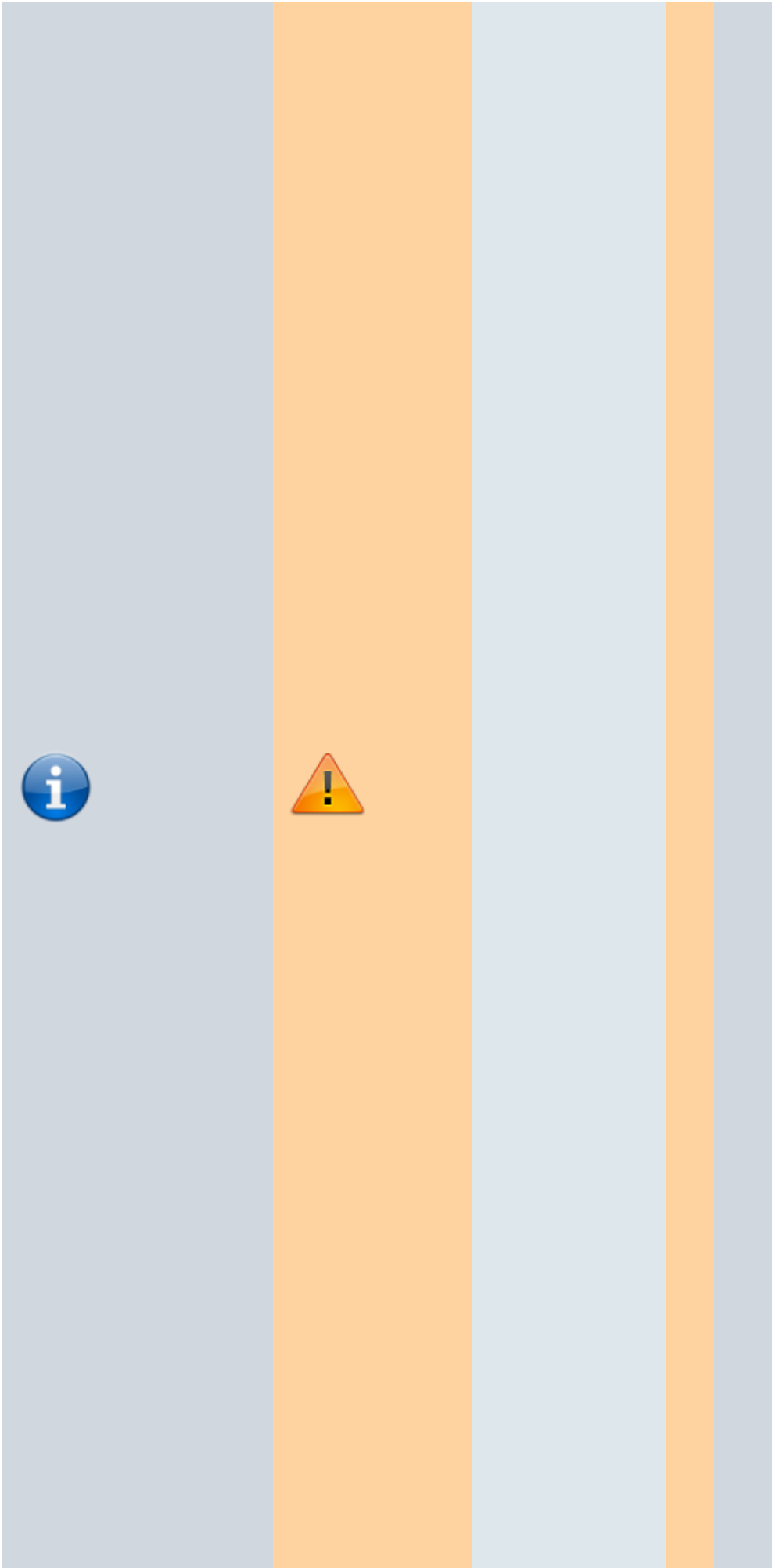
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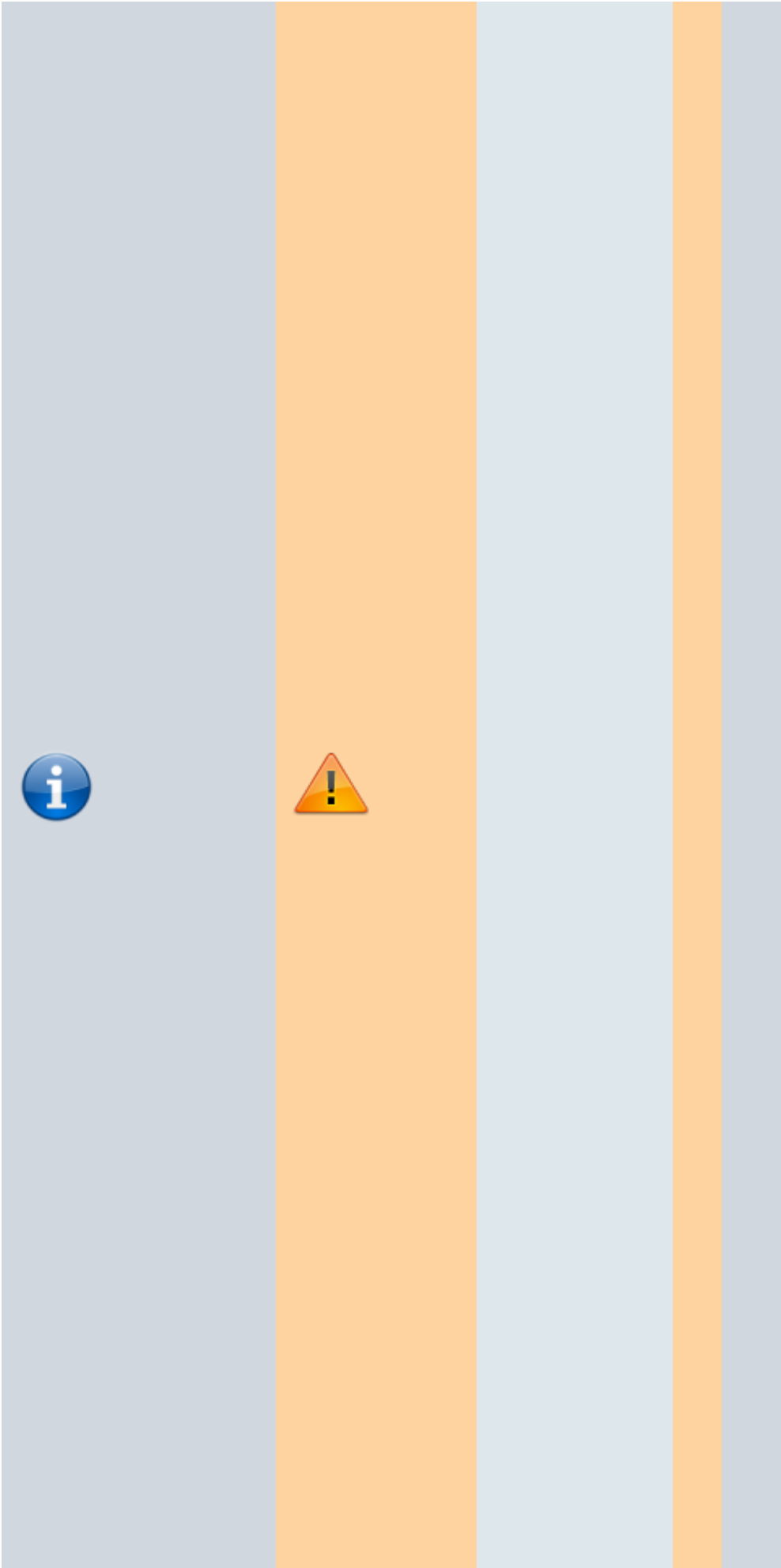
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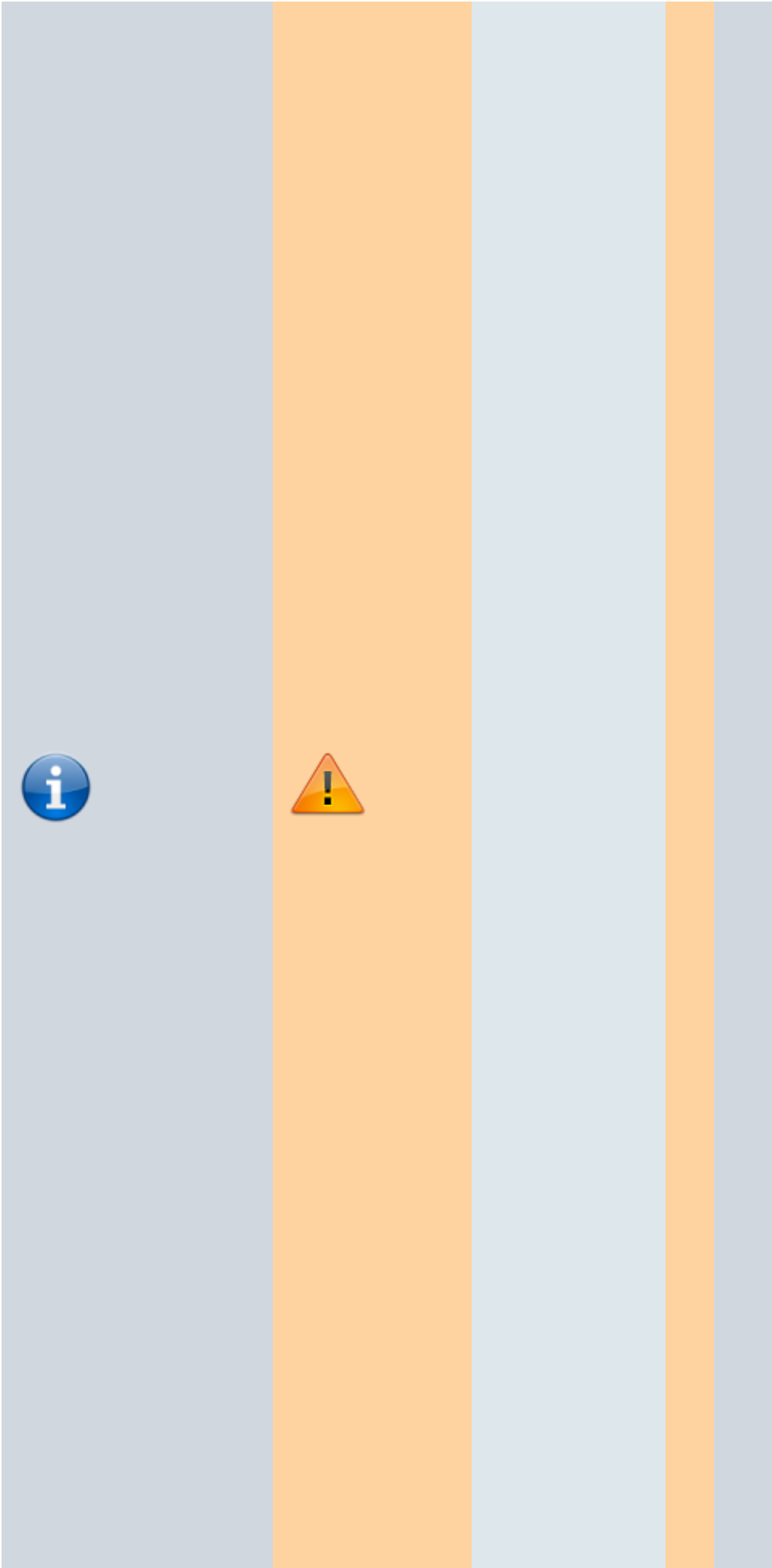
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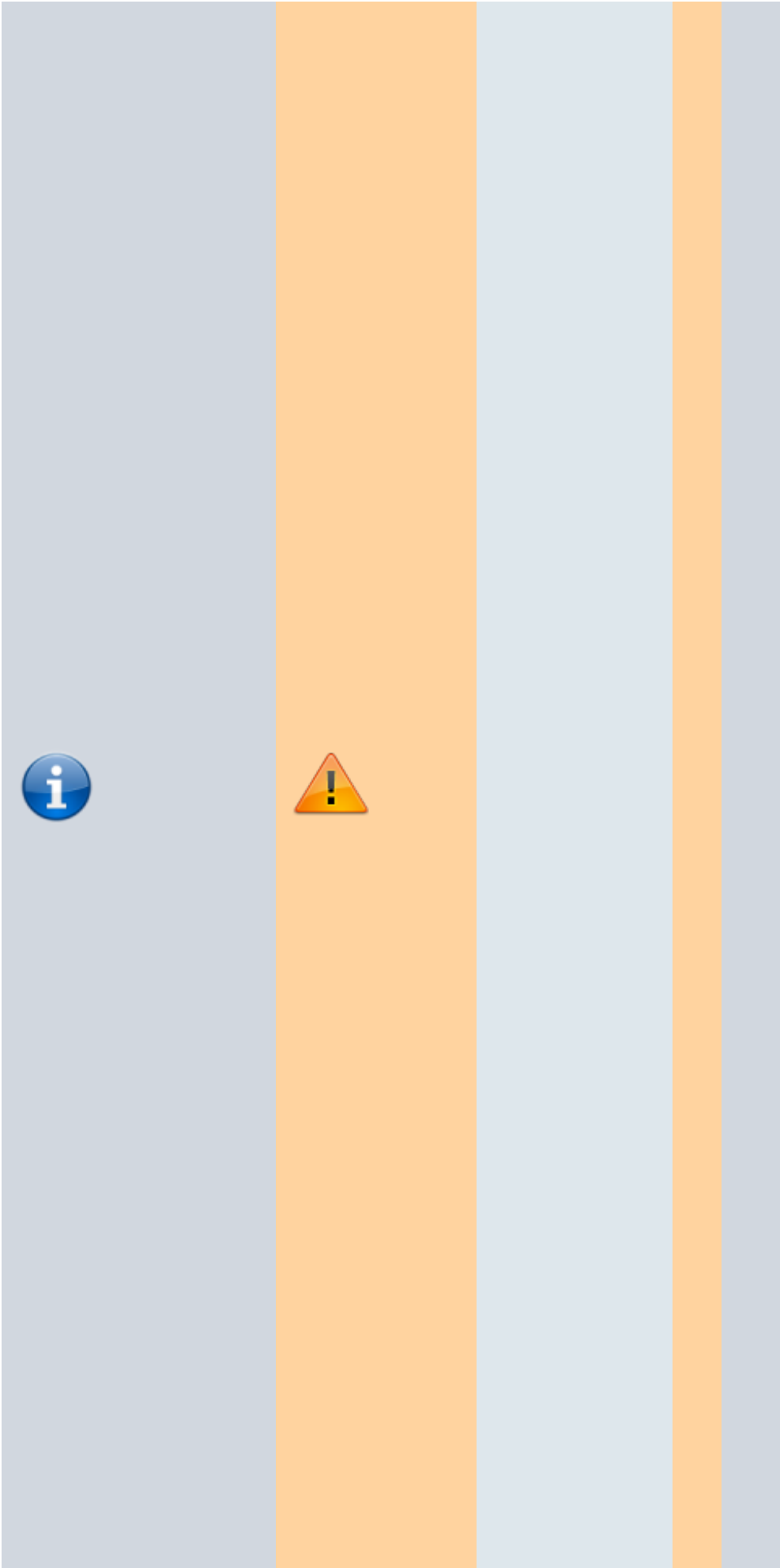
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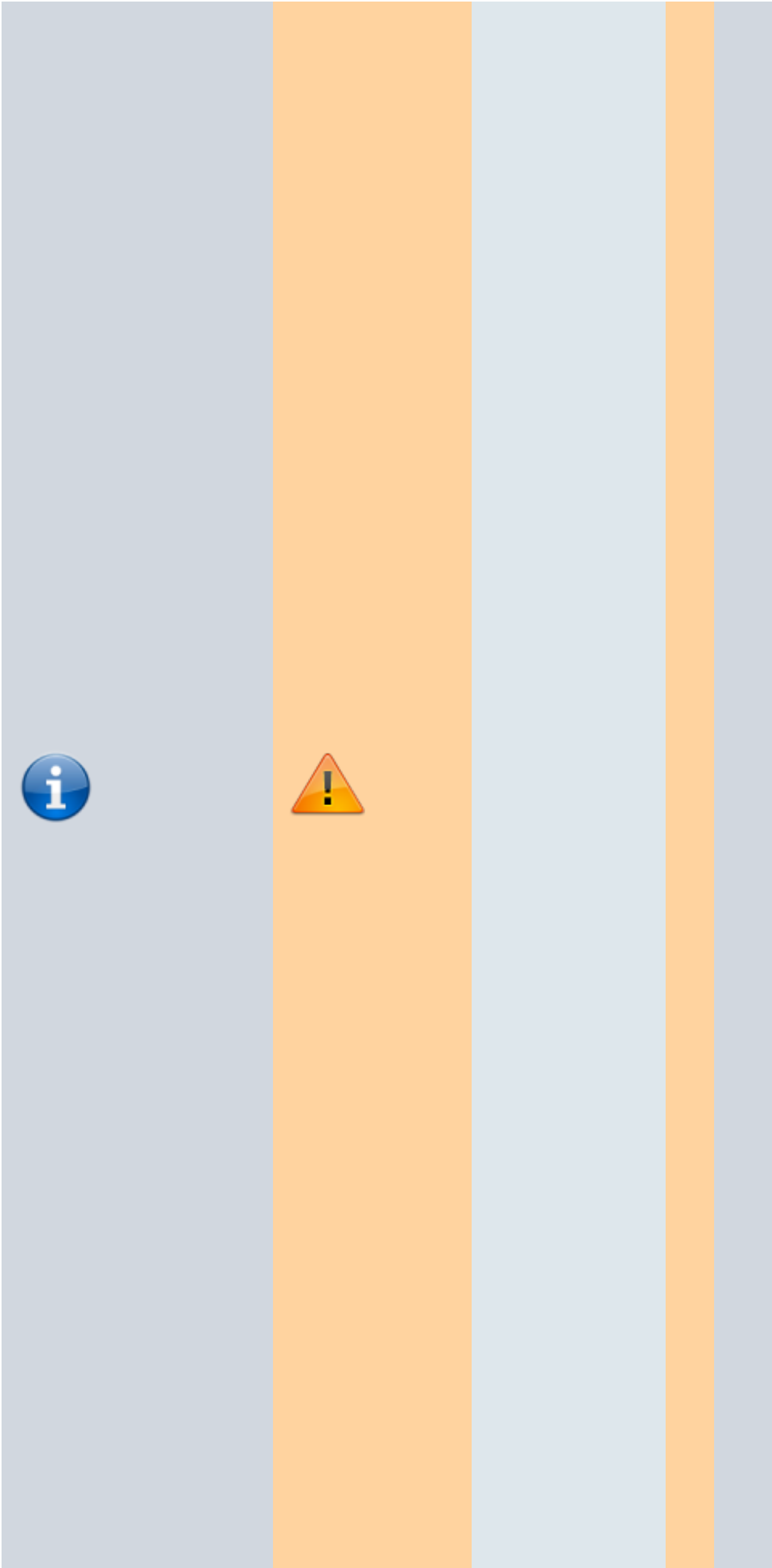
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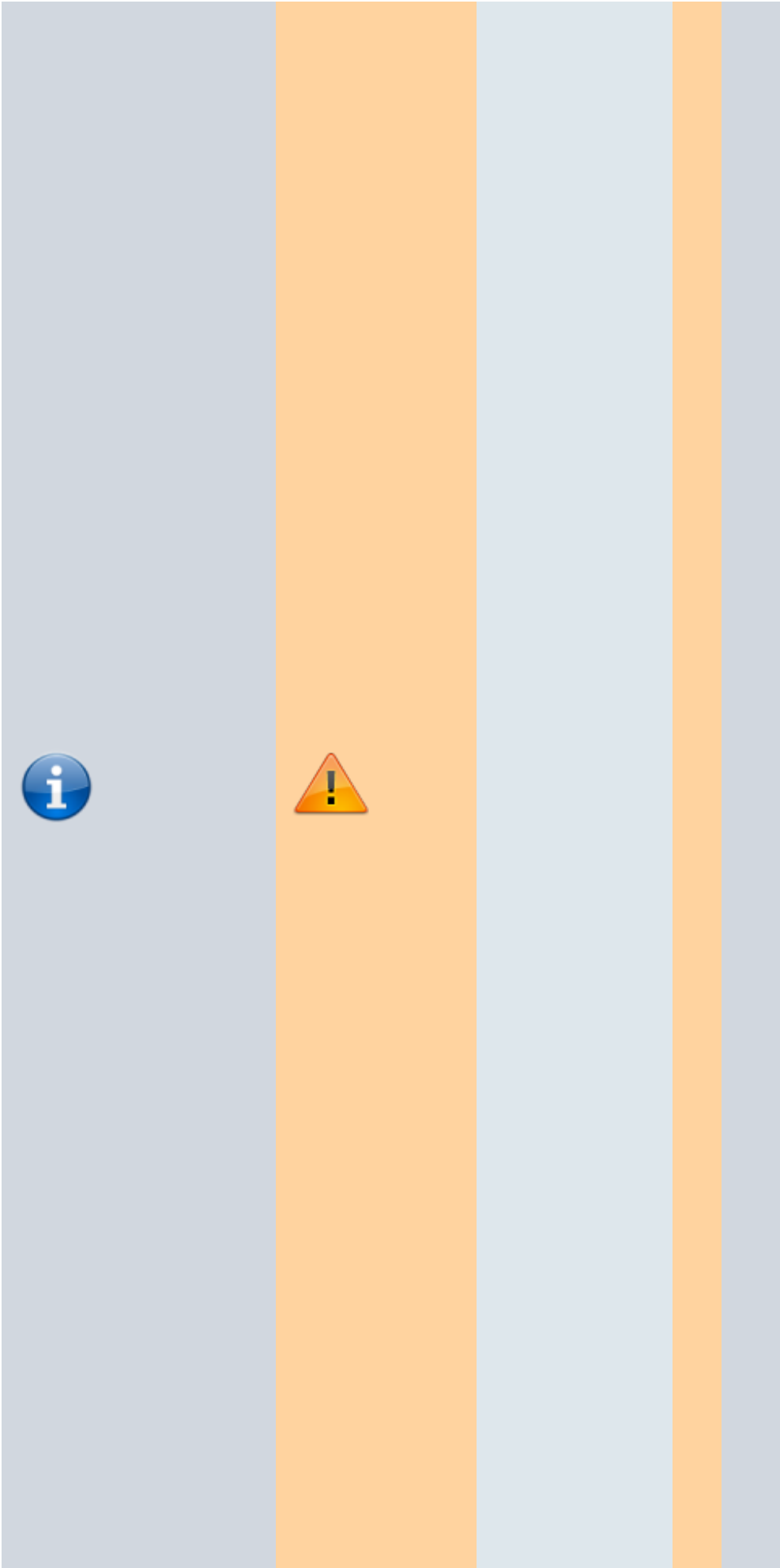
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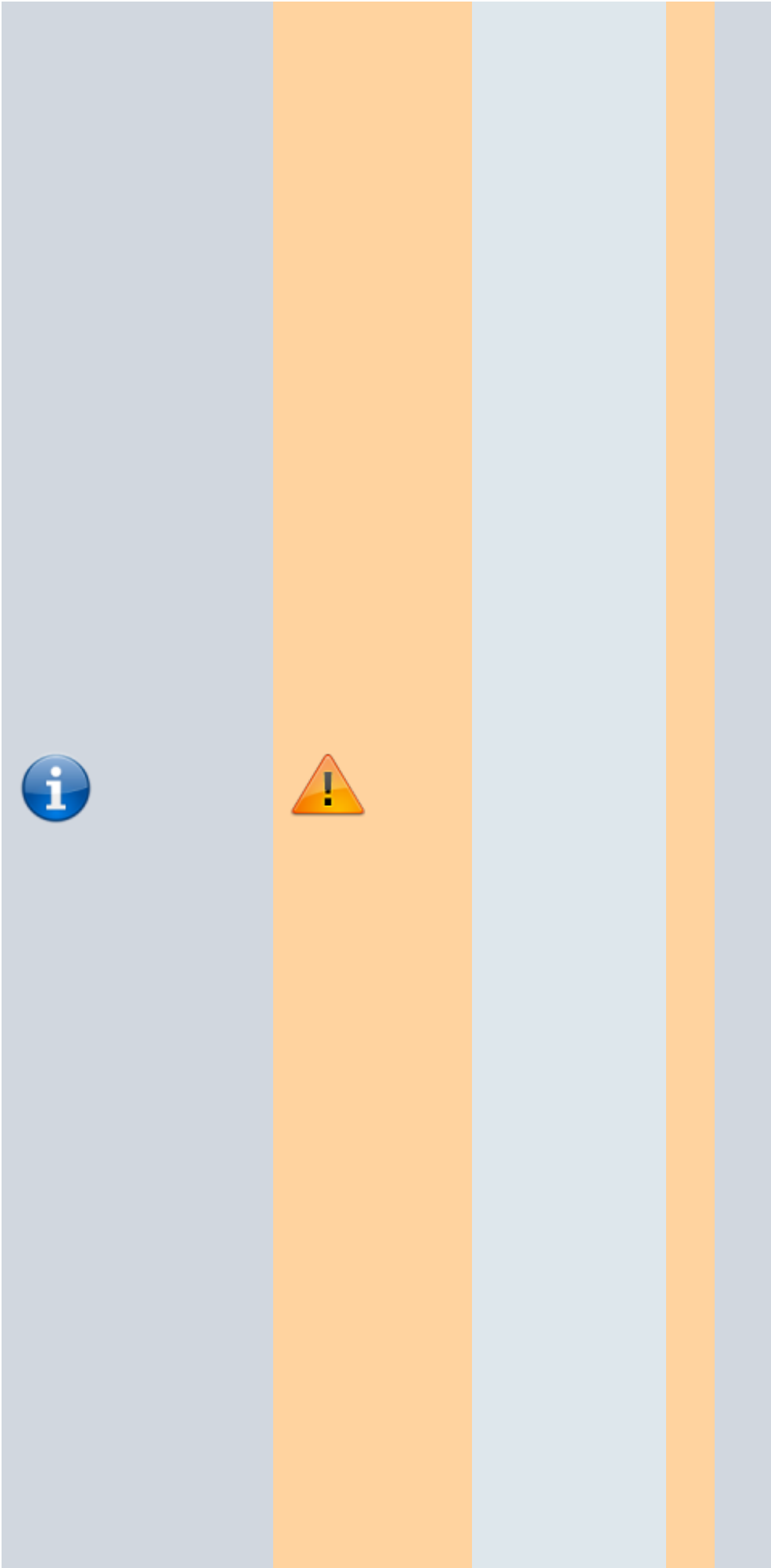
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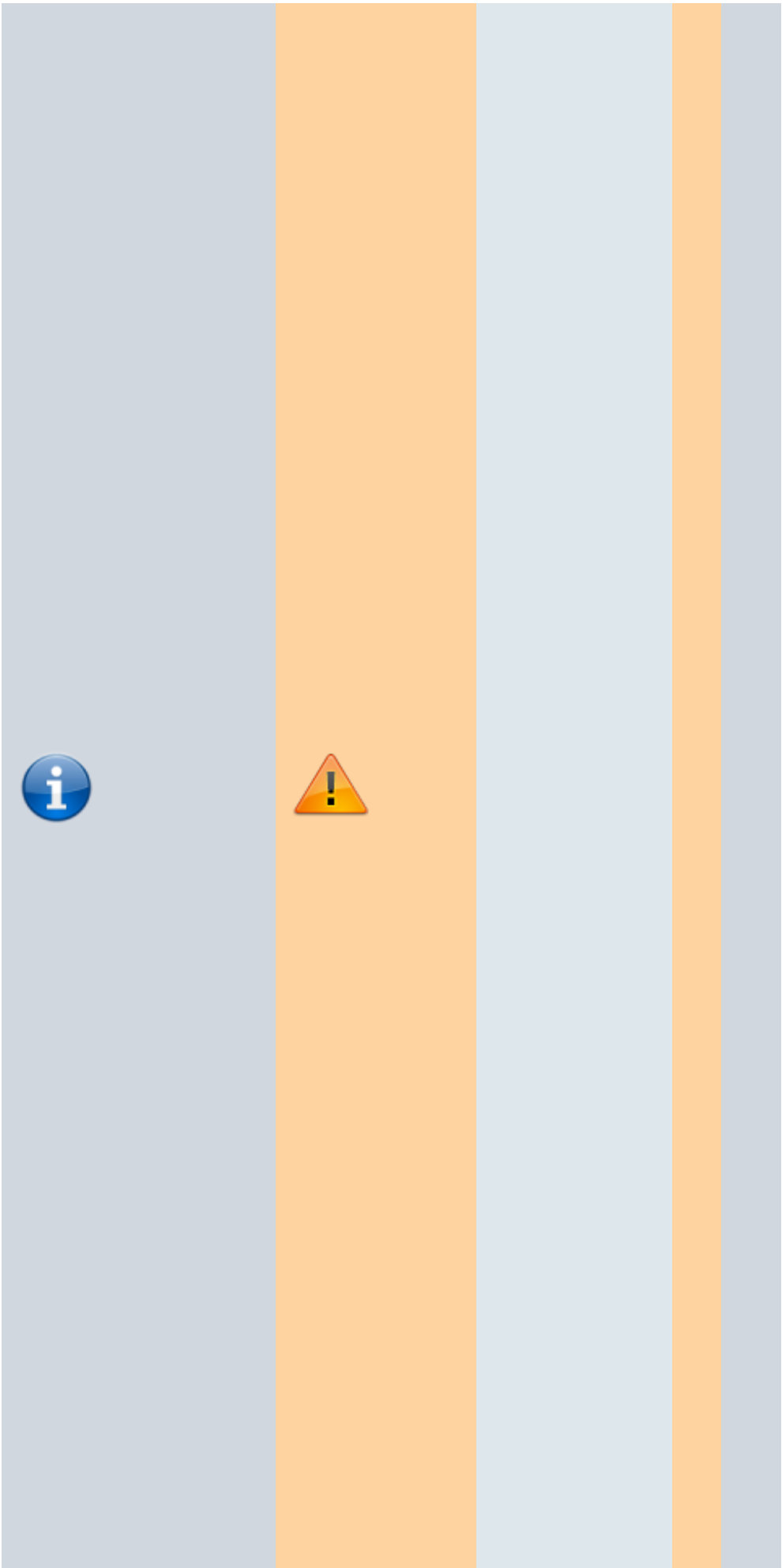


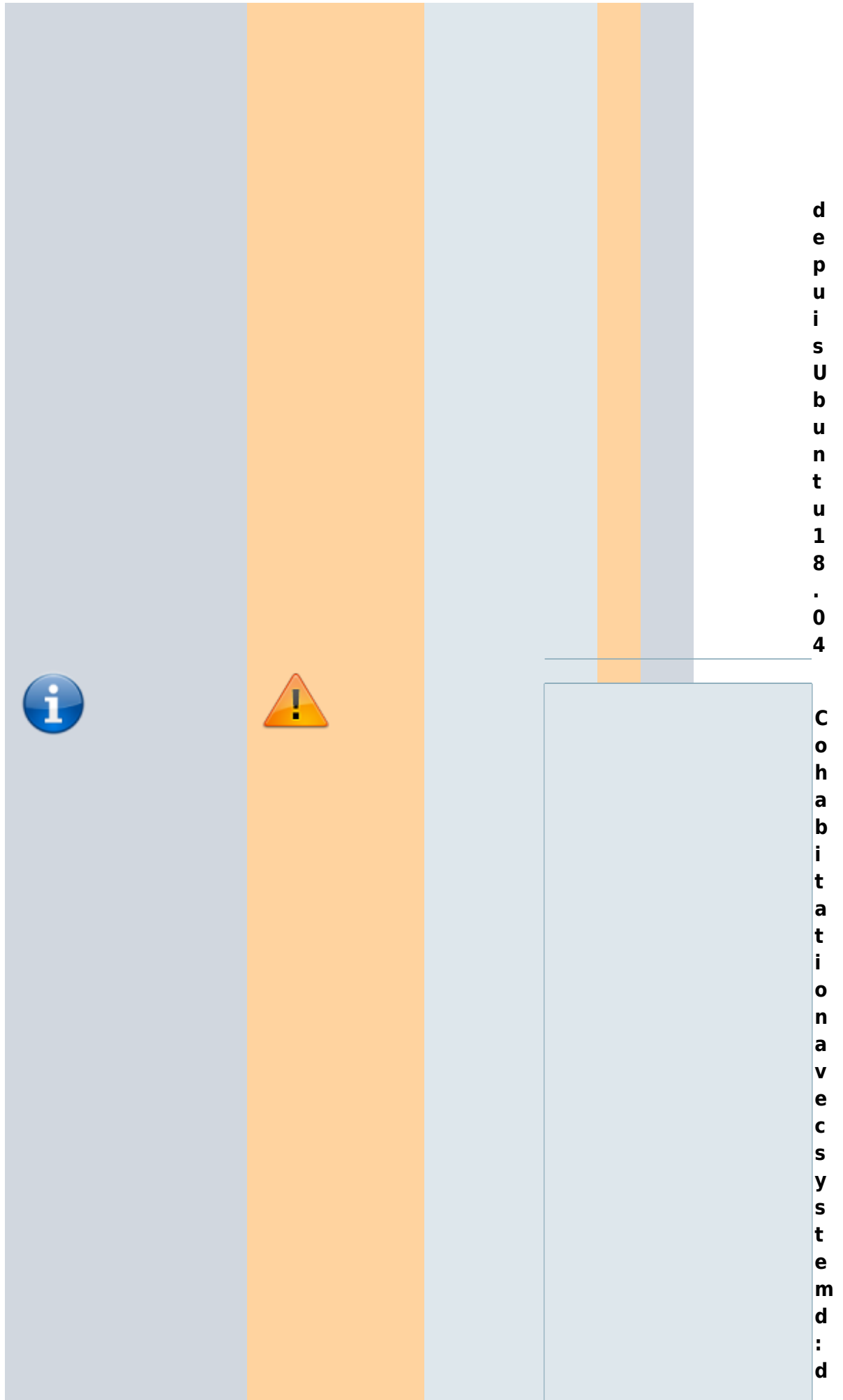
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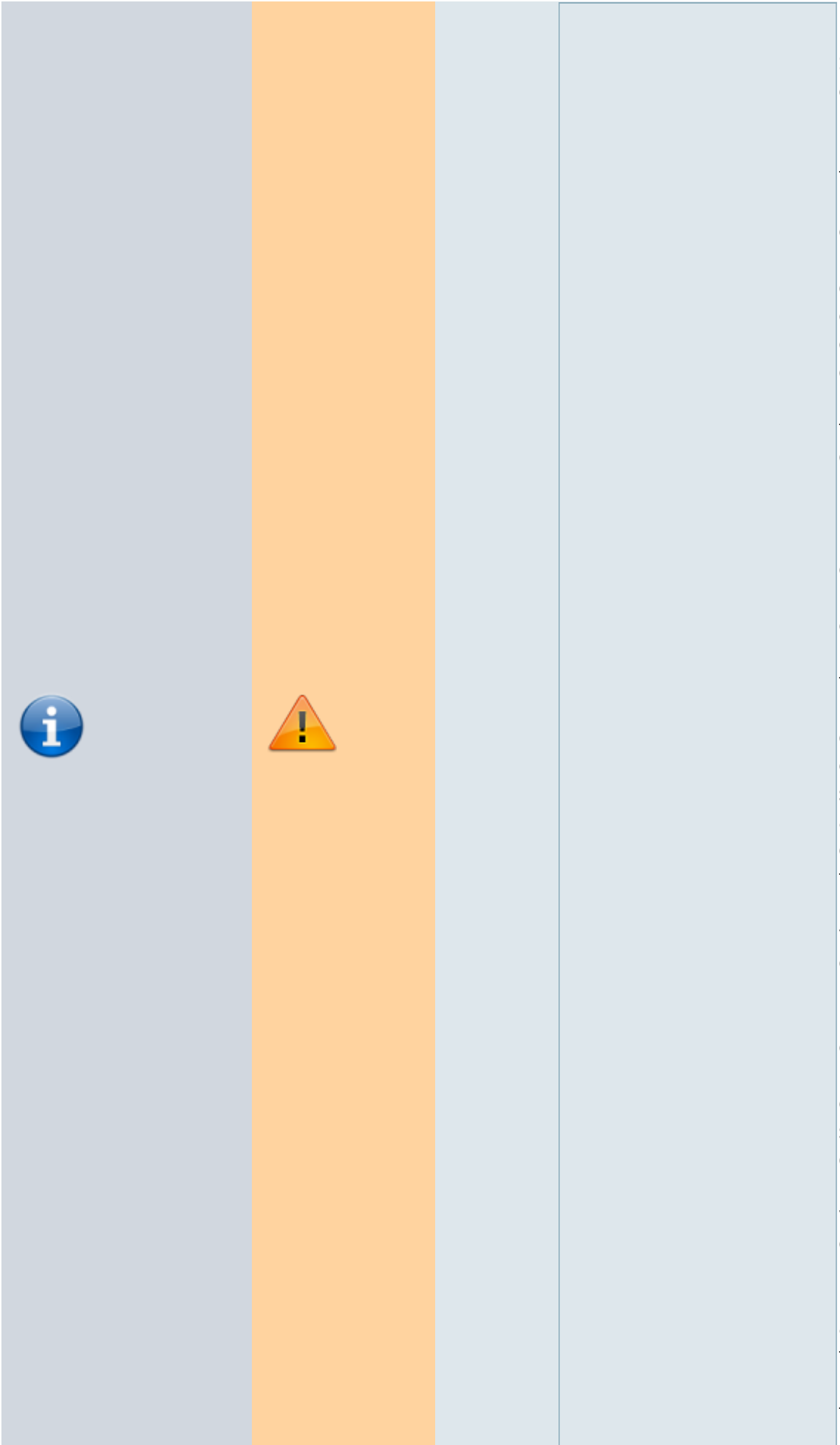
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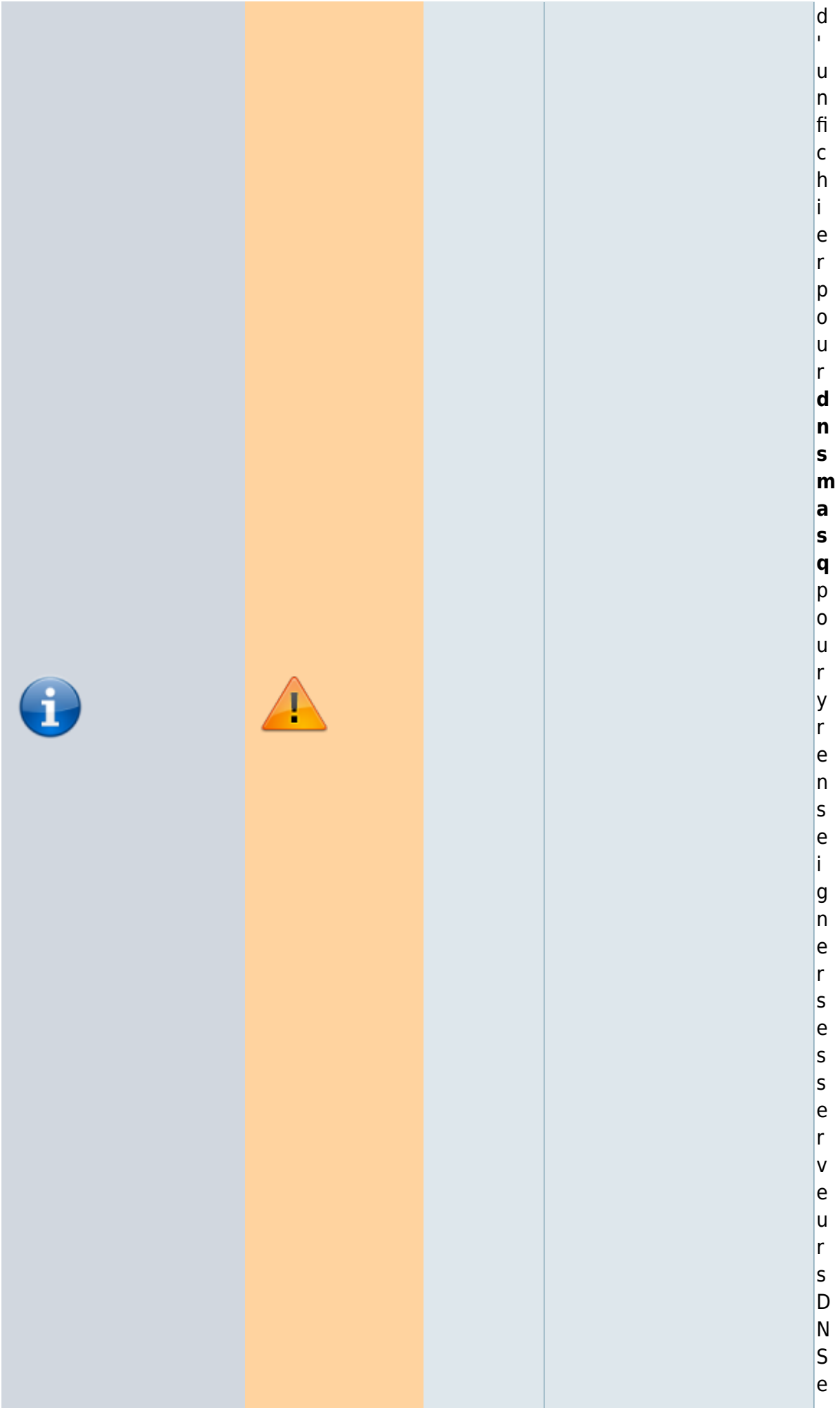


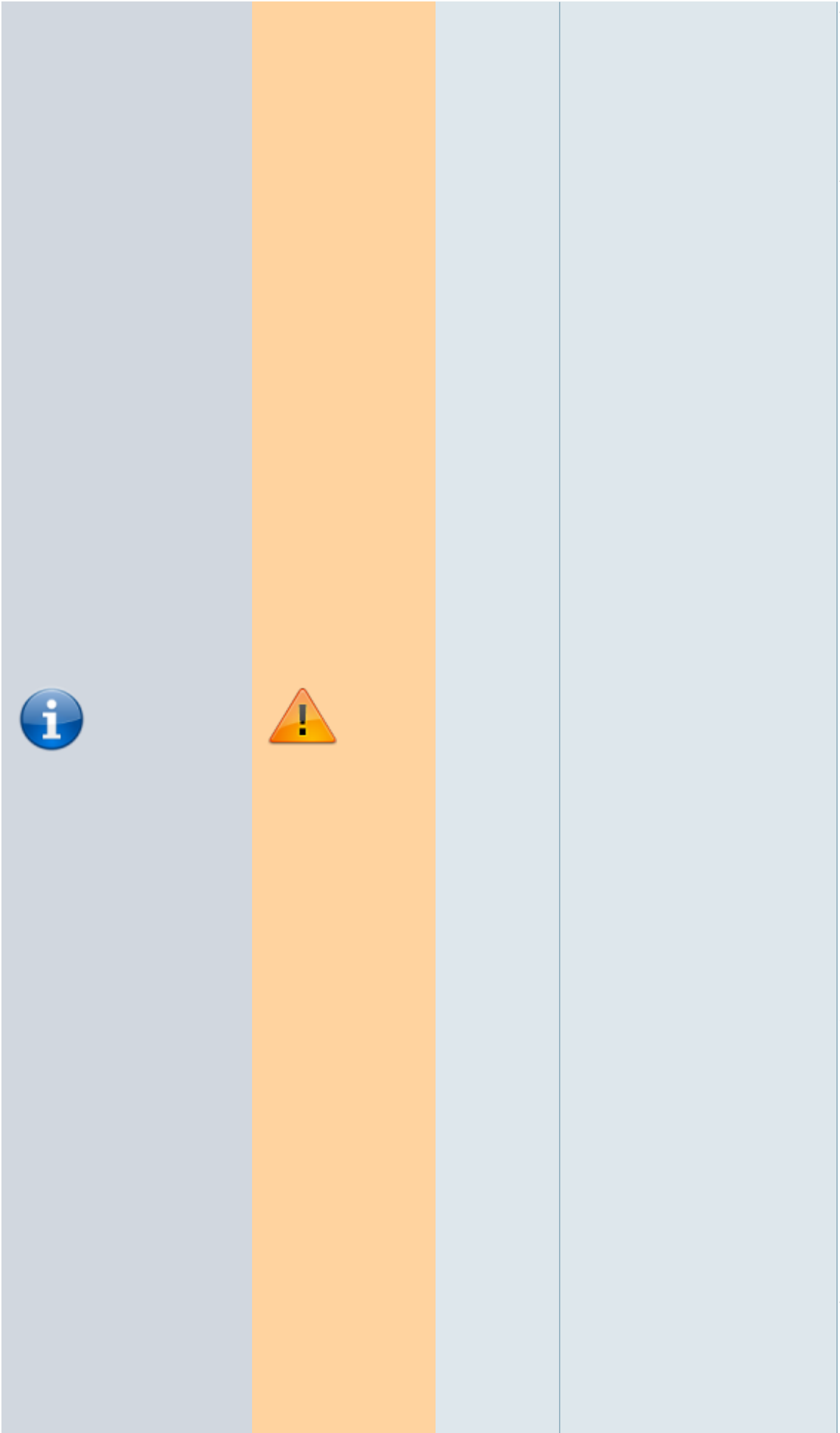
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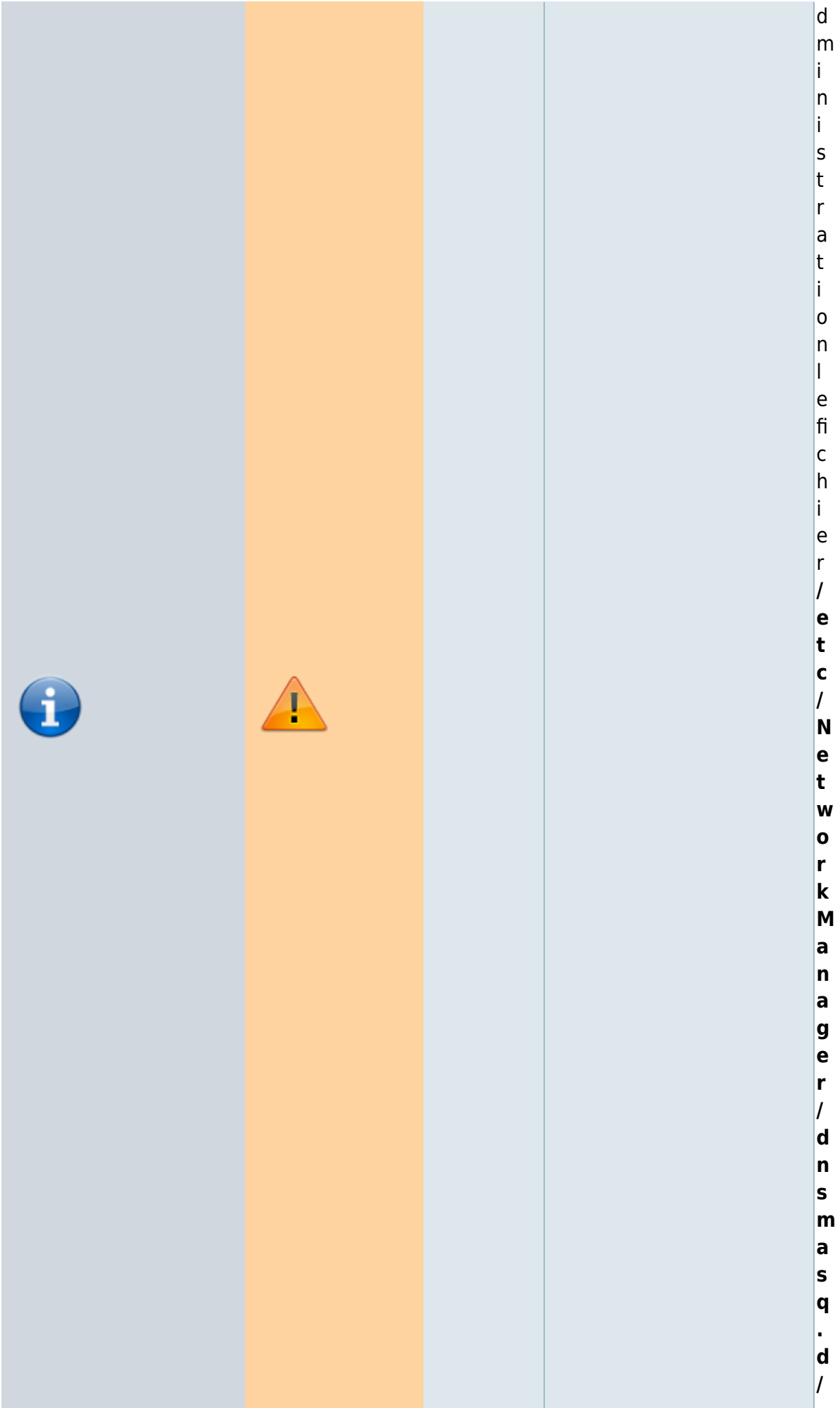


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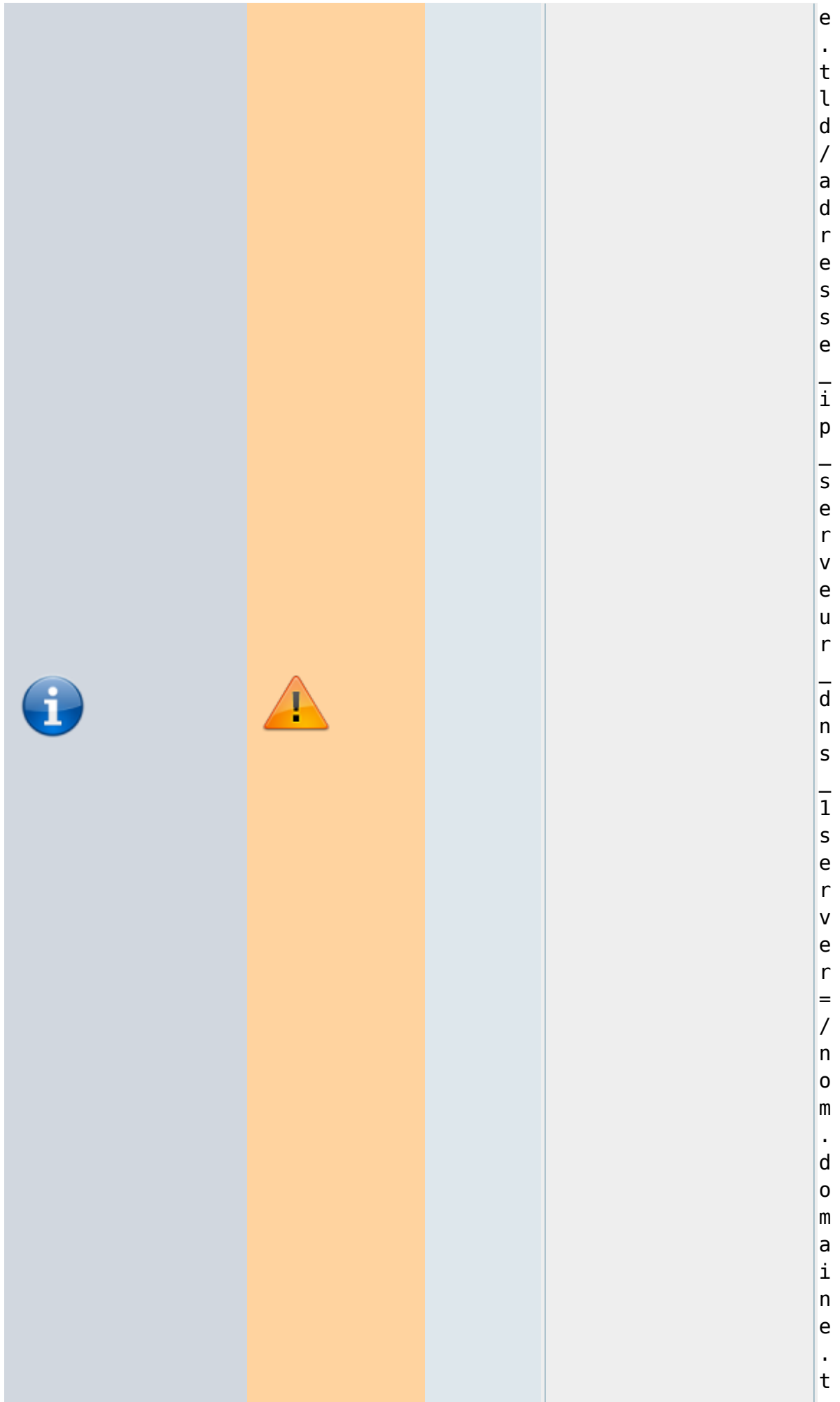






The graphic consists of a light blue background with a central vertical orange bar. On the left side of the blue area, there is a blue circular icon with a white lowercase letter 'i'. On the orange bar, there is a yellow triangular warning icon with a black exclamation mark. On the right side of the blue area, there is a vertical line of text in blue, reading 'monresolv.com pour y accéder : /etc/NetworkManager/dns'

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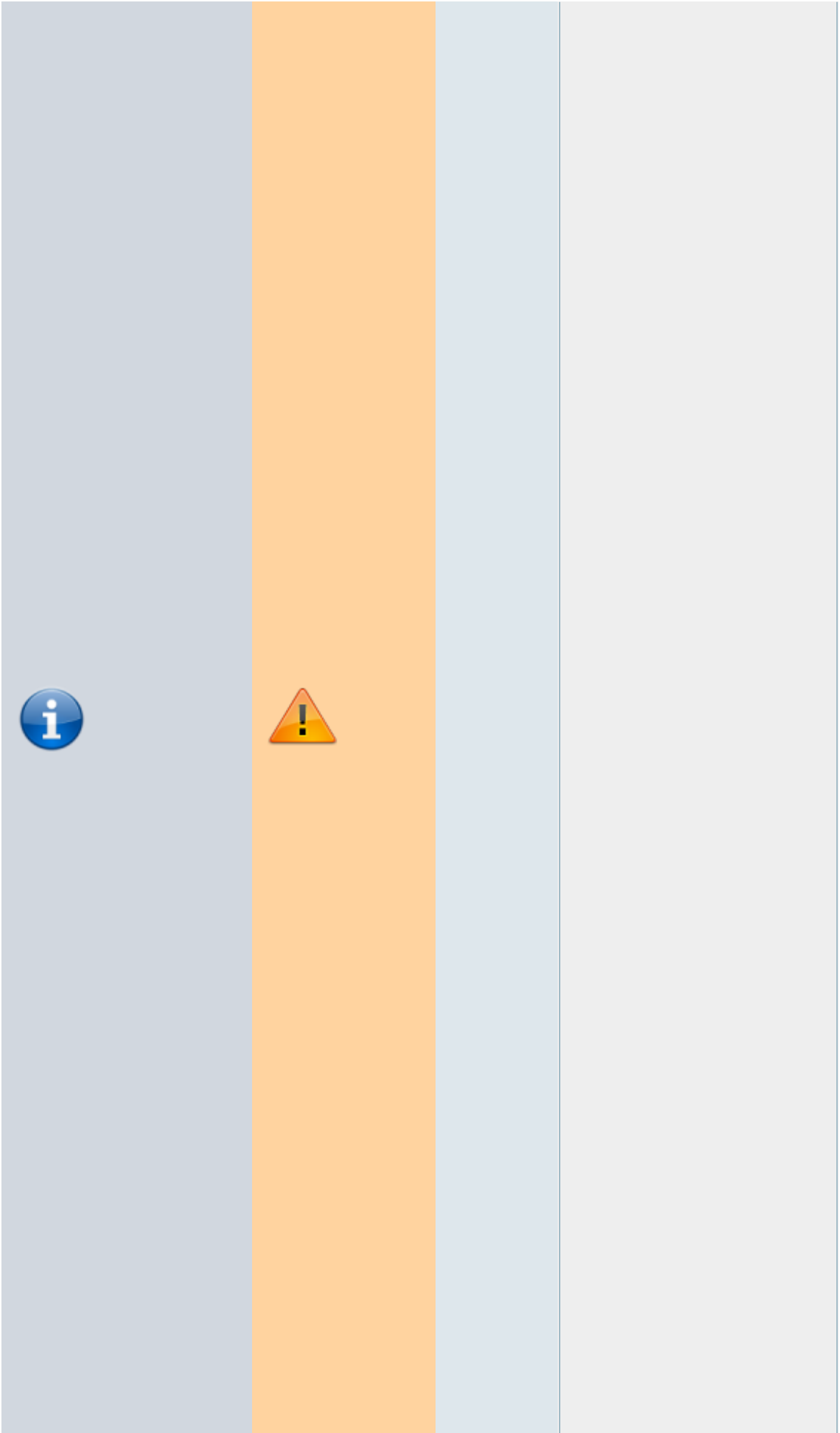
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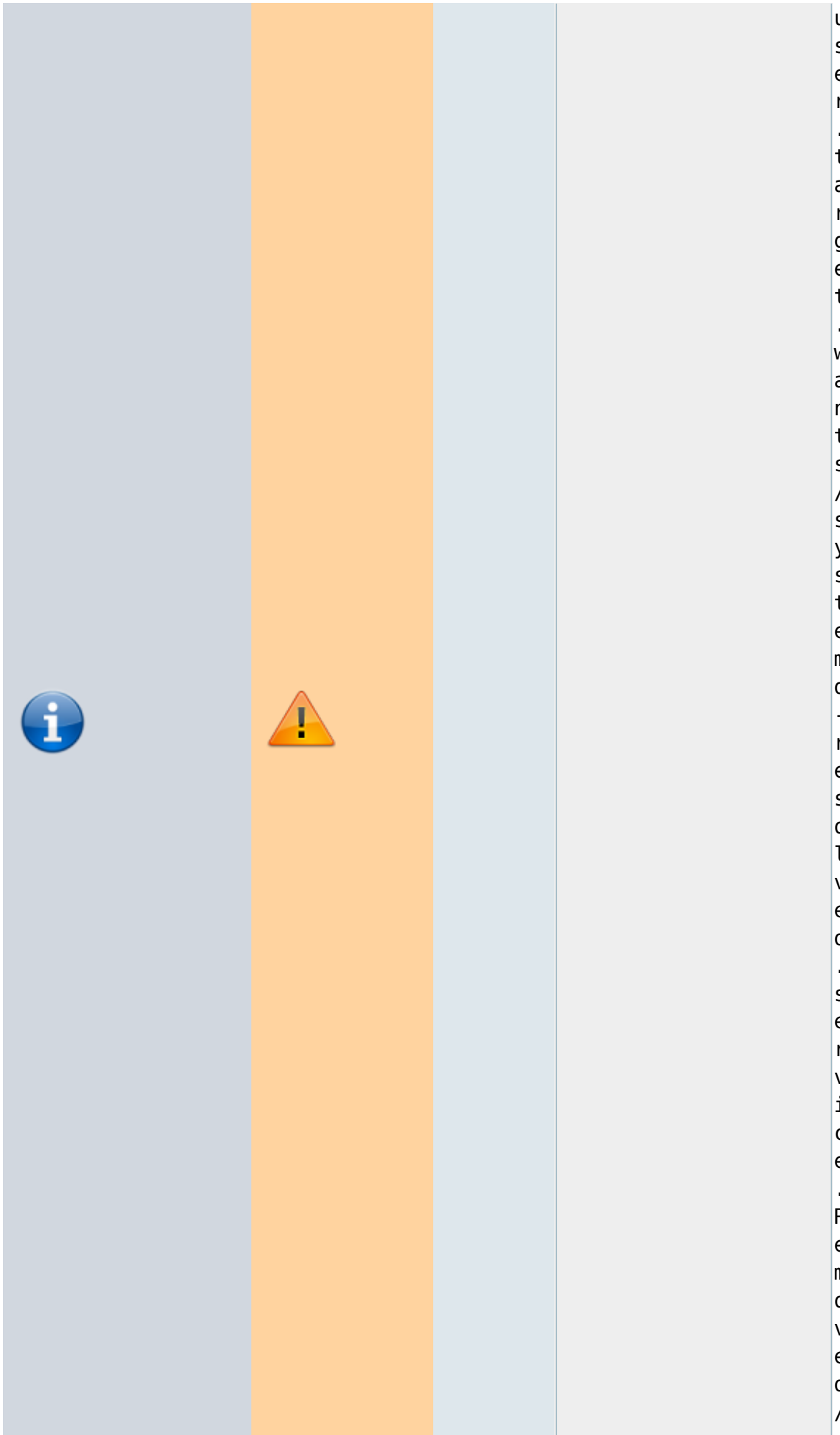
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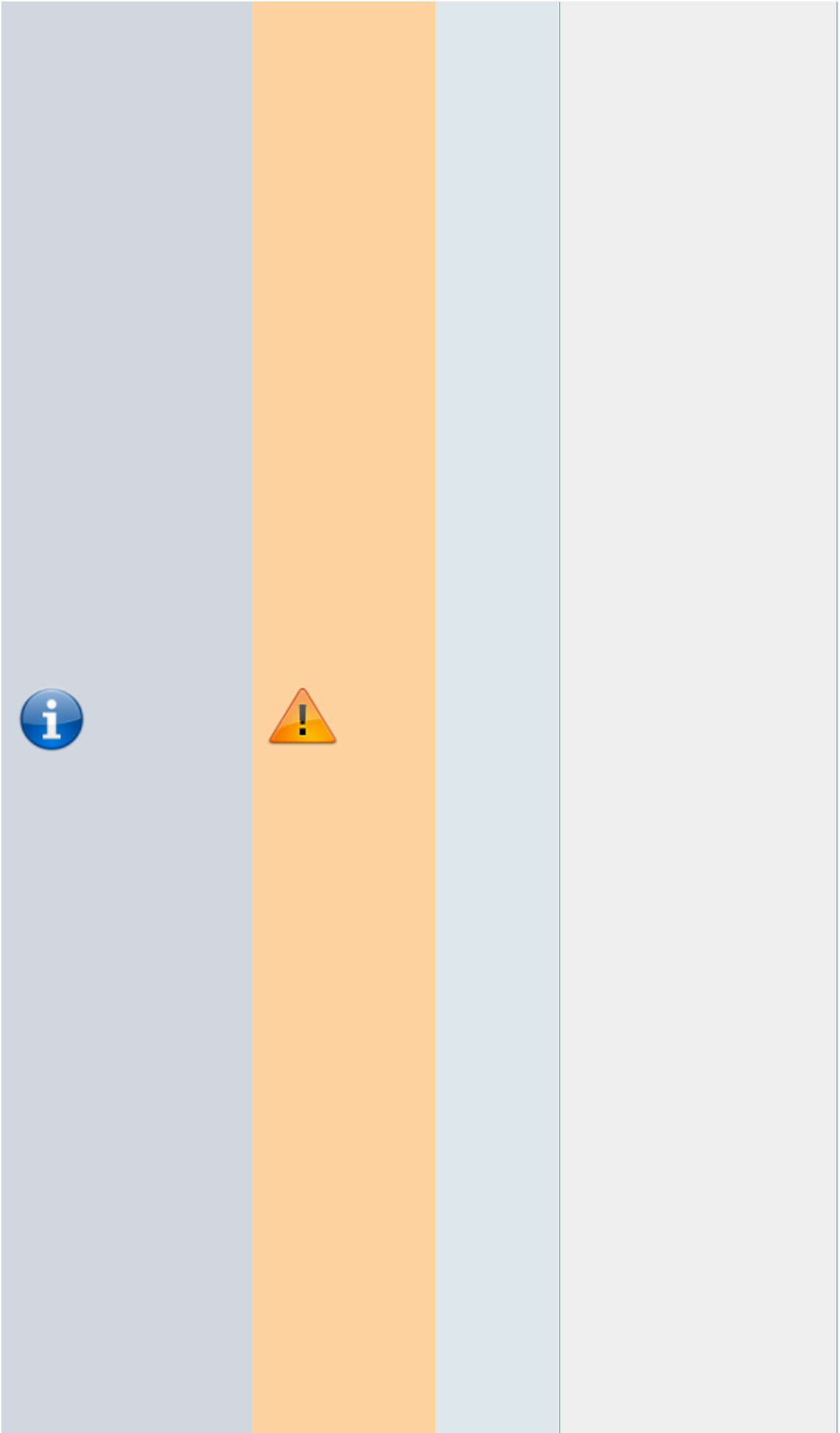
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			<p>c e s y s t e m d - r e s o l v e d : \$ s u d o s y s t e m c t l d i s a b l e s y s t e m d - r e</p>
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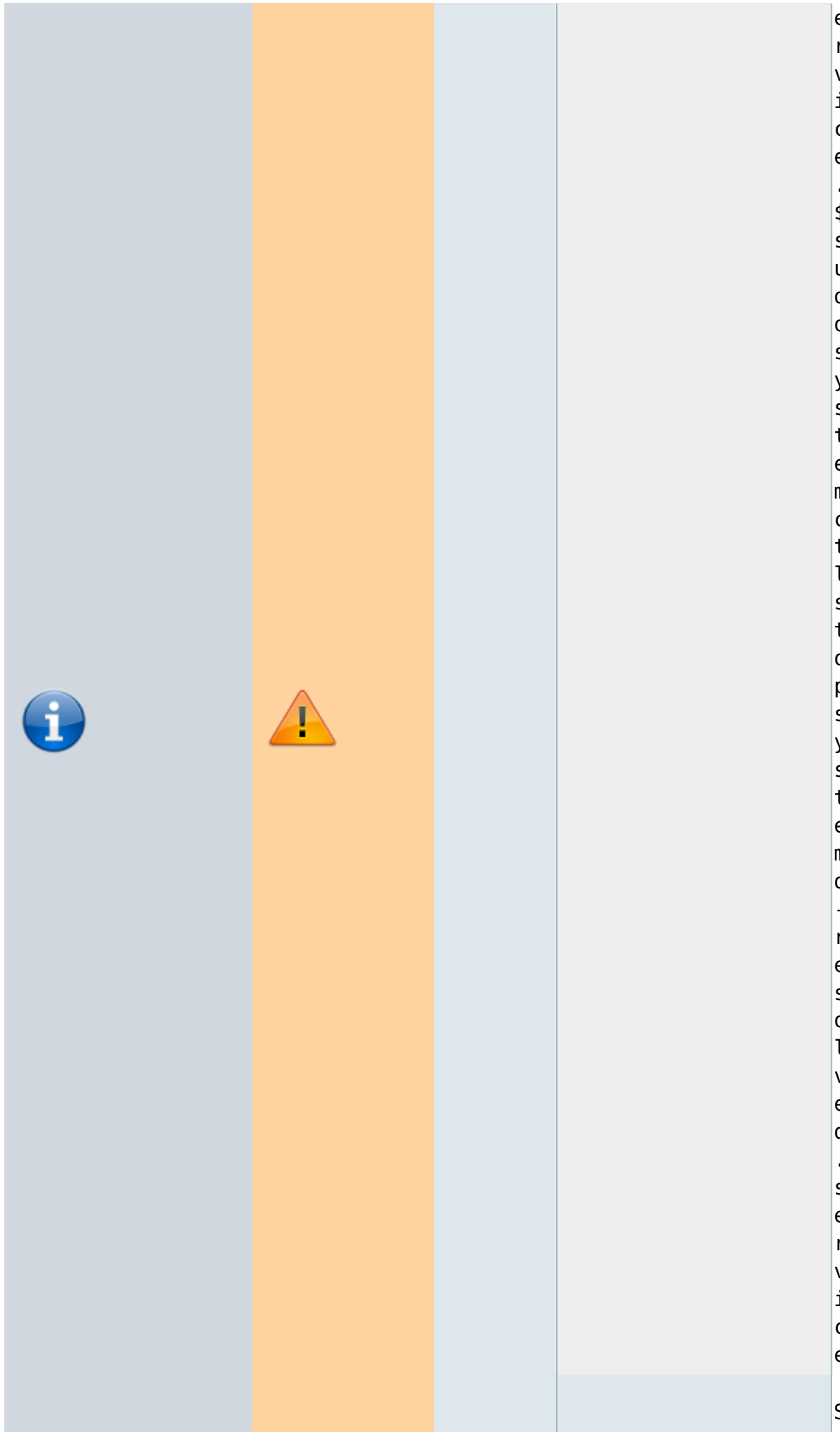
The image shows a vertical bar composed of four distinct colored sections. From left to right: a light blue section containing a blue circular information icon with a white lowercase 'i'; an orange section containing a yellow triangular warning icon with a black exclamation mark; another light blue section; and a light grey section containing vertical text. The text in the grey section reads: 'S O L V E D . S E R V I C E . . . R e m o v e d / e t c / s y s t e m d / s y s t e m / m u l t i -'.







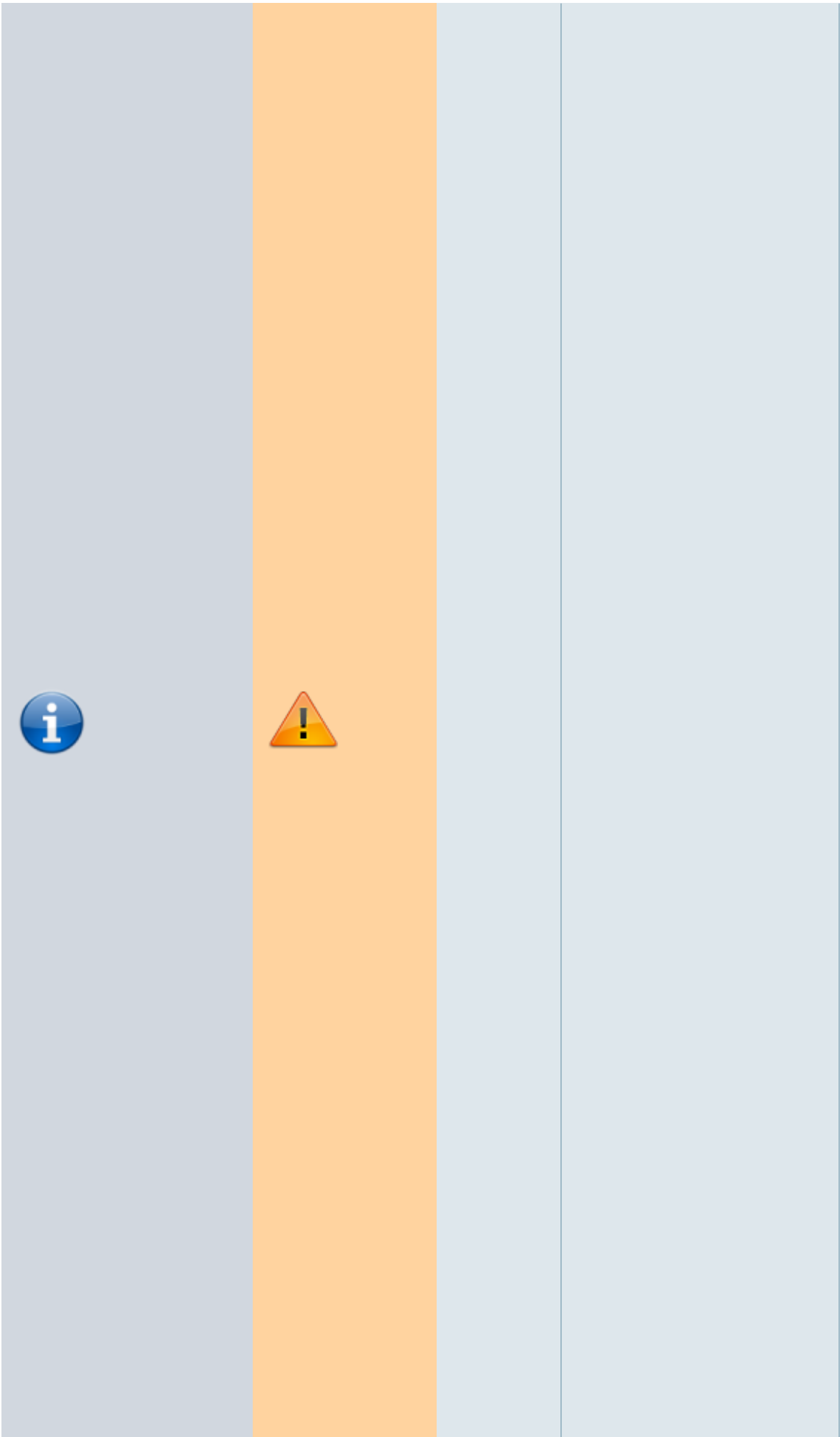
The image shows a vertical bar composed of four distinct colored sections. From left to right, the colors are light blue, orange, light blue, and light grey. The orange section is the central focus and contains a yellow warning triangle icon with a black exclamation mark. To the left of the orange section, within the first light blue section, is a blue circular icon with a white lowercase letter 'i', representing information. The light grey section on the far right is mostly empty, with some faint, vertically aligned text visible along its right edge.

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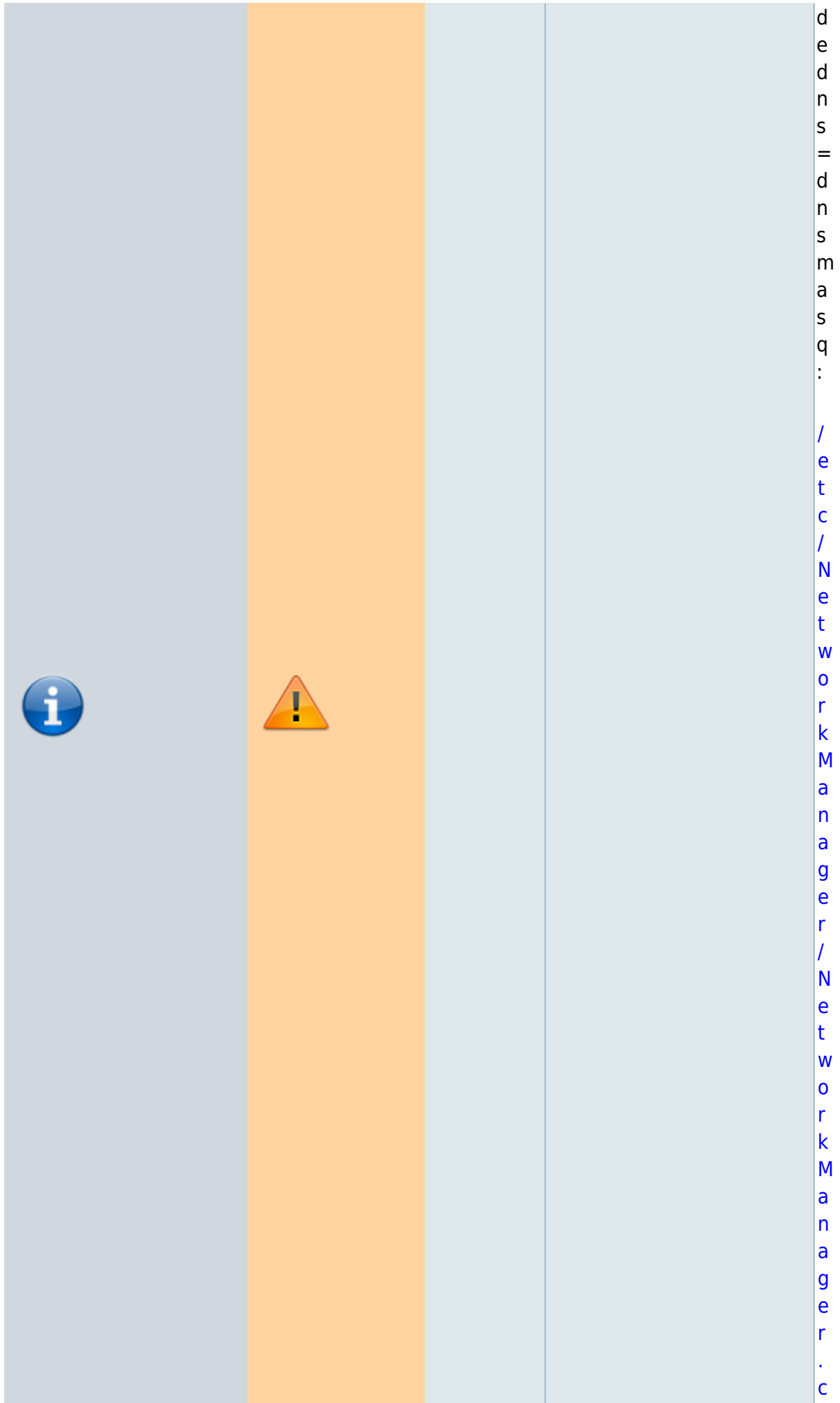
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The image shows a large rectangular area with a light blue background. A vertical orange stripe runs through the center. On the left side of the light blue area, there is a blue circular icon with a white lowercase letter 'i'. On the orange stripe, there is a yellow triangular warning icon with a black exclamation mark.



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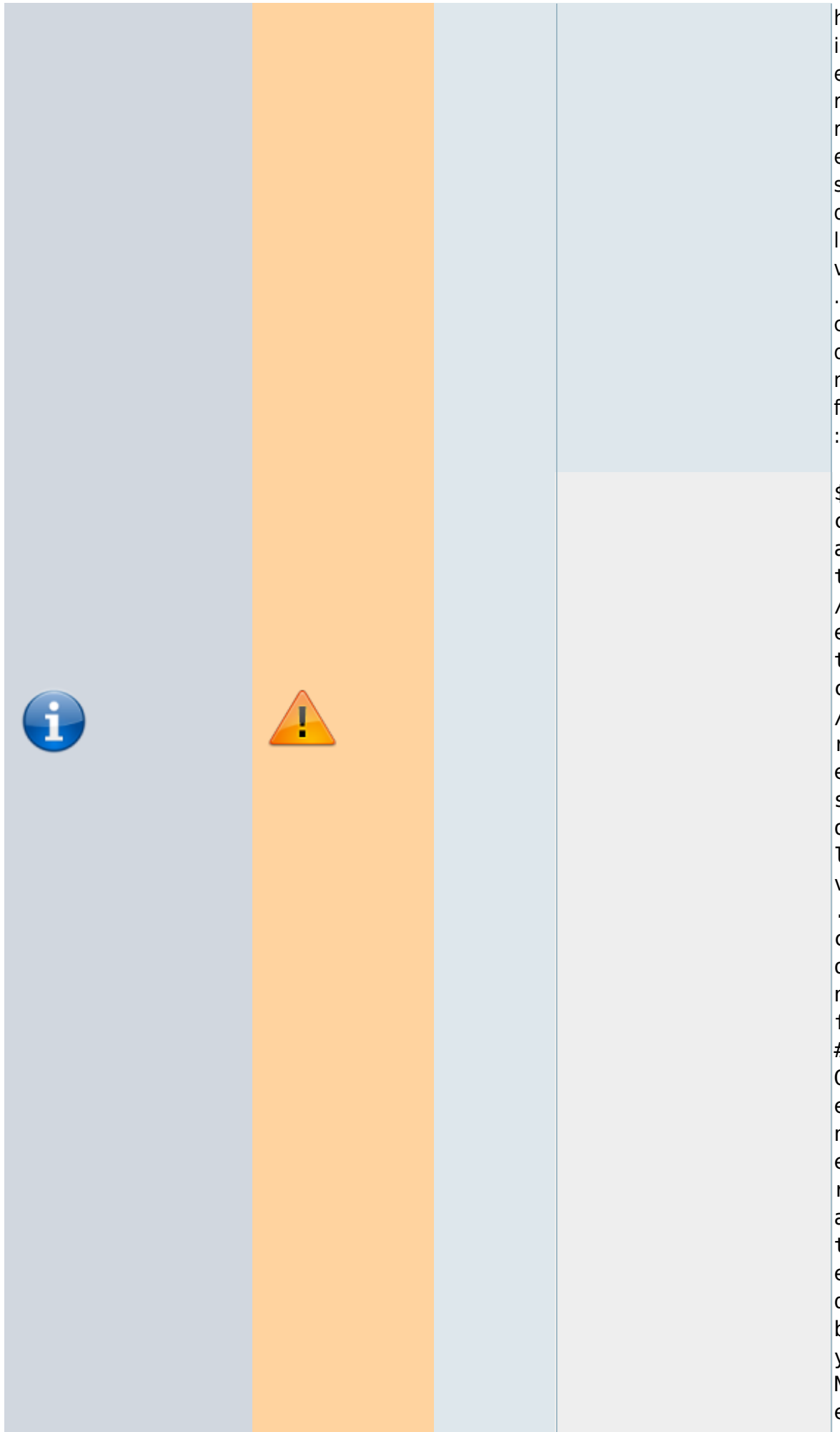
			
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The banner consists of four vertical sections of different colors. From left to right: a light blue section with a blue information icon (a lowercase 'i' in a circle); an orange section with a yellow warning icon (a triangle with an exclamation mark); another light blue section; and a light grey section containing a vertical list of characters: 'a', 'n', 'c', 'é', ':', '\$', 's', 'u', 'd', 'o', 'p', 's', '-', 'e', 'f', 'l', 'g', 'r', 'e', 'p', 'd', 'n', 's', 'm', 'a', 's', 'q', '.', '.', 'x', 'x', 'x', 'x', 'x', 'x', '1', '3', '6', '5', '4', '4', '8', '3', '1', '0', '0', '9', ':'. The characters are arranged in a single column on the right side of the grey section.

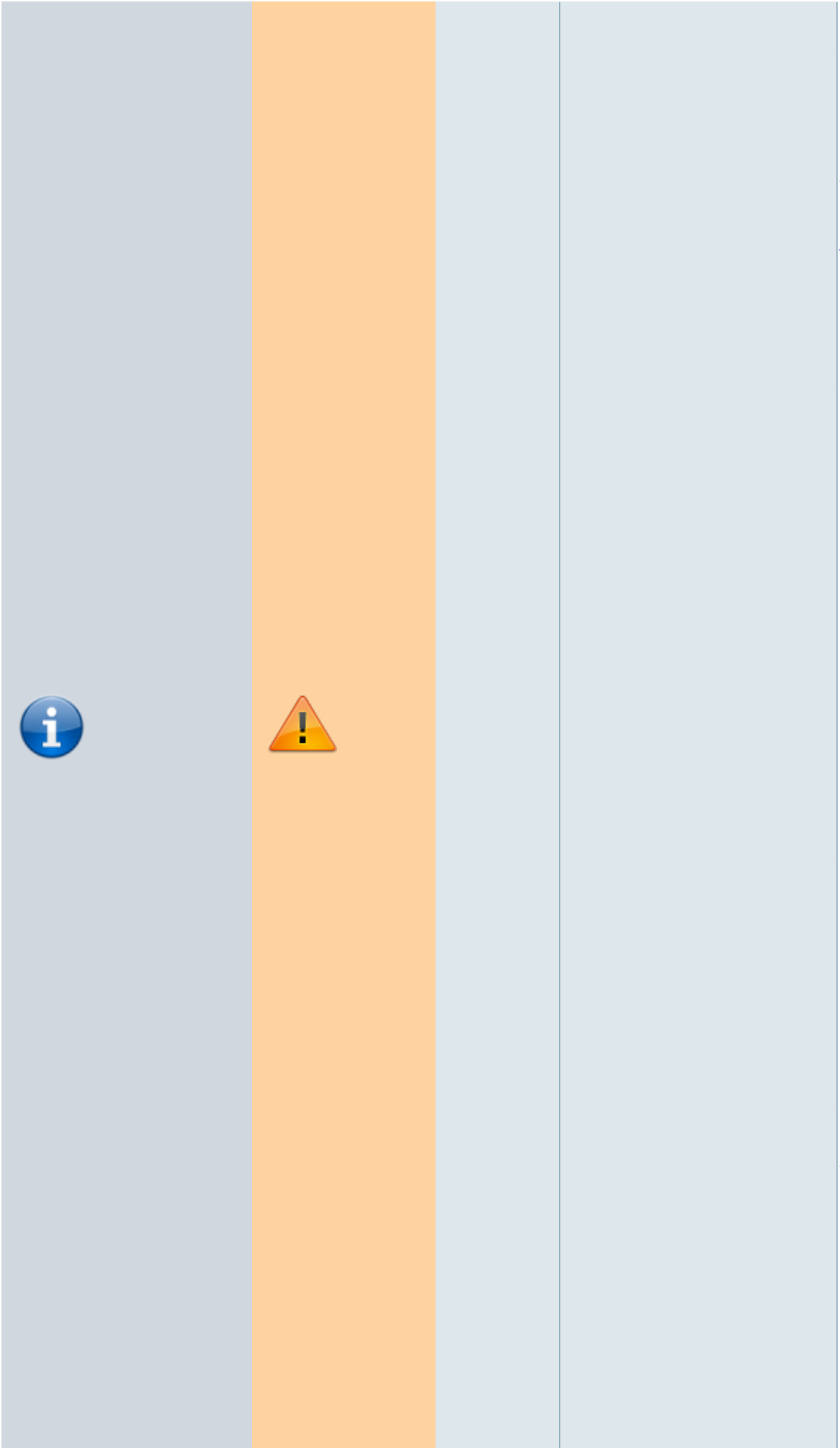
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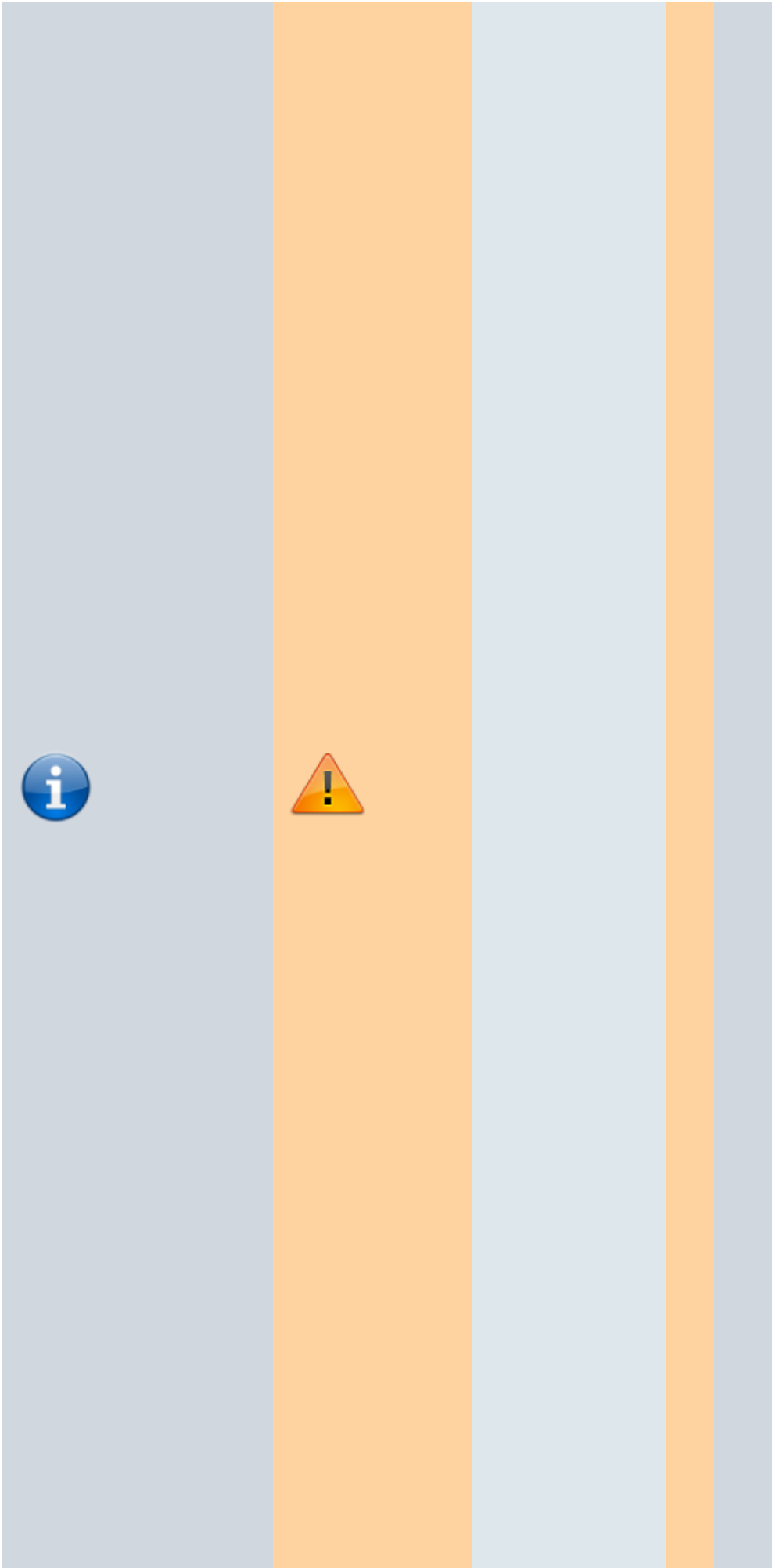


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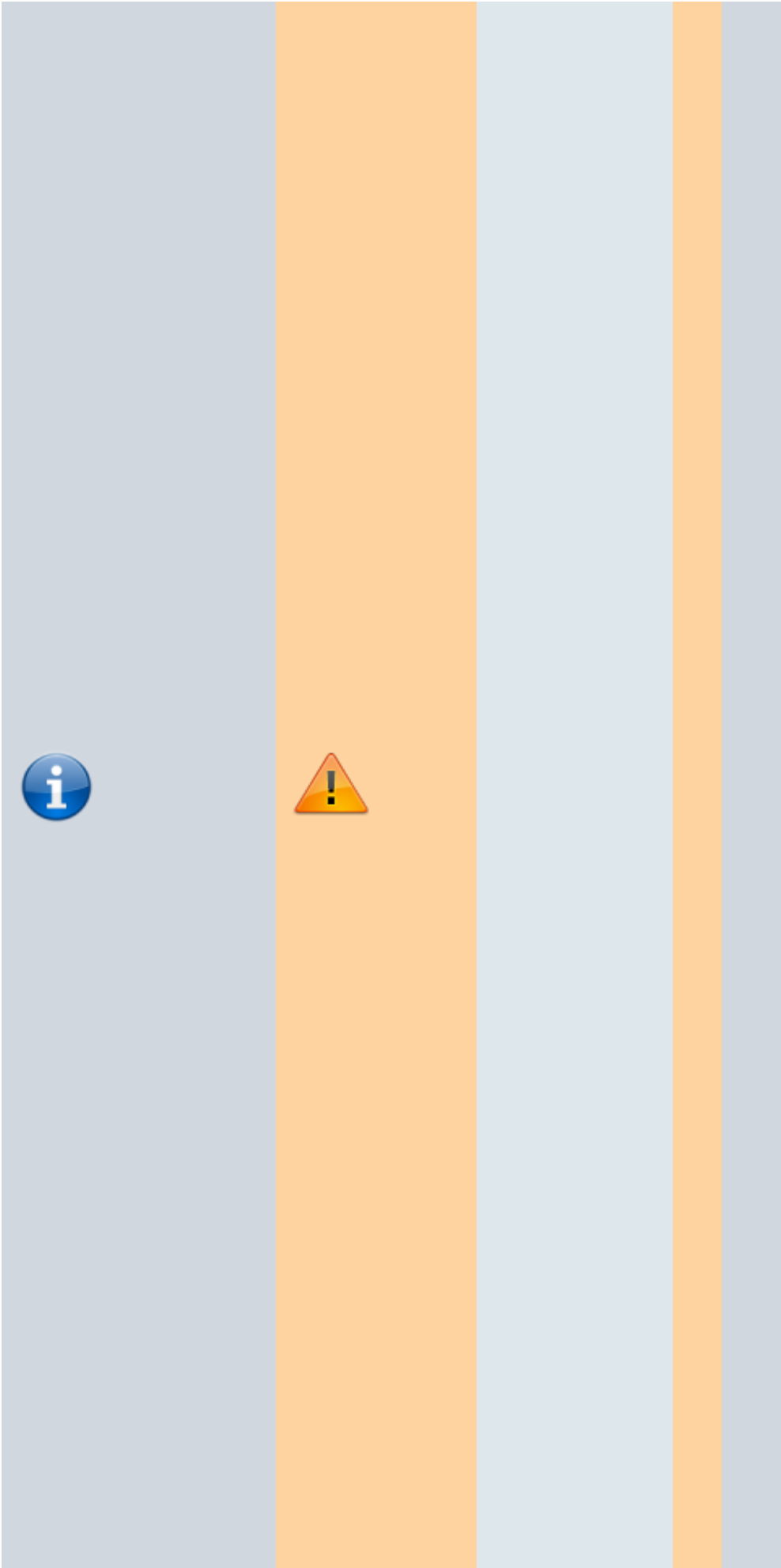


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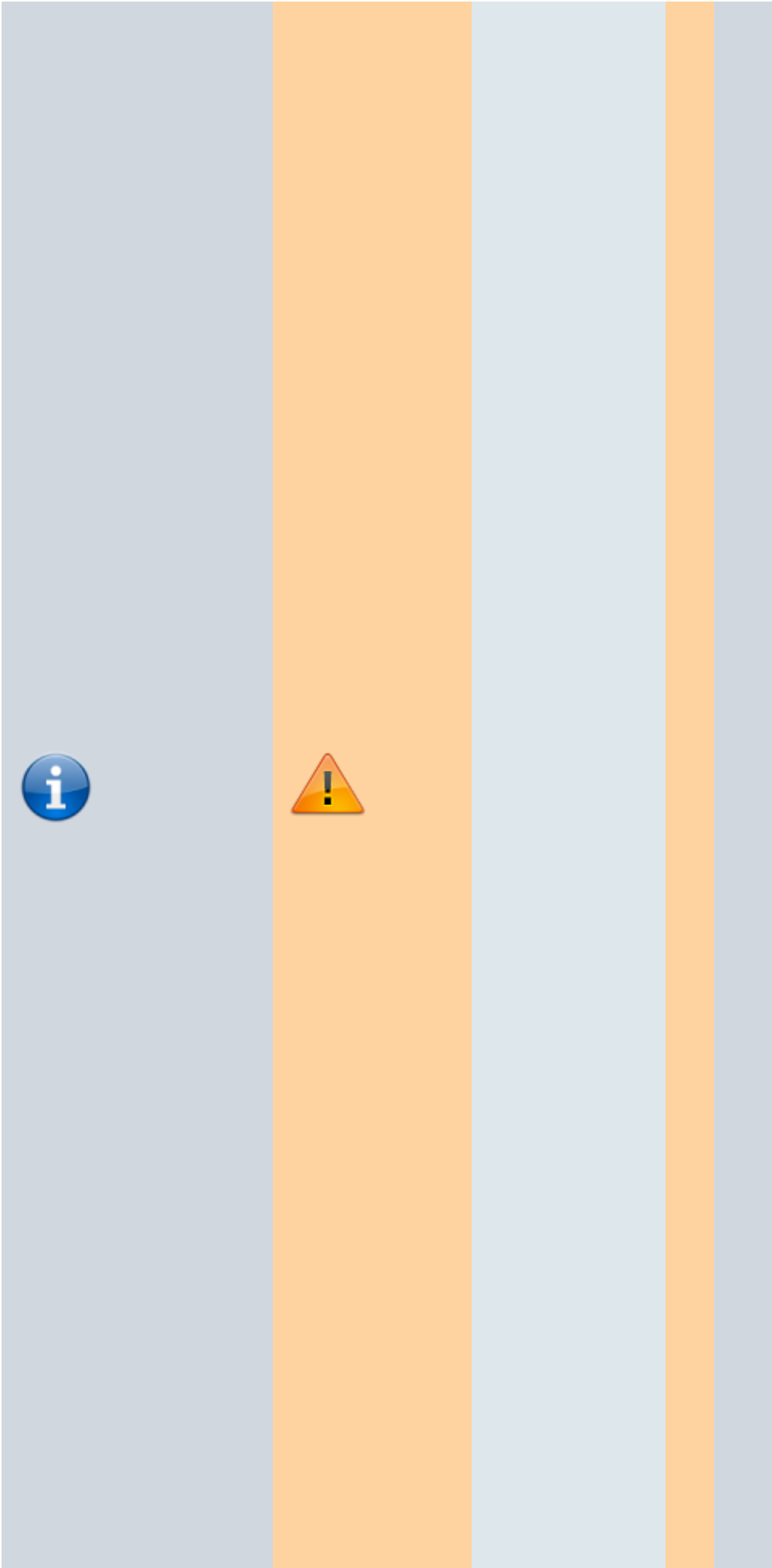
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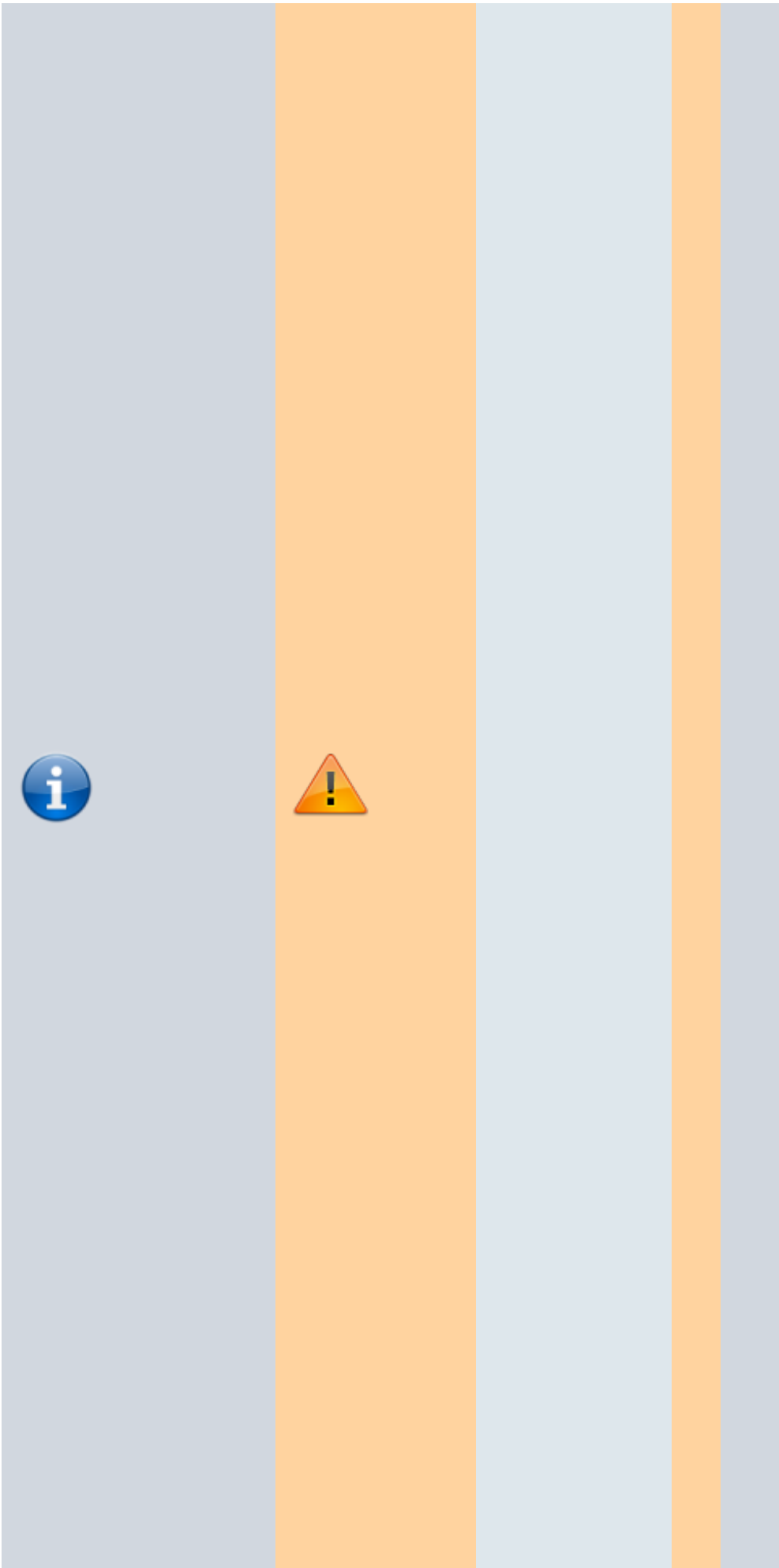
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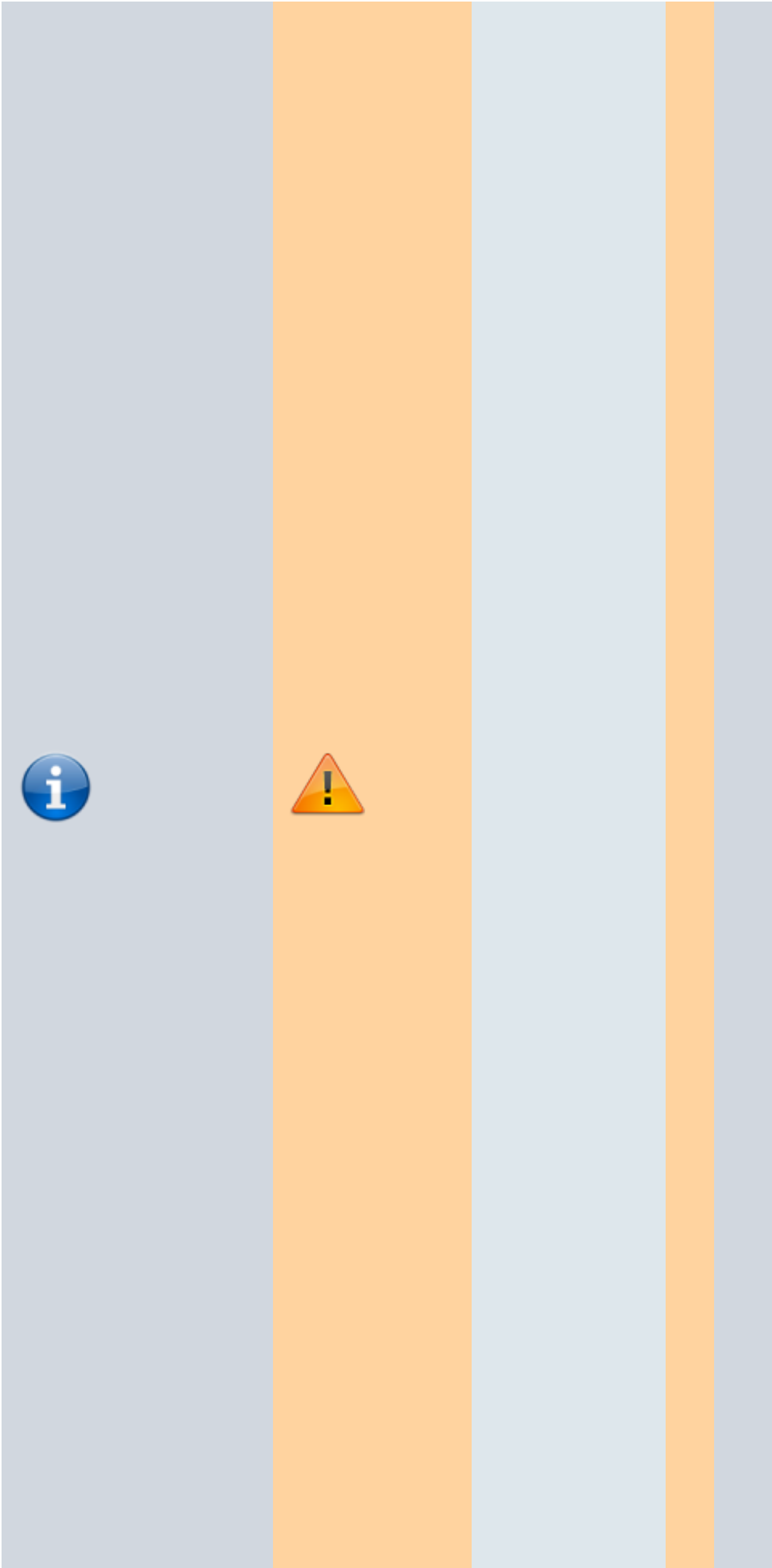
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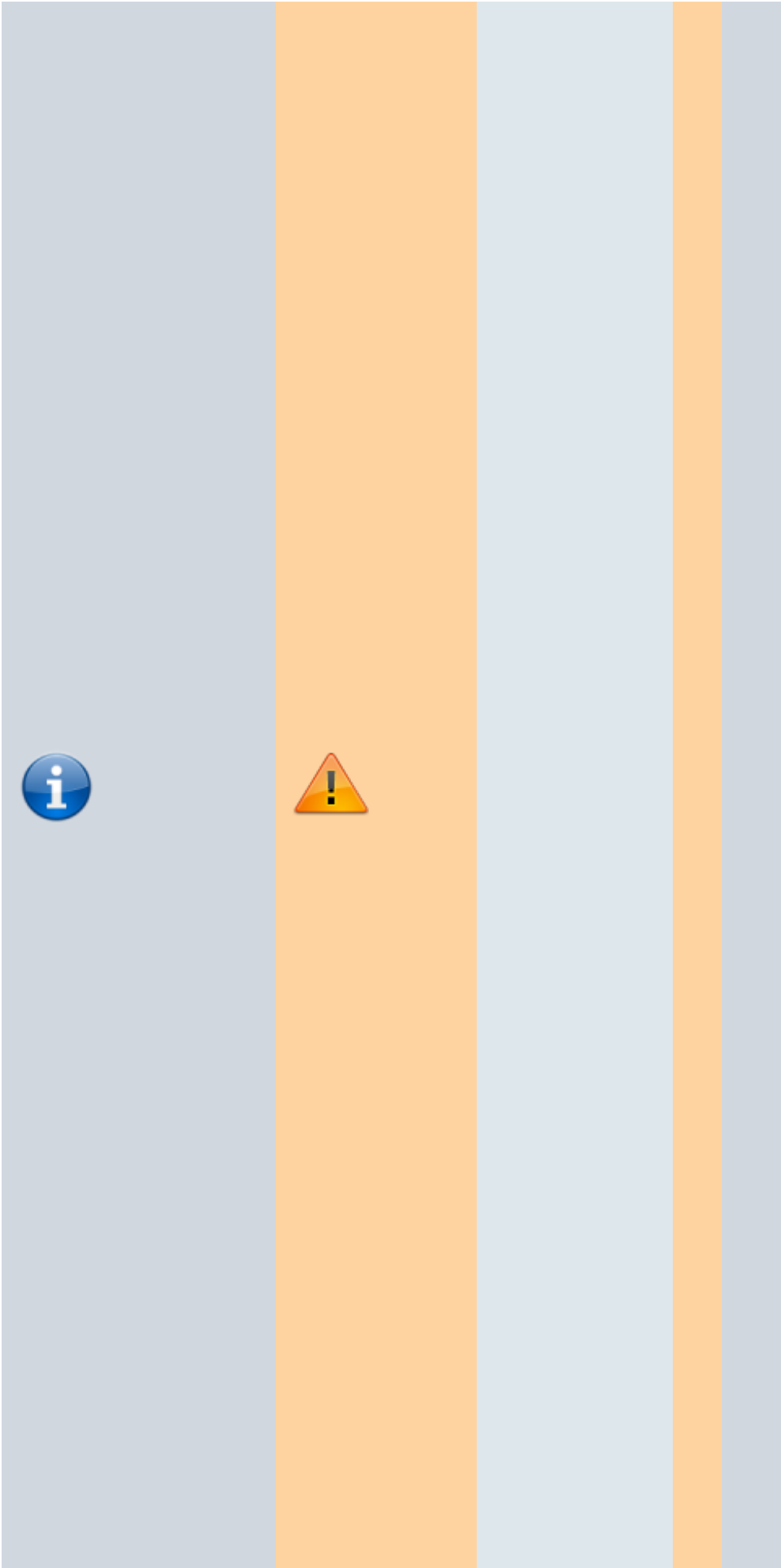


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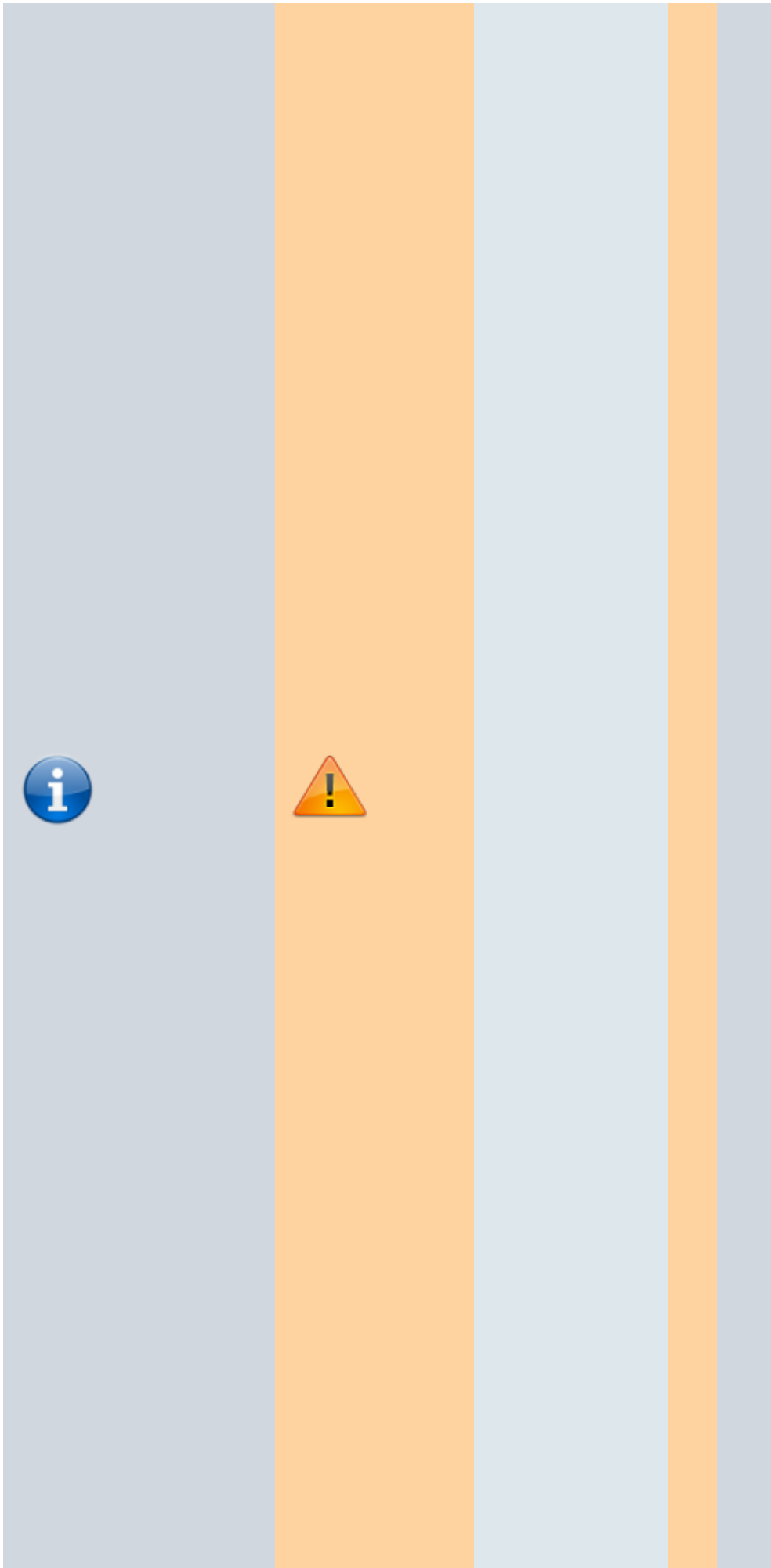
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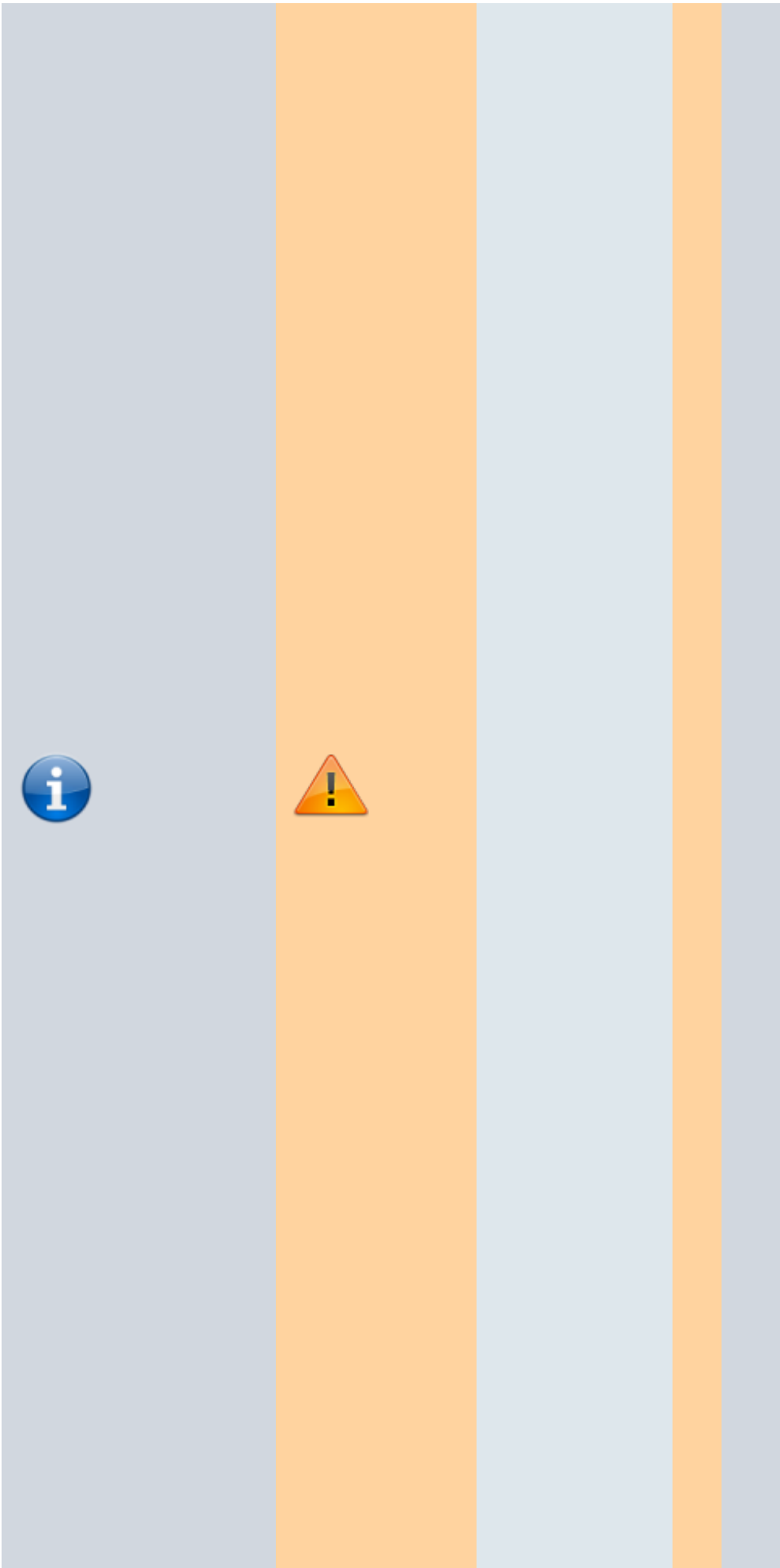


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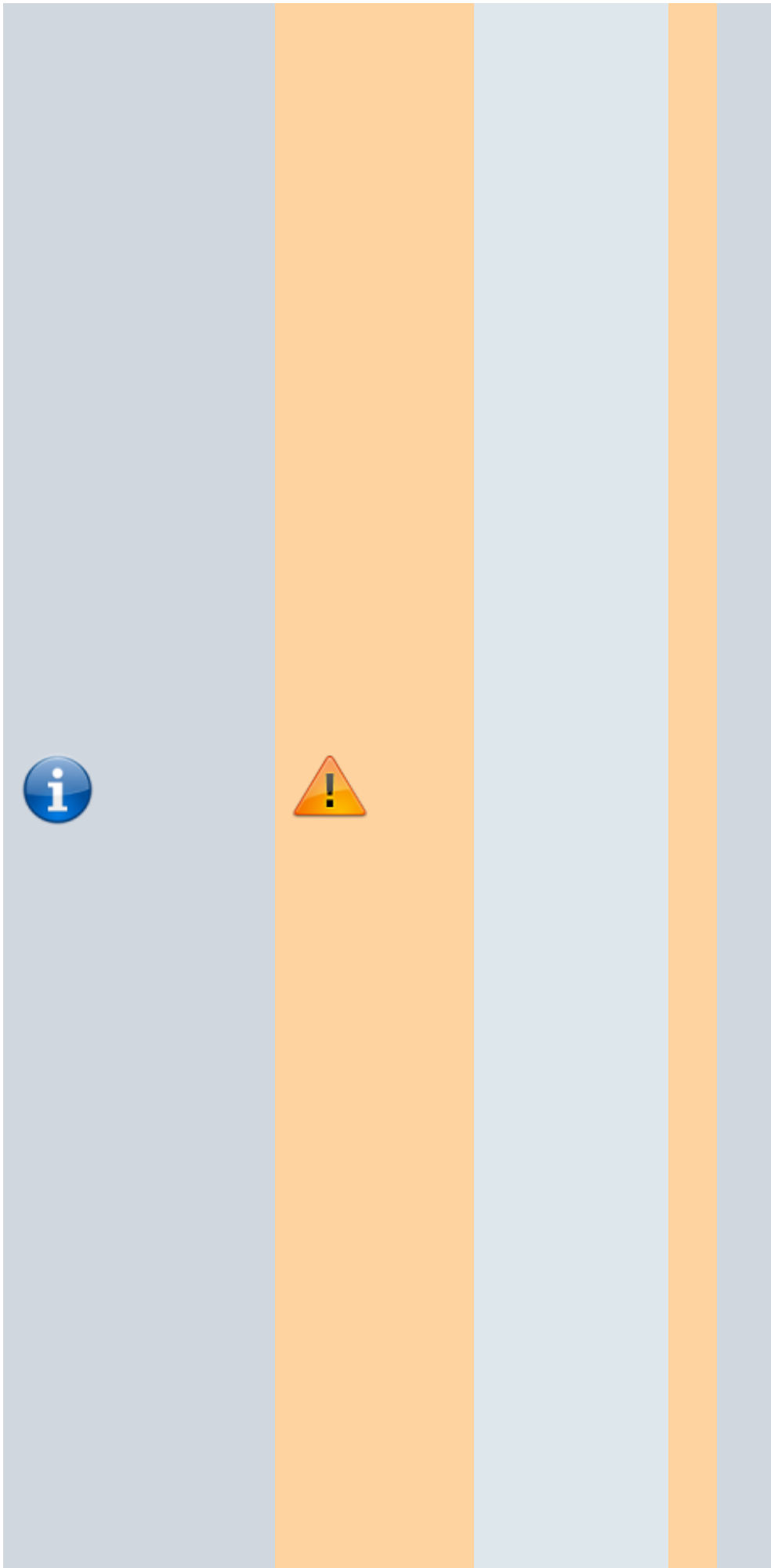
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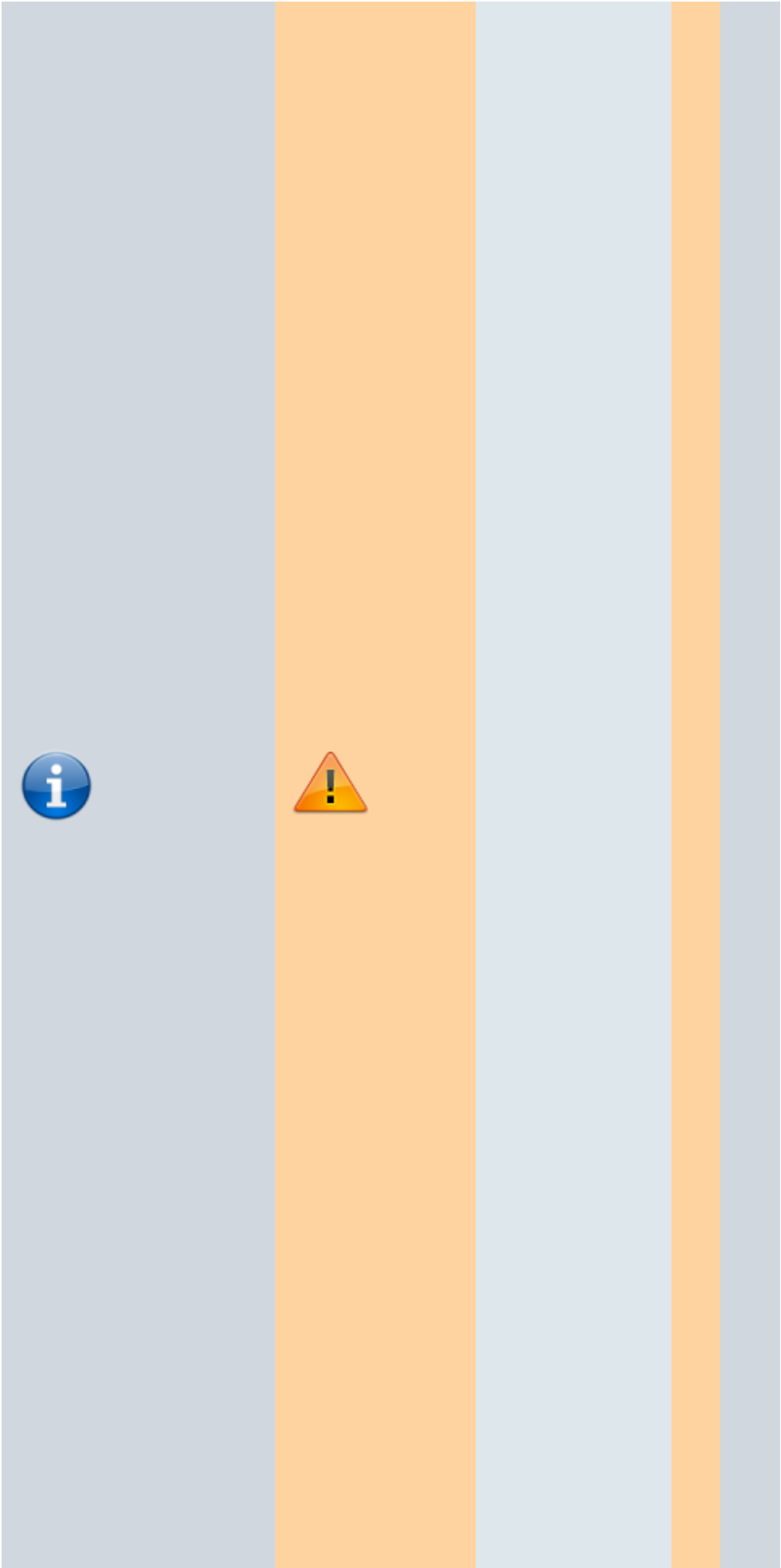
• (en) <https://unix.stackexchange.com/>



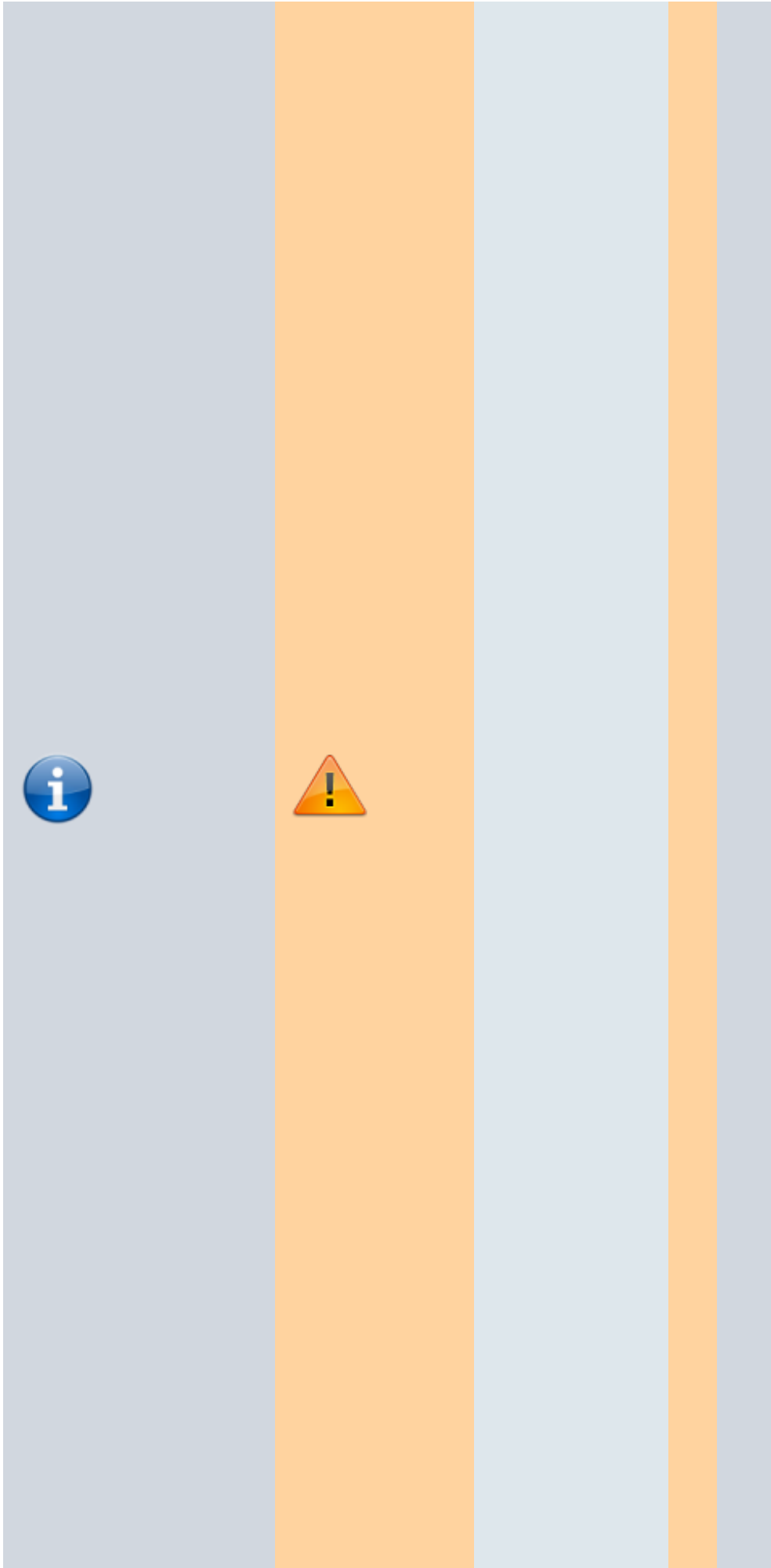
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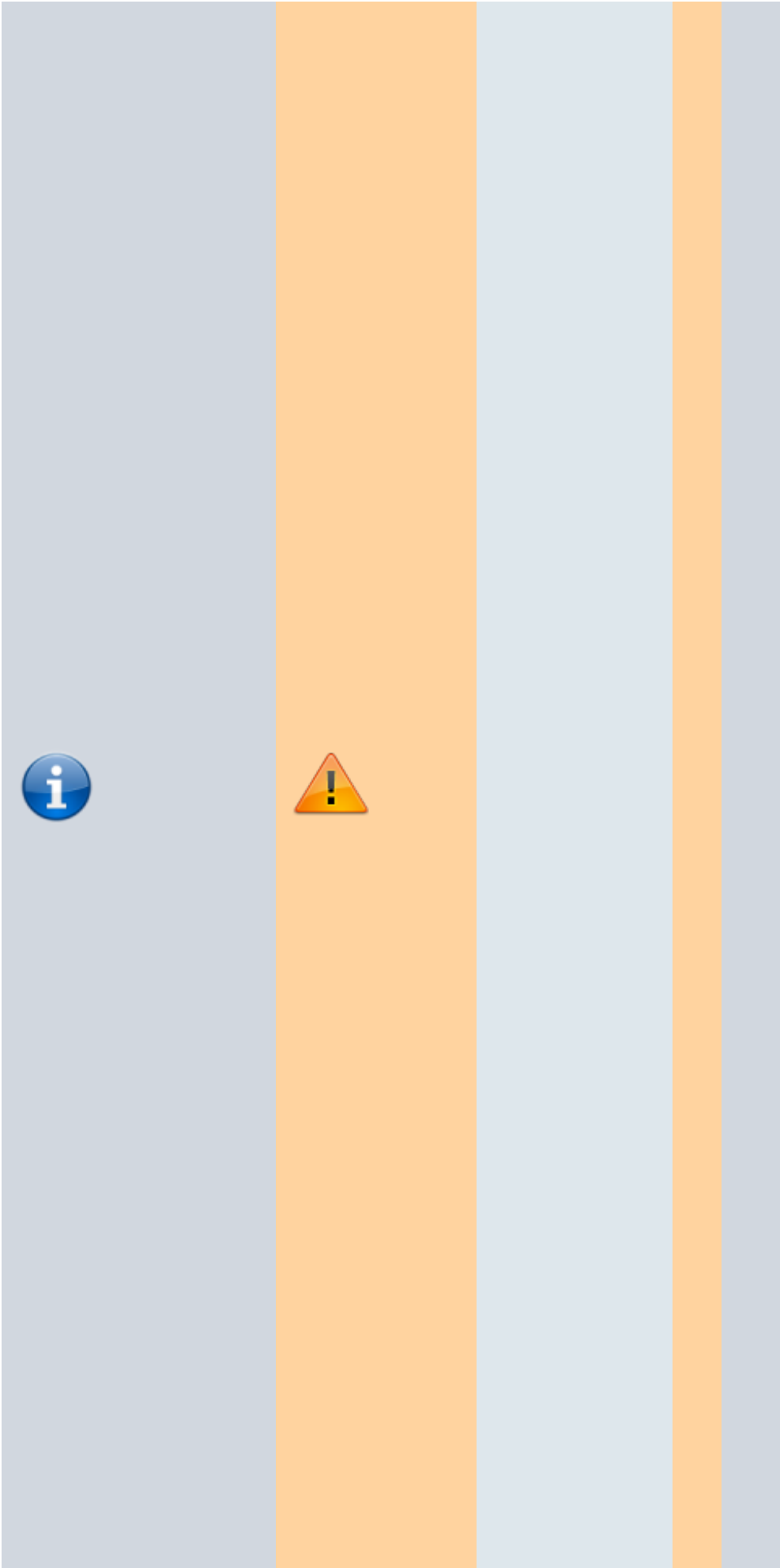
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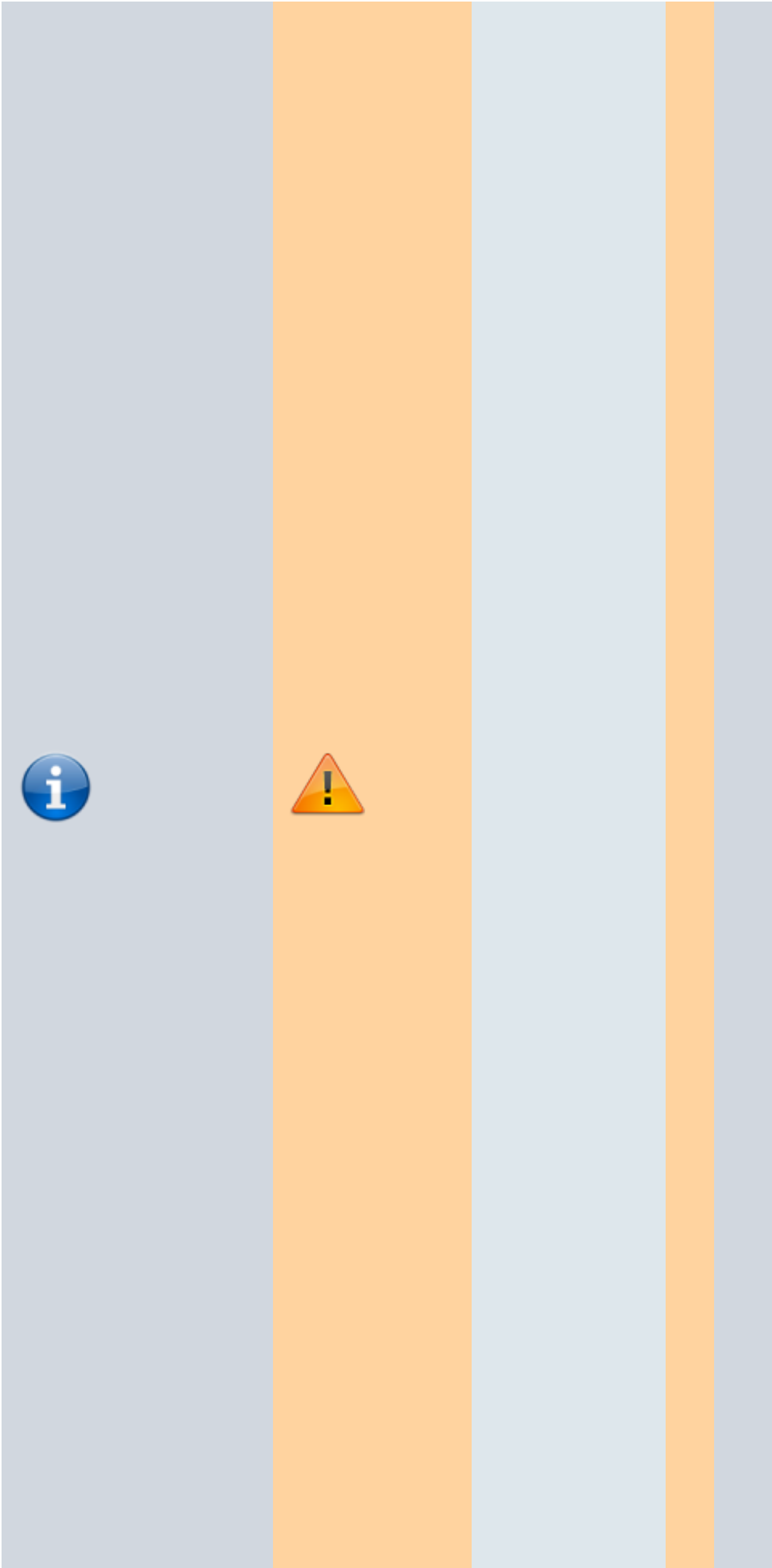
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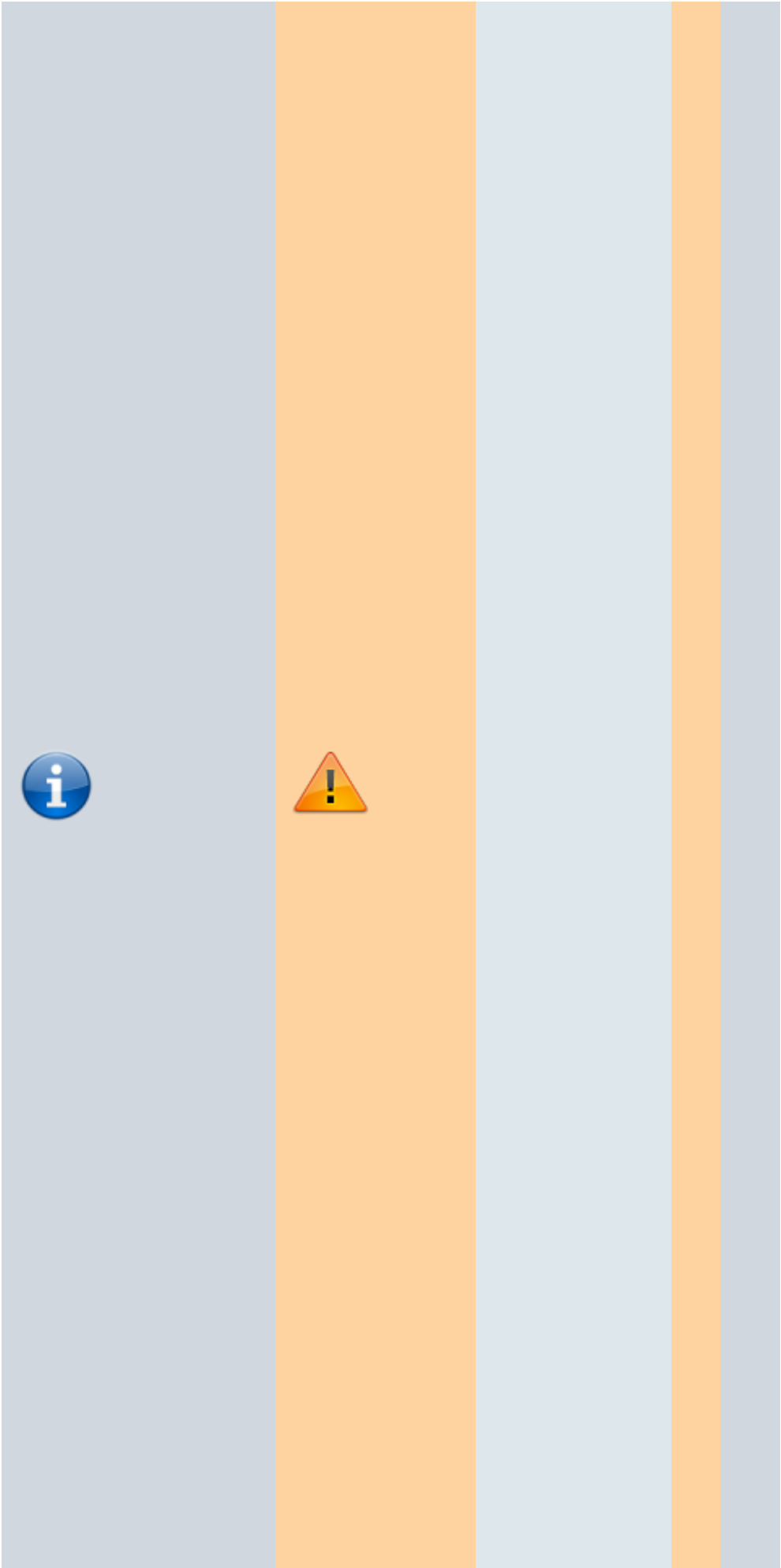
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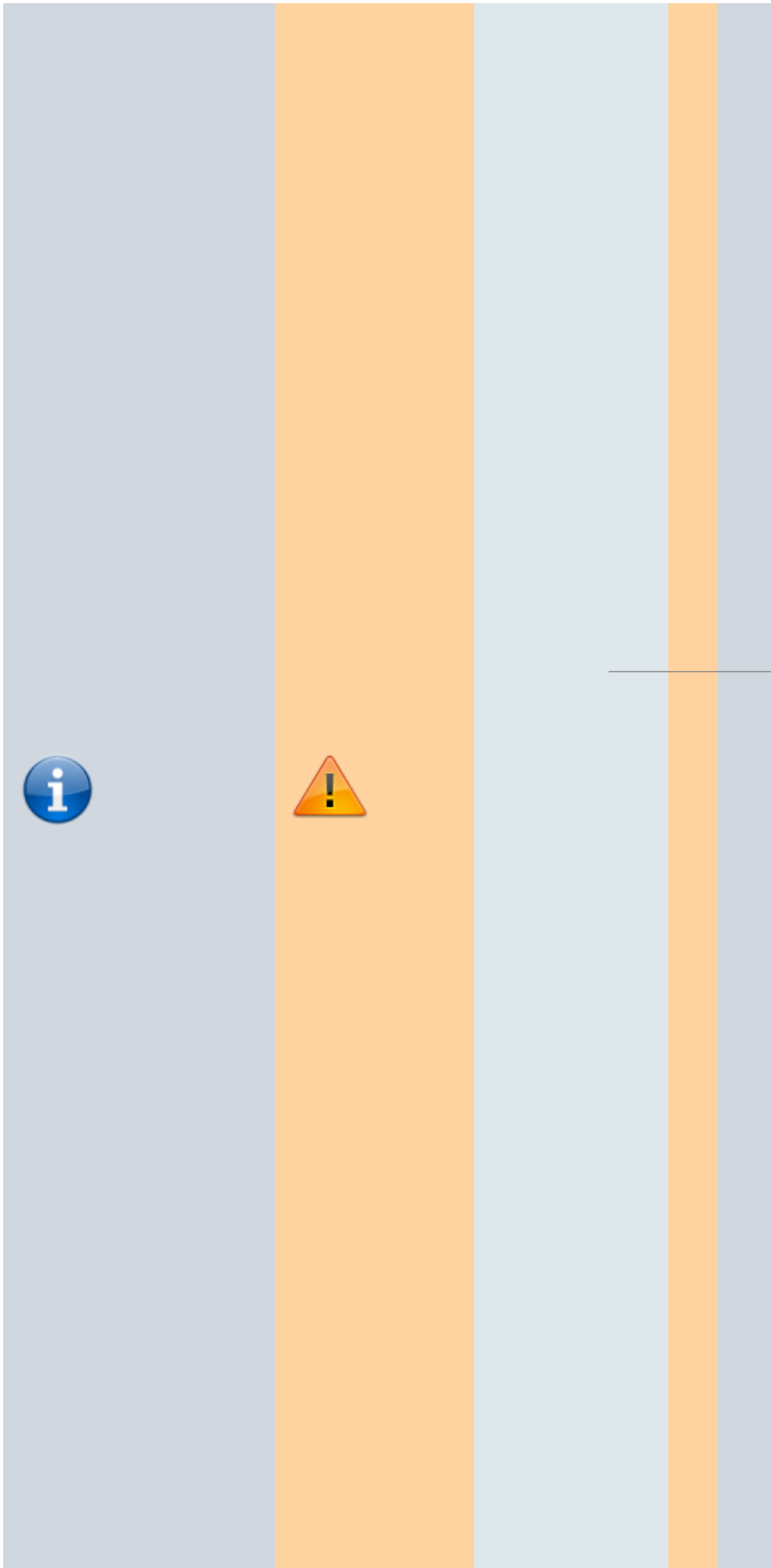
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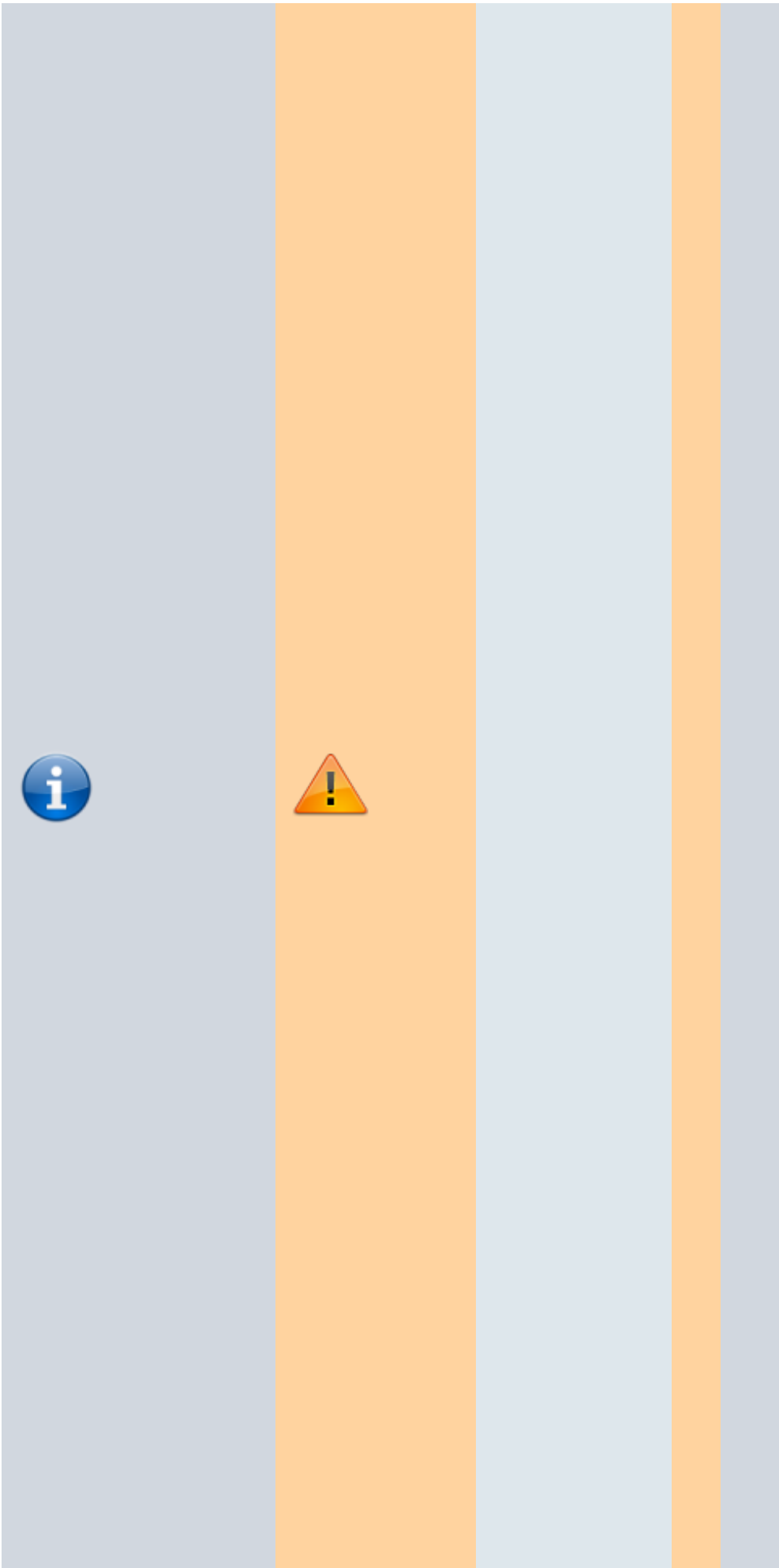


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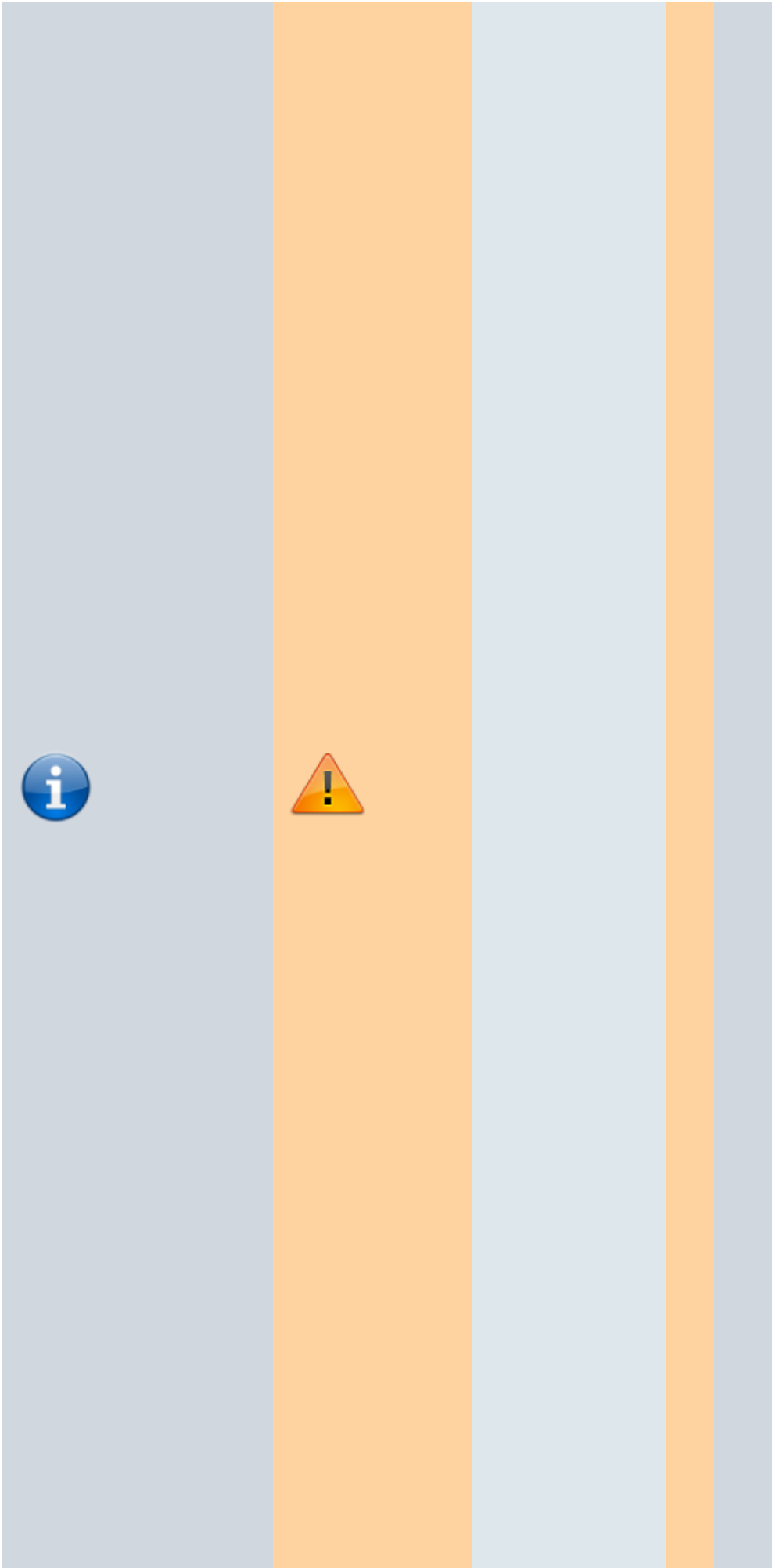


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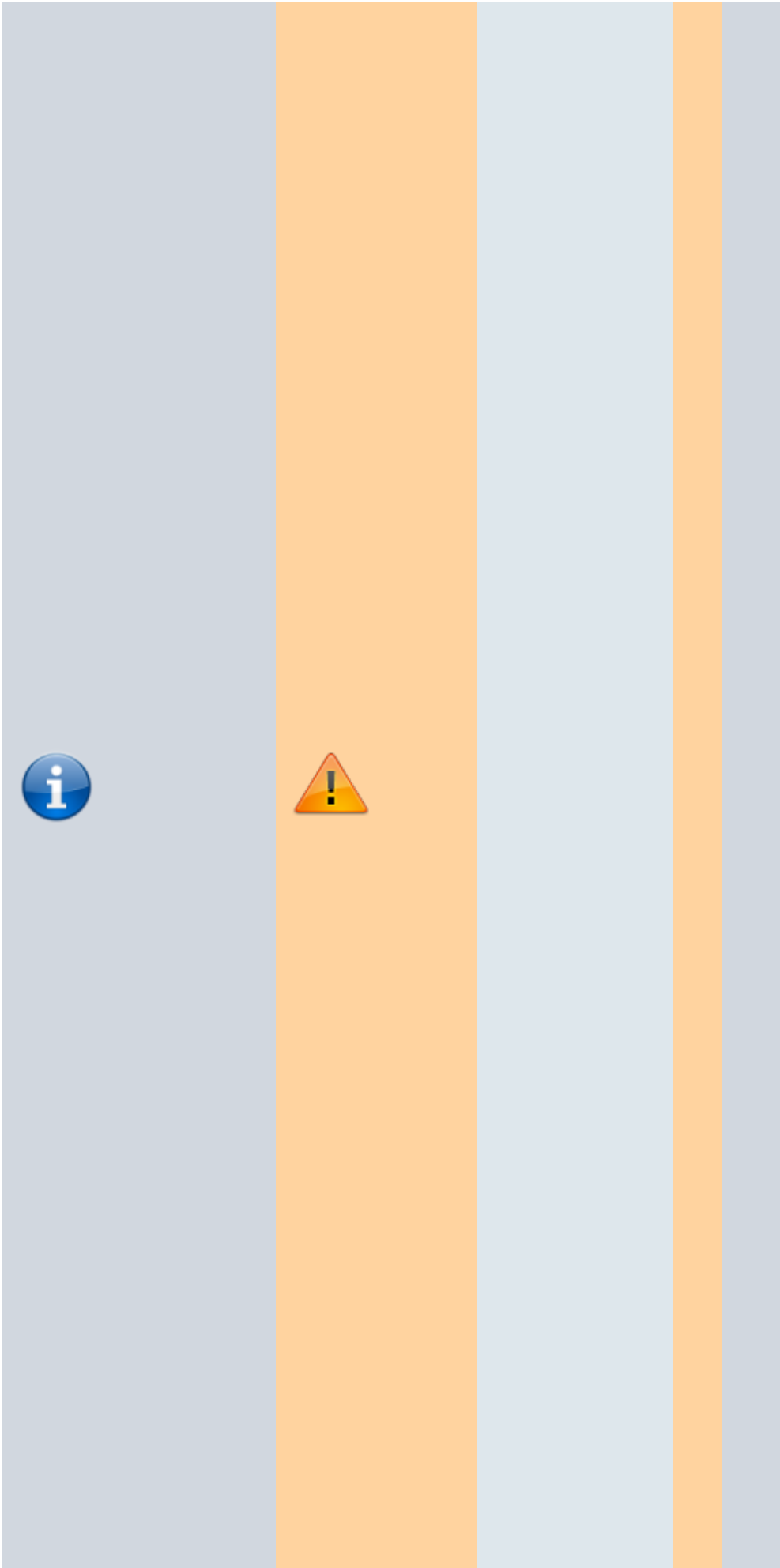




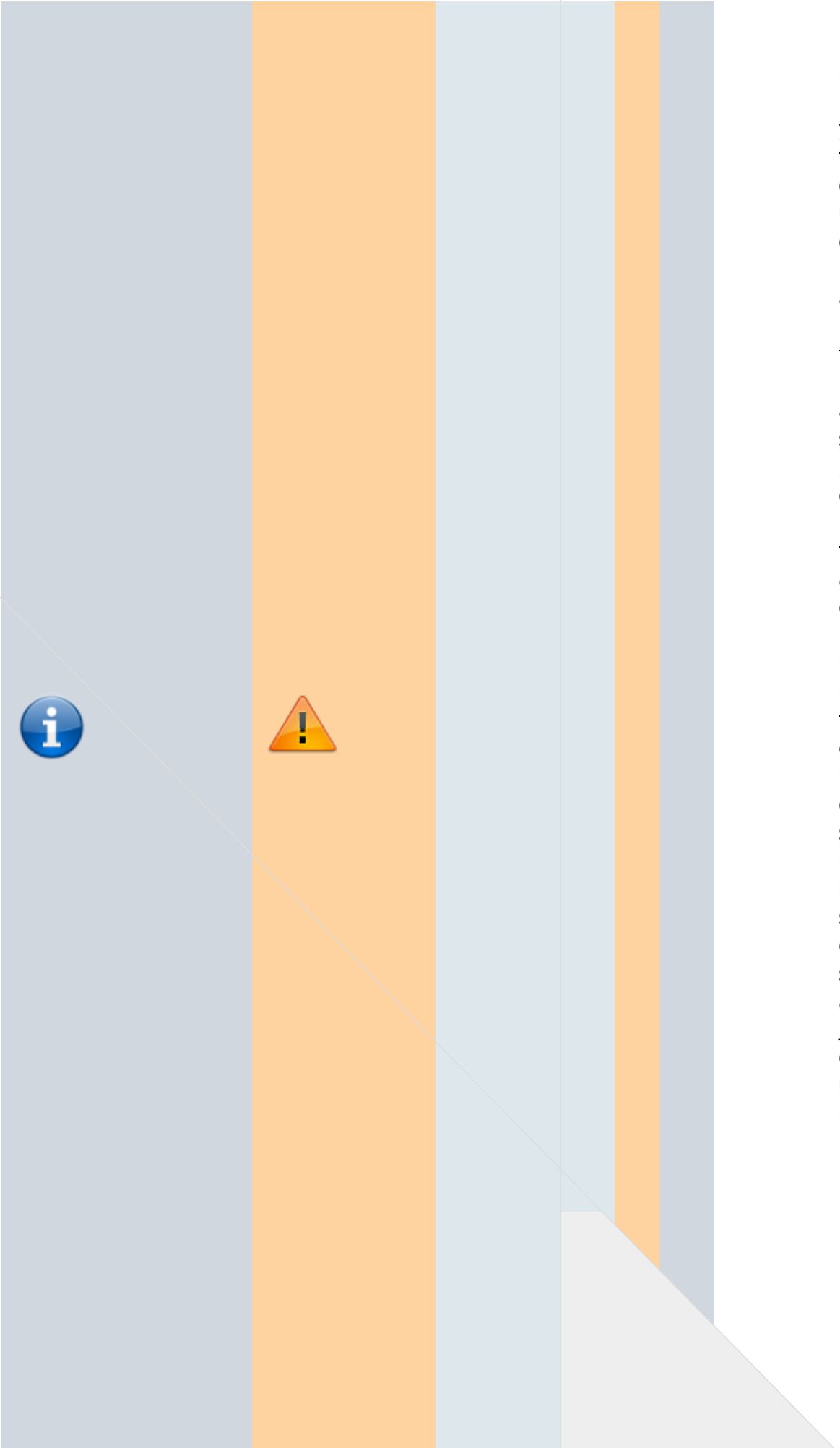
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