

Web Semântica e Processamento de Linguagem Natural na prática

Newton Calegari



PUC-SP

JSON para Linked Data

Especificação JSON-LD
Aplicando JSON-LD e RDFa

machine-readable vs human-readable

Full Hierarchy

Schema.org is defined as two hierarchies: one for textual property values, and one for the things that they describe.

Thing

This is the main schema.org hierarchy: a collection of types (or "classes"), each of which has one or more parent types. Although a type may have more than one super-type, here we show each type in one branch of the tree only. There is also a parallel hierarchy for [data types](#).

Select vocabulary view:

- Core vocabulary Core plus all extensions

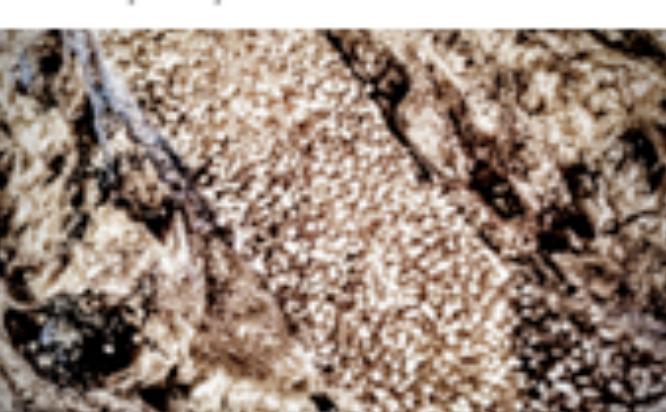
Core plus extension vocabularies

- [Thing](#)
 - [Action](#)
 - [AchieveAction](#)
 - [LoseAction](#)
 - [TieAction](#)
 - [WinAction](#)
 - [AssessAction](#)

Google AMP & NewsArticle

Top stories

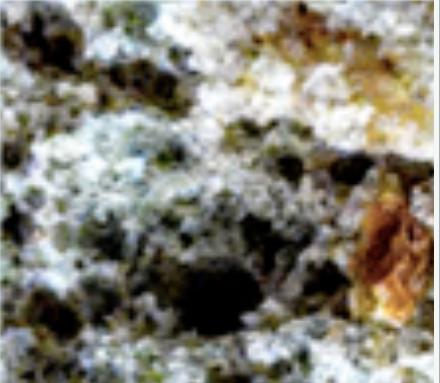
Example Space Science



New photos of the red planet yield surprising results

● AMP - 1 hour ago

Example News



Martian desert car food for explorers

● AMP - 8 hours ago

In the news

[Christina Aguilera Belts New York Medley at NBA All-Star Game: Video](#)



Us Magazine - 1 day ago

[David Letterman's intern asks NBA All-Stars the tough questions](#)

SI.com - 1 day ago



74th over: Australia 2 (Voges 112, Nevill 0) Phwoar, Dougie Brace is giving Peter Nevill a sorts of bother in the stages of his innings moving the ball in off long, gaping crack a f feet outside off stump

75th over: Australia 277-4 (Voges 112, Nevill 0) Voges is ...

13 mins ago - [View more](#)

19 mins ago - [View more](#)

Google KnowledgeGraph Cards

The screenshot shows a search result for "one bowl chocolate cake" on a mobile device. The top card is from Allrecipes.com, featuring a thumbnail of a chocolate cake, a 4.6-star rating from 110 reviews, 157 calories, and a description: "Mobile-friendly - The easiest chocolate cake in the world, and minimal cleanup!". The second card is from Taste of Home, showing a thumbnail of a cake, a 5-star rating from 45 reviews, 1 calorie, and a brief description of the frosting recipe.

one bowl chocolate cake

One Bowl Chocolate Cake | Recipe - Allrecipes.com
Allrecipes › recipe › one-bo...

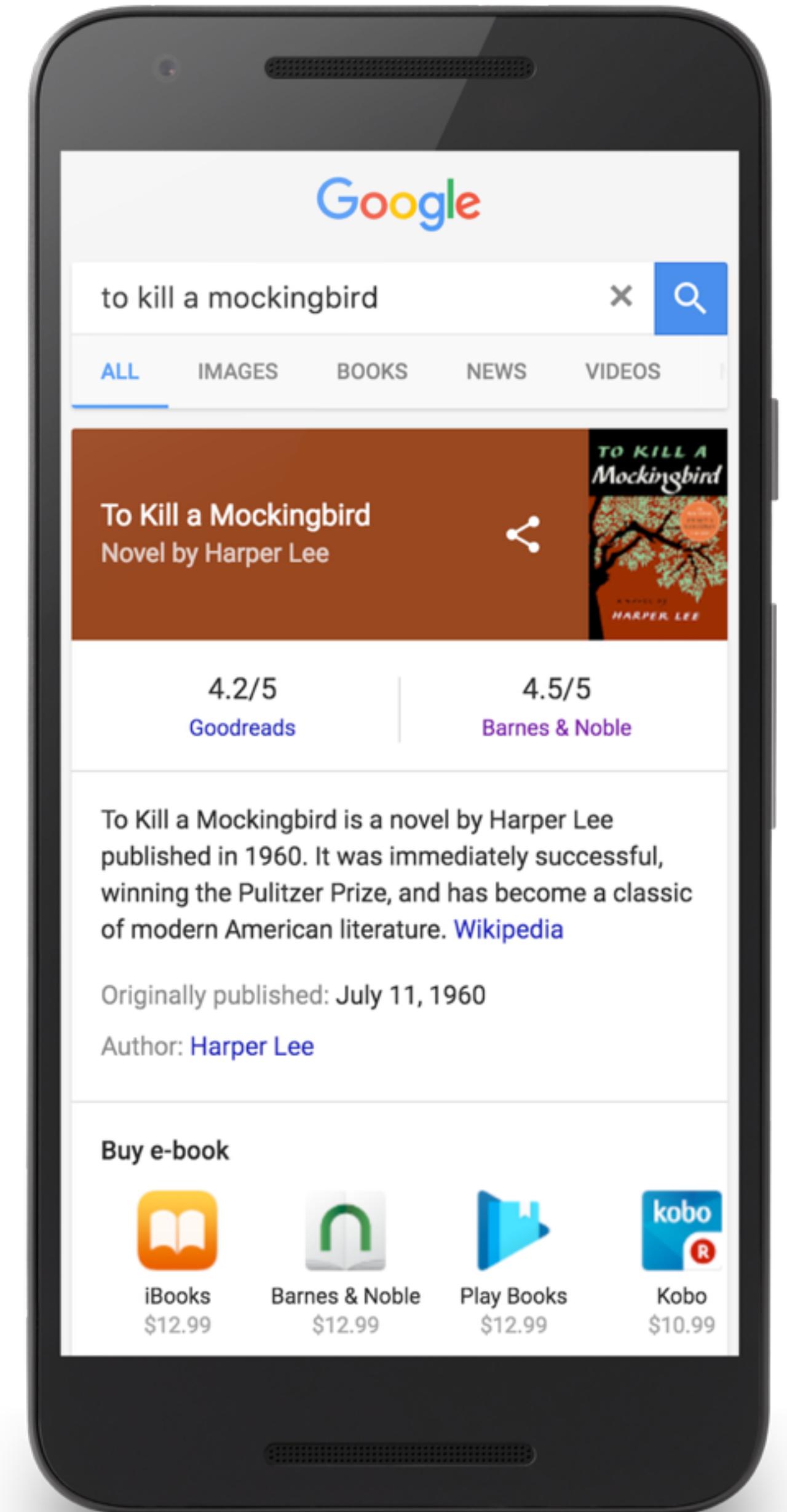
★★★★★ Rating: 4.6 - 110 reviews -
157 cal
Mobile-friendly - The easiest chocolate cake in the world, and minimal cleanup!

One-Bowl Chocolate Cake Recipe | Taste of Home
Taste of Home › recipes › o...

★★★★★ Rating: 5 - 45 reviews - 50 min - 1 cal
Mobile-friendly - Stir in eggs, oil and buttermilk. ... Chocolate Buttercream Frosting: In a large bowl, beat 1/2 cup softened butter until creamy. Beat in 2 cups confectioners' sugar, 1/4 cup baking cocoa, 1-1/2 teaspoons vanilla extract and 3-4 tablespoons 2% milk to achieve desired consistency.

Google *Content Type*

Books



Google *Content Type*

Courses

[Learning English Courses | Coursera](#)

[Coursera › browse › language-learning](#)

English for Journalism

Welcome to English for Journalism, a course created by the ...

University of Pennsylvania



Speak English Professionally: In Person, Online & O...

Do you want to speak better English? This course will help yo...

Georgia Institute of Technology



Grammar and Punctuation

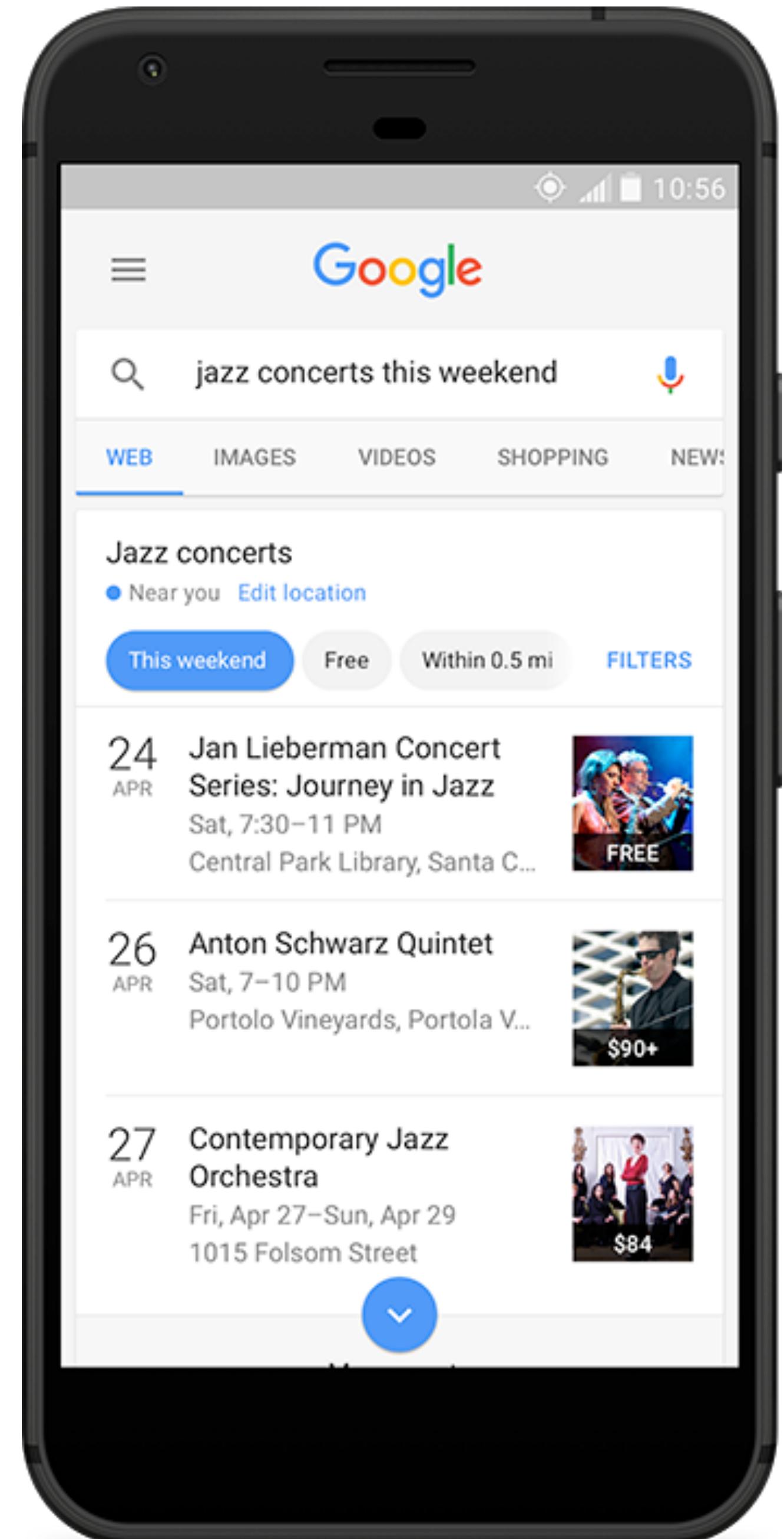
Course 1: Grammar and Punctuation Do you need to review ...

University of California, Irvine



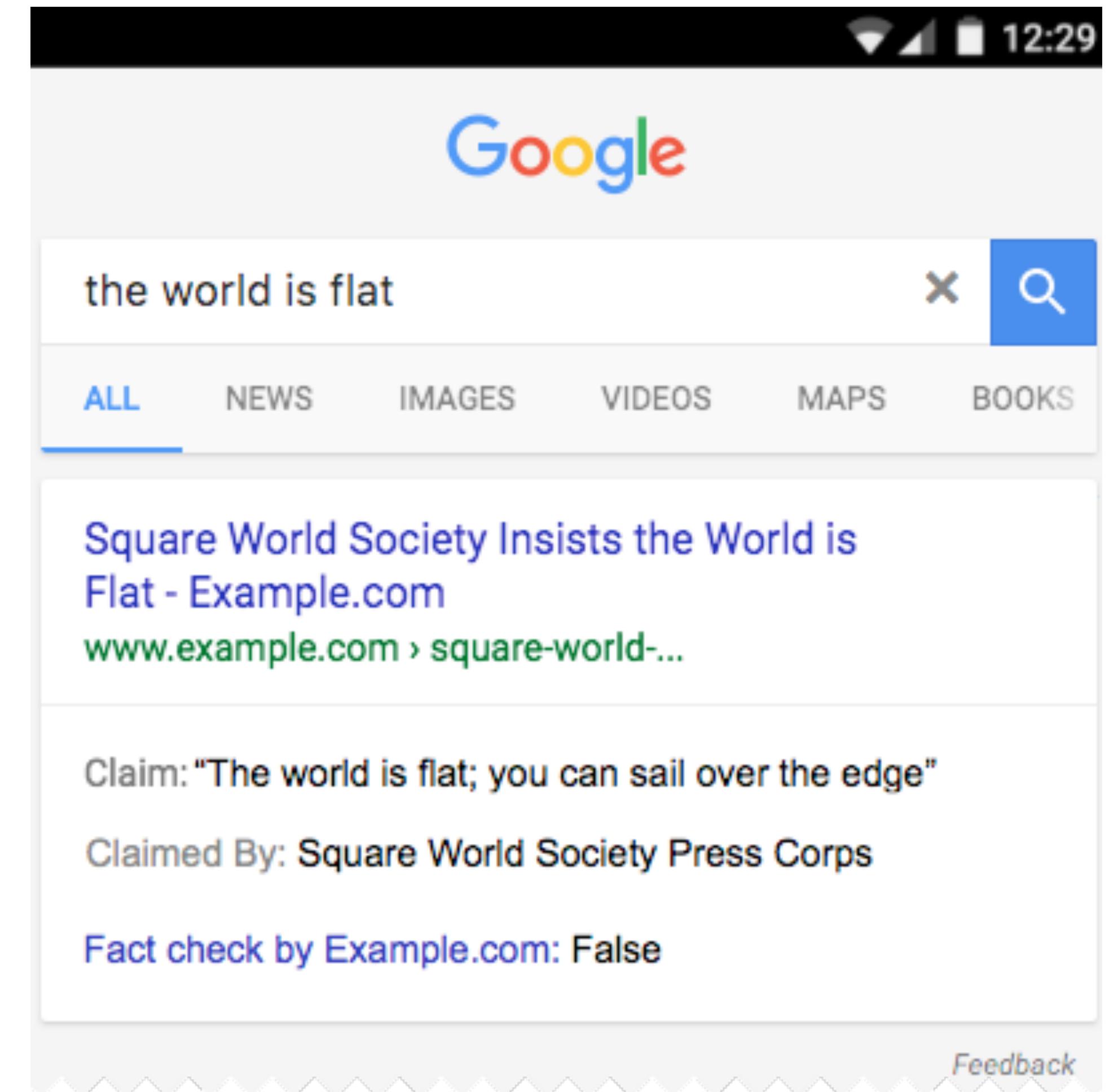
Google *Content Type*

Events



Google *Content Type*

Fact Check



the world is flat

ALL NEWS IMAGES VIDEOS MAPS BOOKS

Square World Society Insists the World is Flat - Example.com
www.example.com › square-world-...

Claim: "The world is flat; you can sail over the edge"

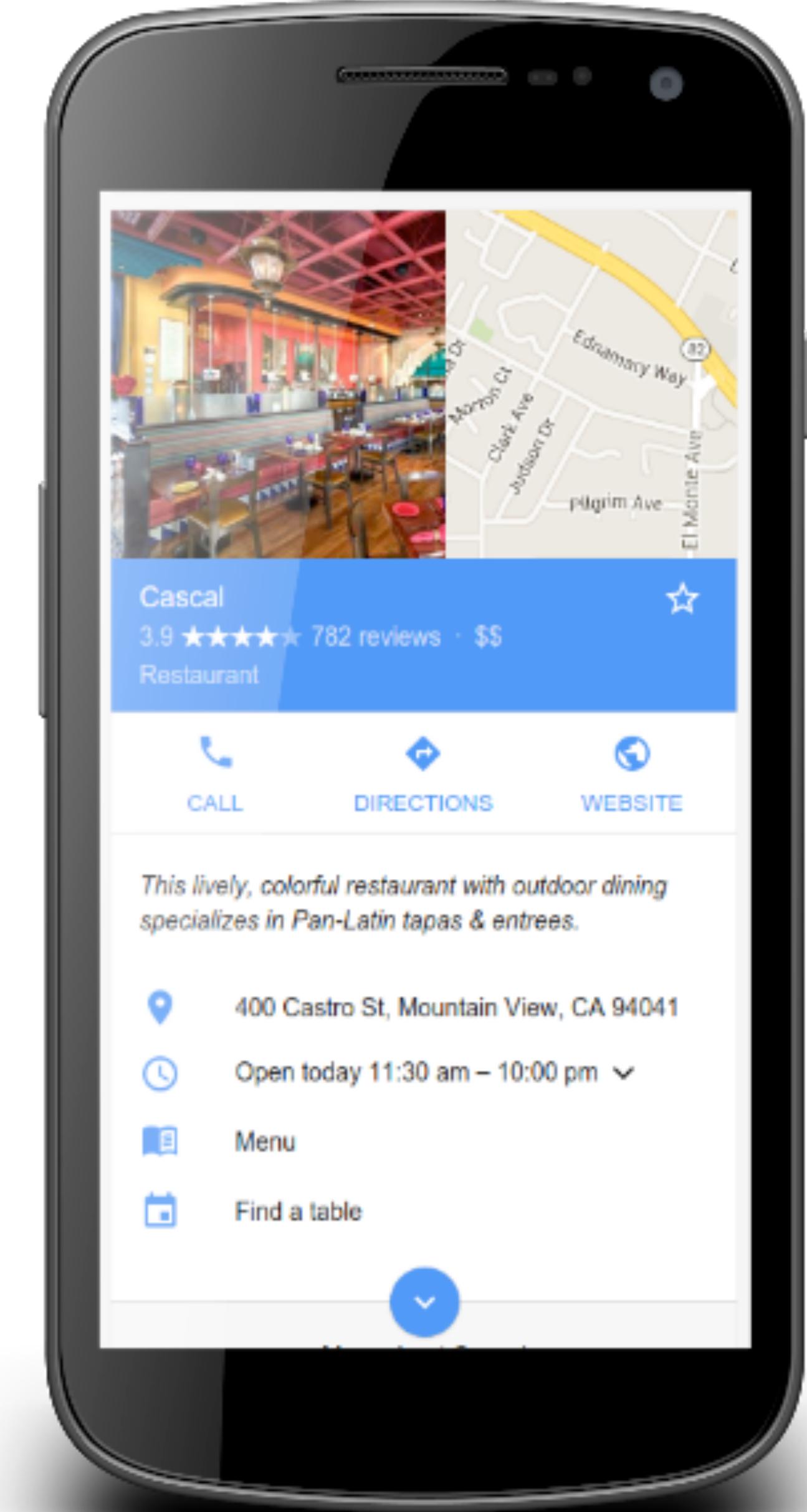
Claimed By: Square World Society Press Corps

Fact check by Example.com: False

Feedback

Google *Content Type*

Local Businesses



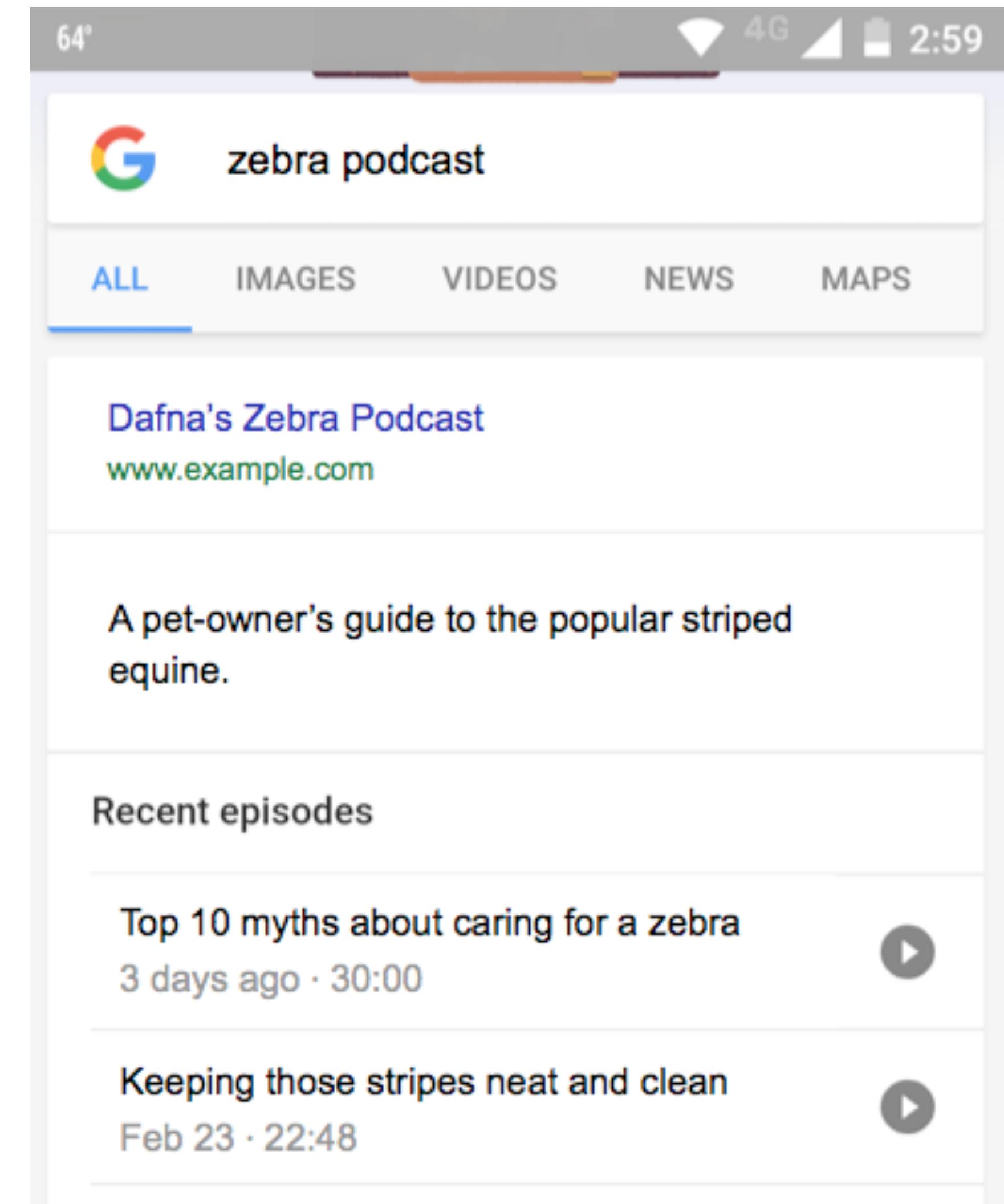
Google *Content Type*

Music



Google *Content Type*

Podcasts



A screenshot of a Google search results page on a mobile phone. The search query is "zebra podcast". The results show a card for "Dafna's Zebra Podcast" from www.example.com. The card includes a description: "A pet-owner's guide to the popular striped equine." Below the card is a section for "Recent episodes" with two entries: "Top 10 myths about caring for a zebra" (posted 3 days ago · 30:00) and "Keeping those stripes neat and clean" (posted Feb 23 · 22:48). Each episode entry has a play button icon.

64° 4G 2:59

G zebra podcast

ALL IMAGES VIDEOS NEWS MAPS

Dafna's Zebra Podcast
www.example.com

A pet-owner's guide to the popular striped equine.

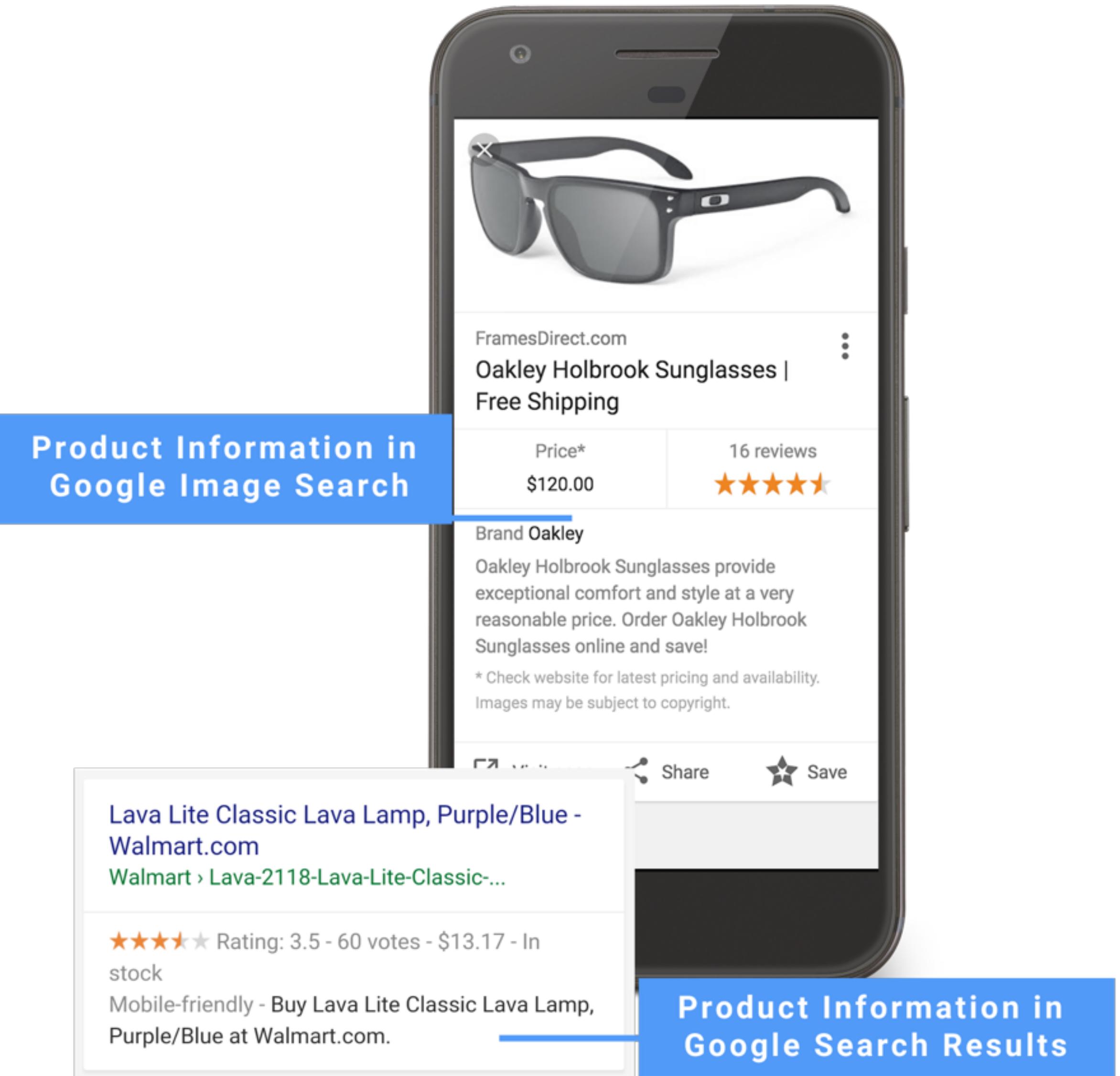
Recent episodes

Top 10 myths about caring for a zebra
3 days ago · 30:00

Keeping those stripes neat and clean
Feb 23 · 22:48

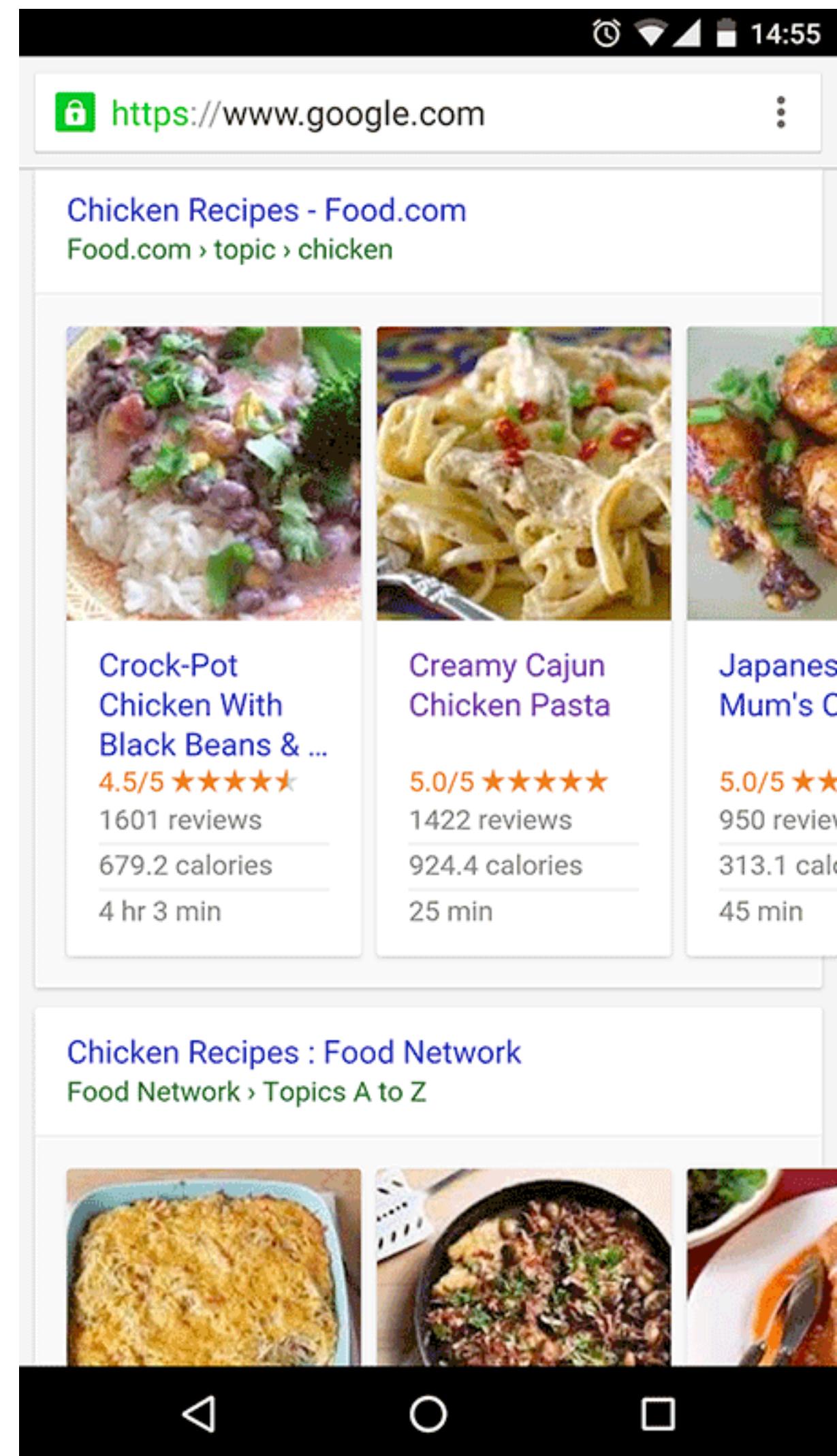
Google Content Type

Products



Google Content Type

Recipes



Google Content Type

Reviews

The screenshot displays two Google search results side-by-side.

Top Result (Per Se Restaurant):

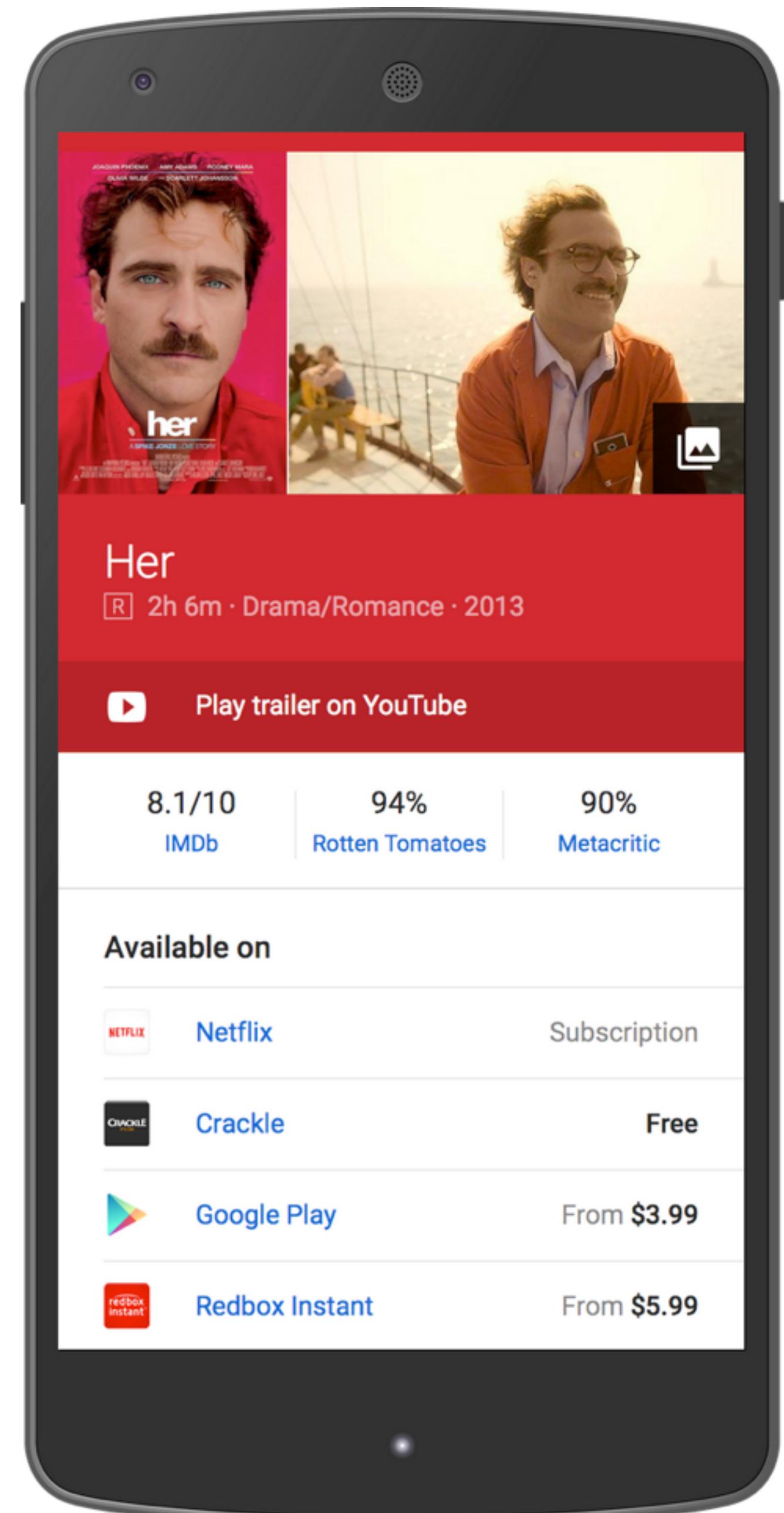
- Name:** Per Se
- Rating:** 4.6 ★★★★★ 504 reviews
- Cuisine:** New American Restaurant
- Contact:** CALL, DIRECTIONS, WEBSITE
- Description:** Chef Thomas Keller's New American restaurant offers luxe fixed-price menus, with Central Park views.
- Details:** Great wine list · Great dessert · Healthy options >
- Address:** The Shops at Columbus Circle, 10 Columbus Cir, New York, NY 10019
- Hours:** Open today 5:30–9:30PM ▾
- Menu:** Menu thomaskeller.com
- Reservations:** Find a table

Bottom Result (Interstellar Movie Review):

- Title:** Interstellar (2014) - IMDb
- Source:** IMDb > title
- Rating:** ★★★★★ Rating: 8.6/10 - 936,611 votes
- Genre:** Adventure
- Plot Summary:** A team of explorers travel through a wormhole in space in ... Videos. Interstellar -- Watch the first clip from Interstellar. Interstellar -- Watch featurette on the cast of Interstellar.
- Reviews from the web:** NEW
- OpenTable:** 4.8/5, 1,324 reviews
- Yelp:** 4.5/5, 1,176 reviews
- Facebook:** 4.7/5, 1,541 votes

Google *Content Type*

TV & Movies



Google *Content Type*

Videos

More from [The Daily Show with Jon Stewart - Co...](#)



[Jon's Job Offer](#)
11 hours ago



[Moment of Zen -
Jon's
Announcement](#)
1 day ago



[Guardia
Veracity](#)
2 days ago

JSON-LD


```
{  
  "@context": "http://schema.org",  
  "@id": "https://www.wikidata.org/wiki/Q76",  
  "@type": "Person",  
  "name": "Barack Obama",  
  "givenName": "Barack",  
  "familyName": "Obama",  
  "jobTitle": "44th President of the United States"  
}
```

```
{  
  "@context": "http://schema.org",  
  "@id": "https://www.wikidata.org/wiki/Q76",  
  "@type": "Person",  
  "name": "Barack Obama",  
  "givenName": "Barack",  
  "familyName": "Obama",  
  "jobTitle": "44th President of the United States"  
}
```

```
{  
  "@context": "http://schema.org",  
  "@id": "https://www.wikidata.org/wiki/Q76",  
  "@type": "Person",  
  "name": "Barack Obama",  
  "givenName": "Barack",  
  "familyName": "Obama",  
  "jobTitle": "44th President of the United States"  
}
```

```
{  
  "@context": "http://schema.org",  
  "@id": "https://www.wikidata.org/wiki/Q76",  
  "@type": "Person",  
  "name": "Barack Obama",  
  "givenName": "Barack",  
  "familyName": "Obama",  
  "jobTitle": "44th President of the United States"  
}
```

```
<script type="application/ld+json">  
    // conteúdo JSON-LD aqui dentro  
</script>
```

<https://developers.google.com/search/docs/guides/>

Uma pequena atividade...



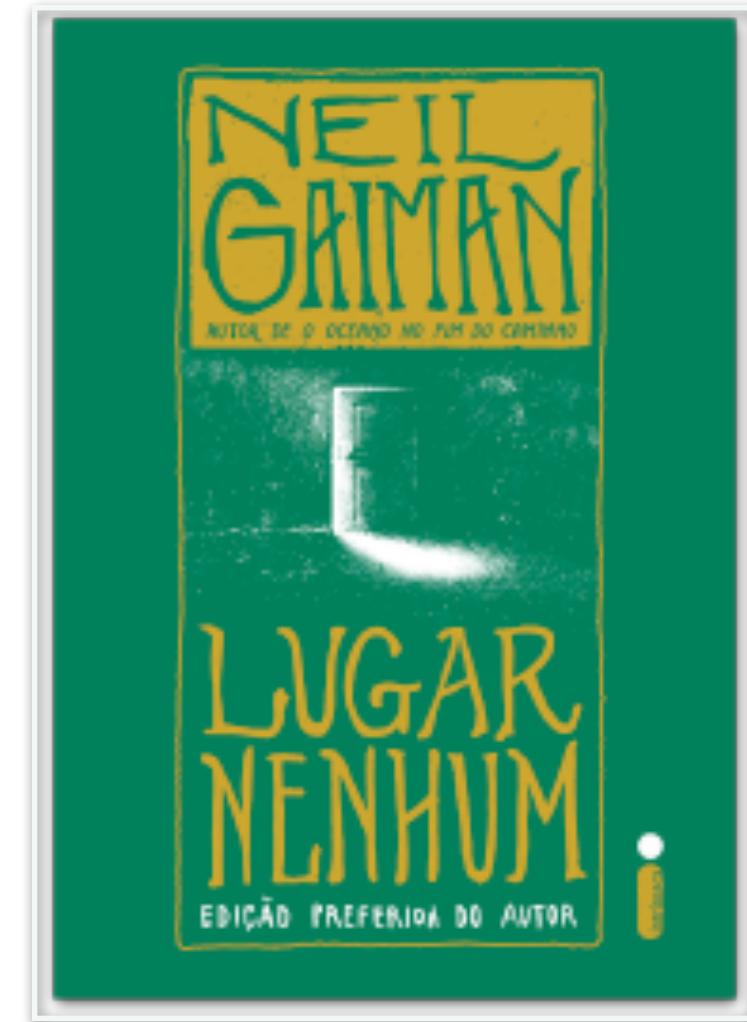
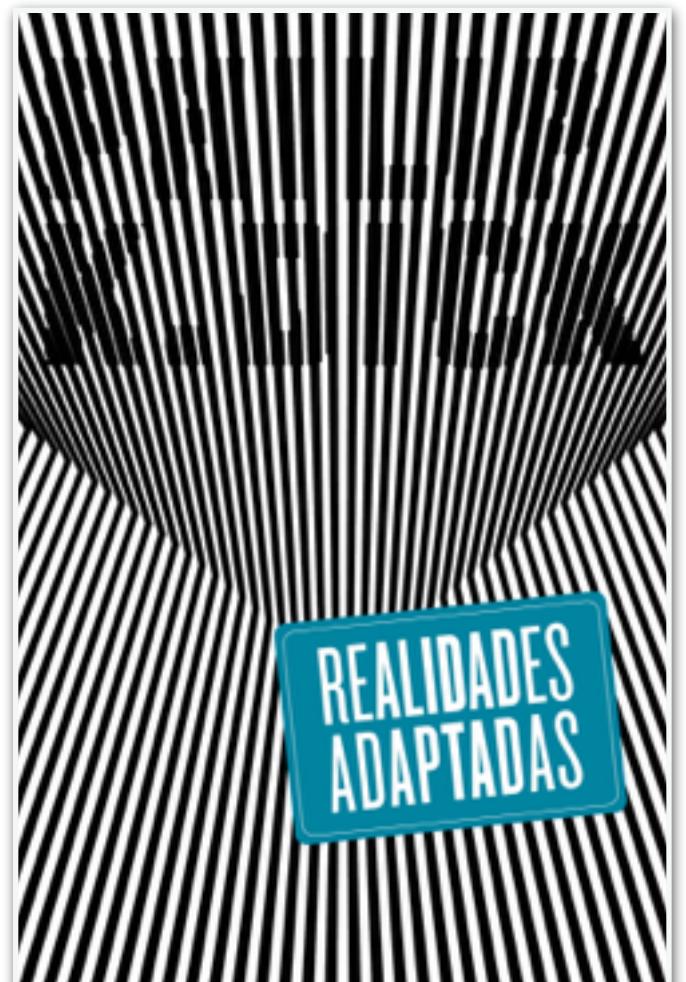
Newton Calegari

newton@nic.br

www.newtoncalegari.com.br

Trabalha no [NIC.br](#) e [W3C Brasil](#)

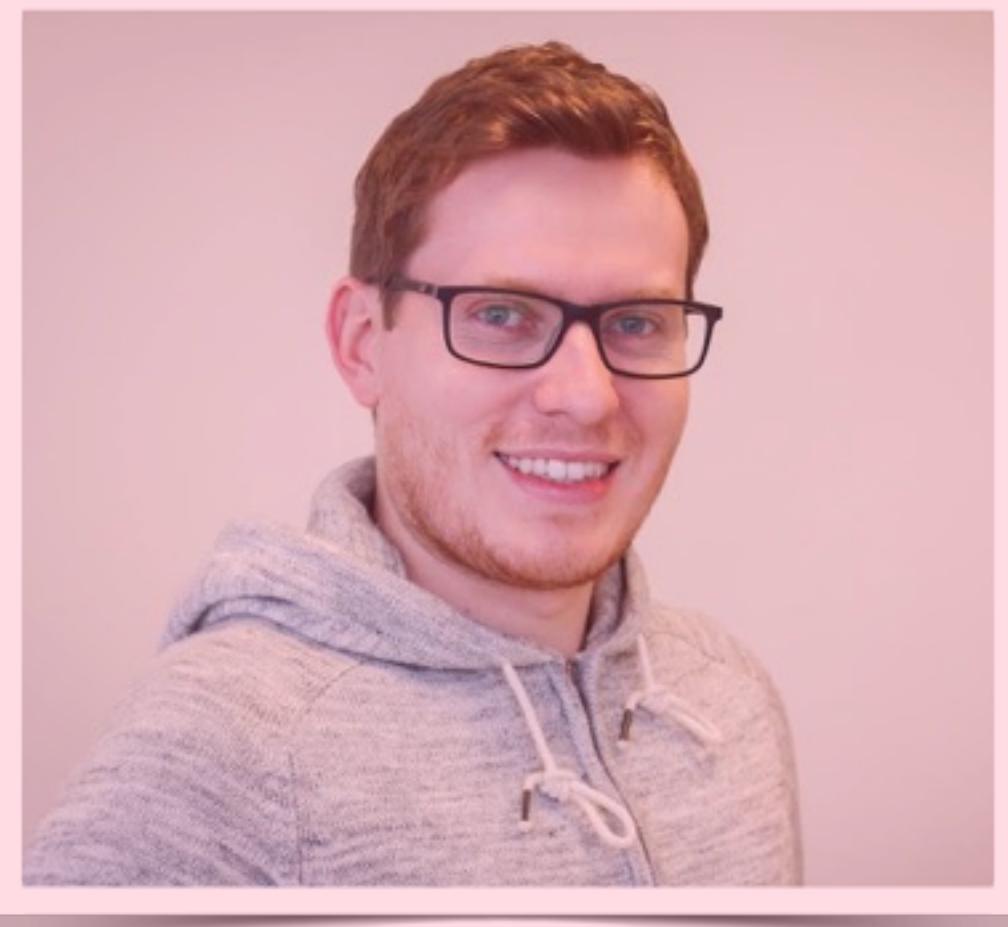
Livros:



Filmes e series:

Produtos:





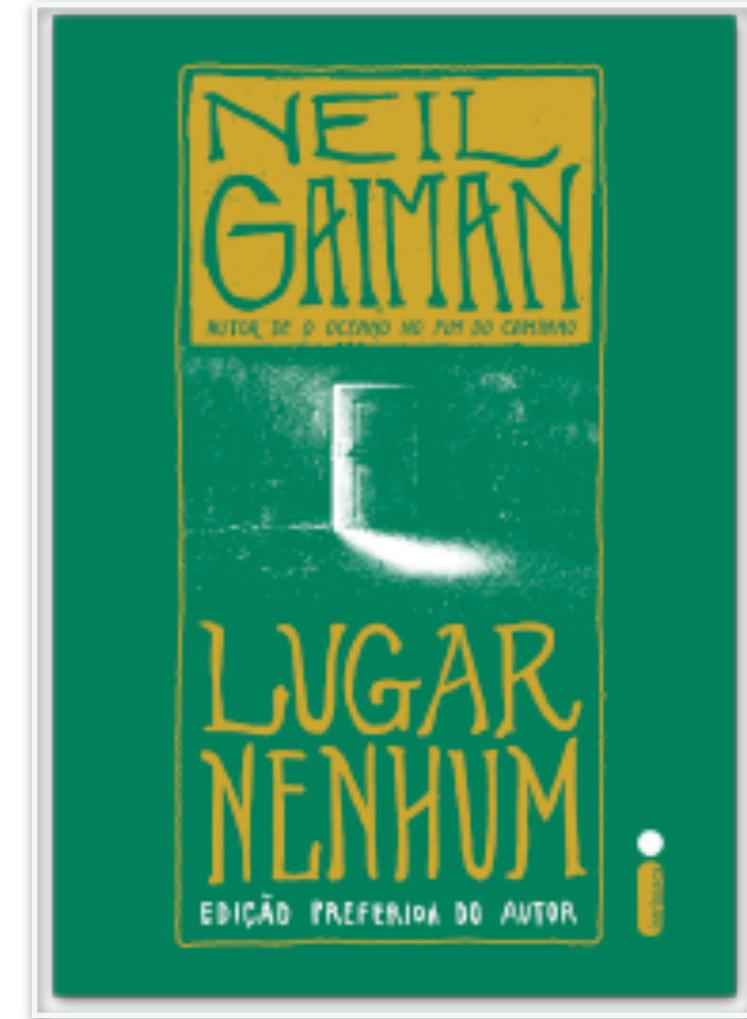
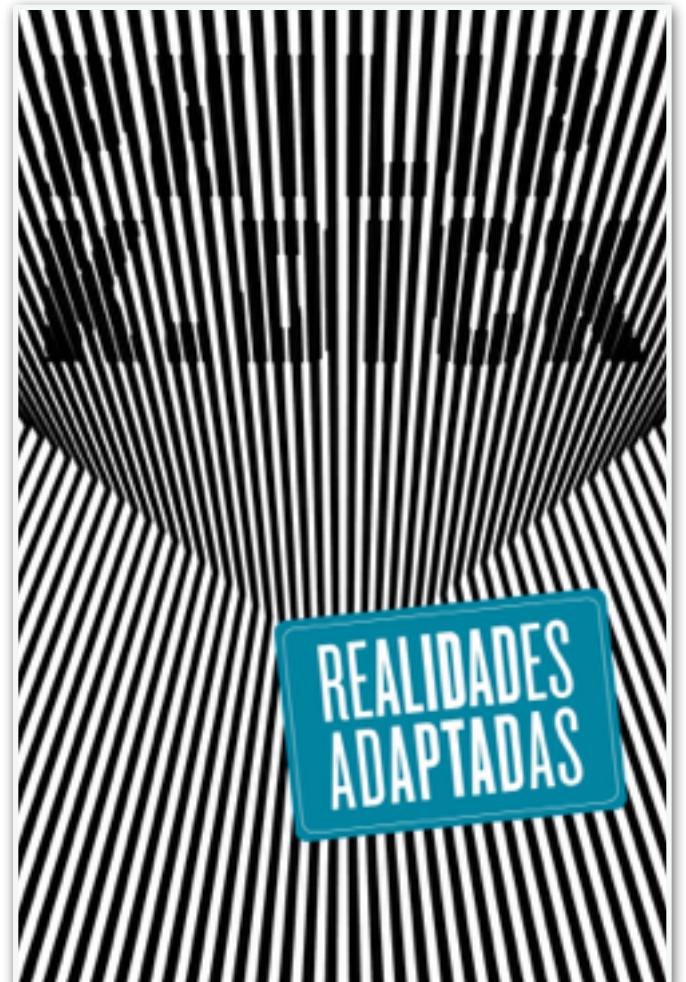
Newton Calegari

newton@nic.br

www.newtoncalegari.com.br

Trabalha no [NIC.br](#) e [W3C Brasil](#)

Livros:



Filmes e series:

Produtos:





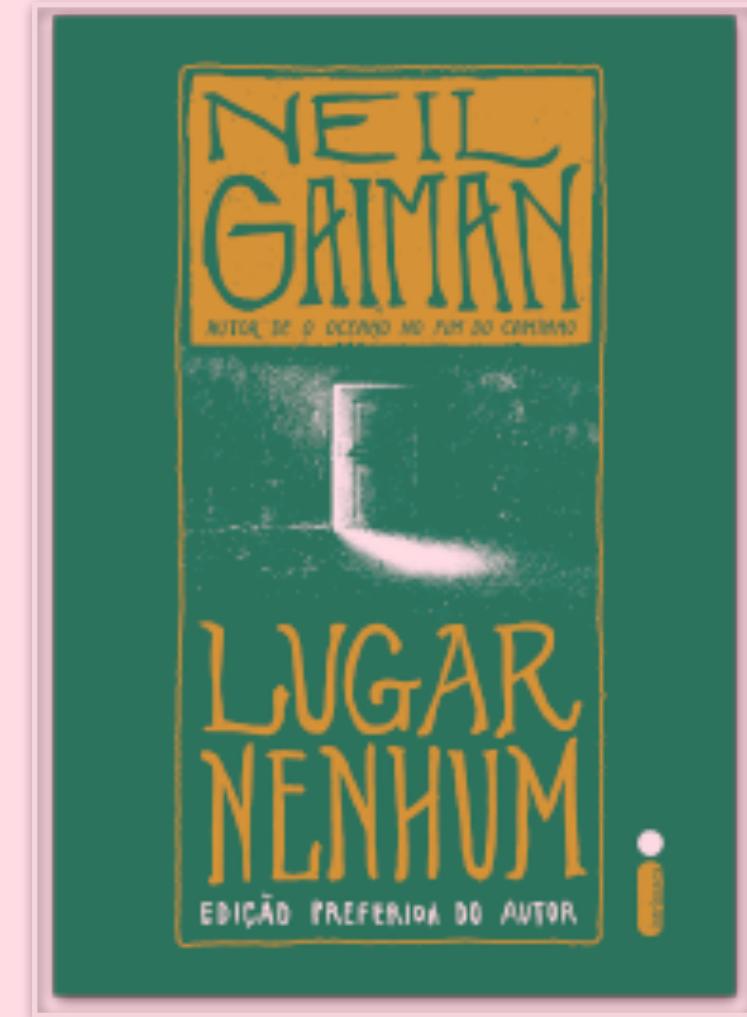
Newton Calegari

newton@nic.br

www.newtoncalegari.com.br

Trabalha no [NIC.br](#) e [W3C Brasil](#)

Livros:



Filmes e series:



Produtos:





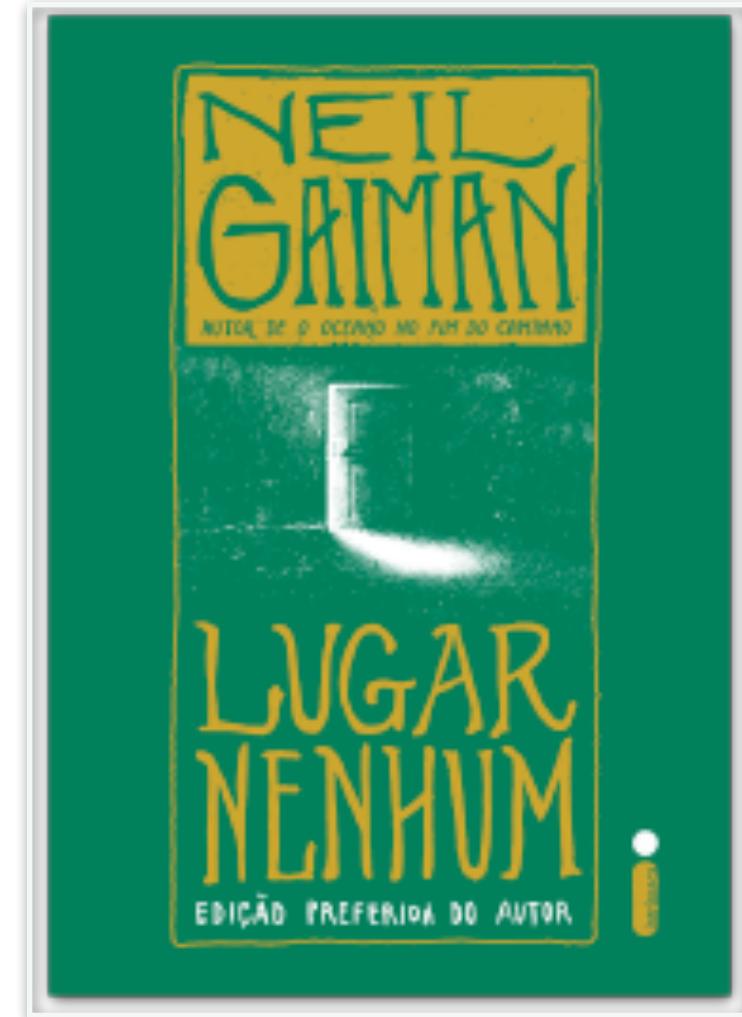
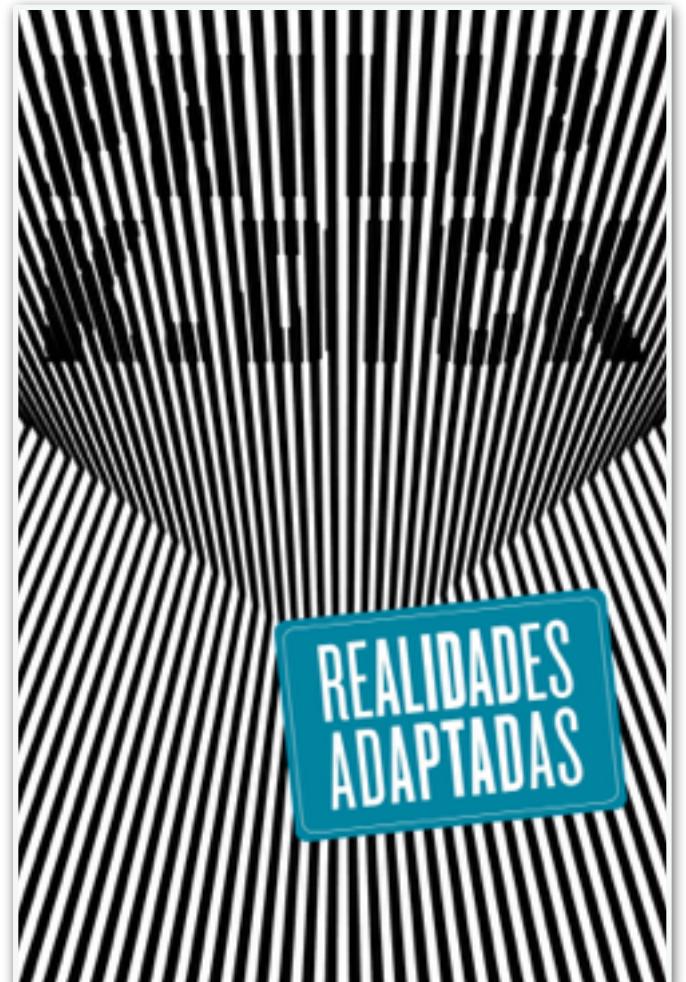
Newton Calegari

newton@nic.br

www.newtoncalegari.com.br

Trabalha no [NIC.br](#) e [W3C Brasil](#)

Livros:



Filmes e series:



Produtos:





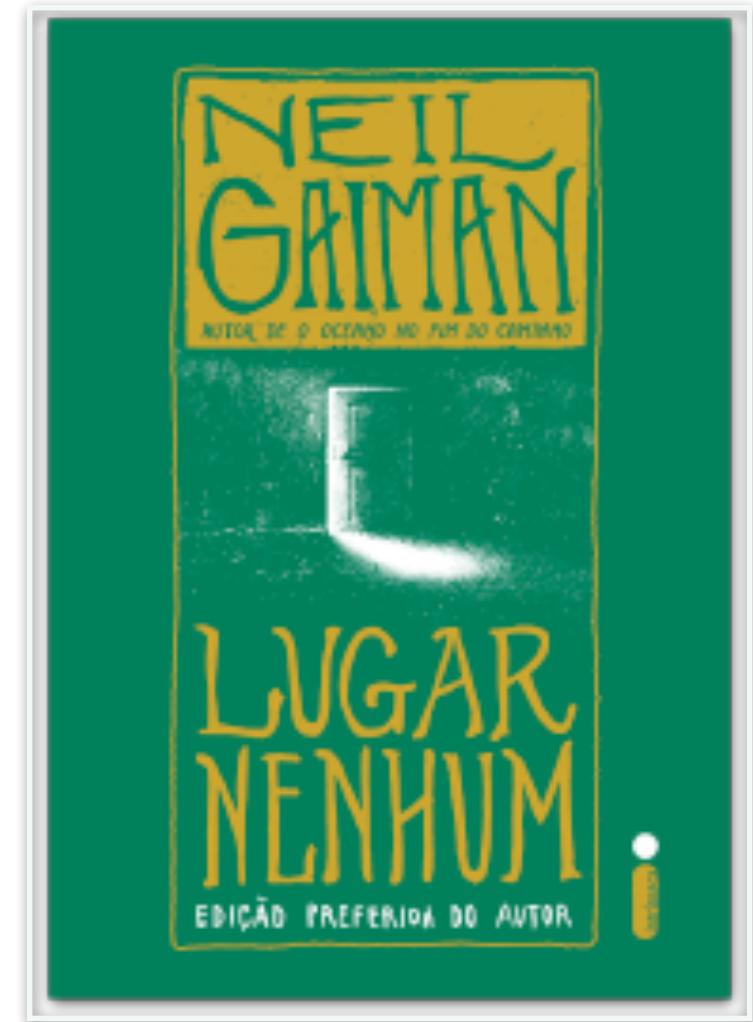
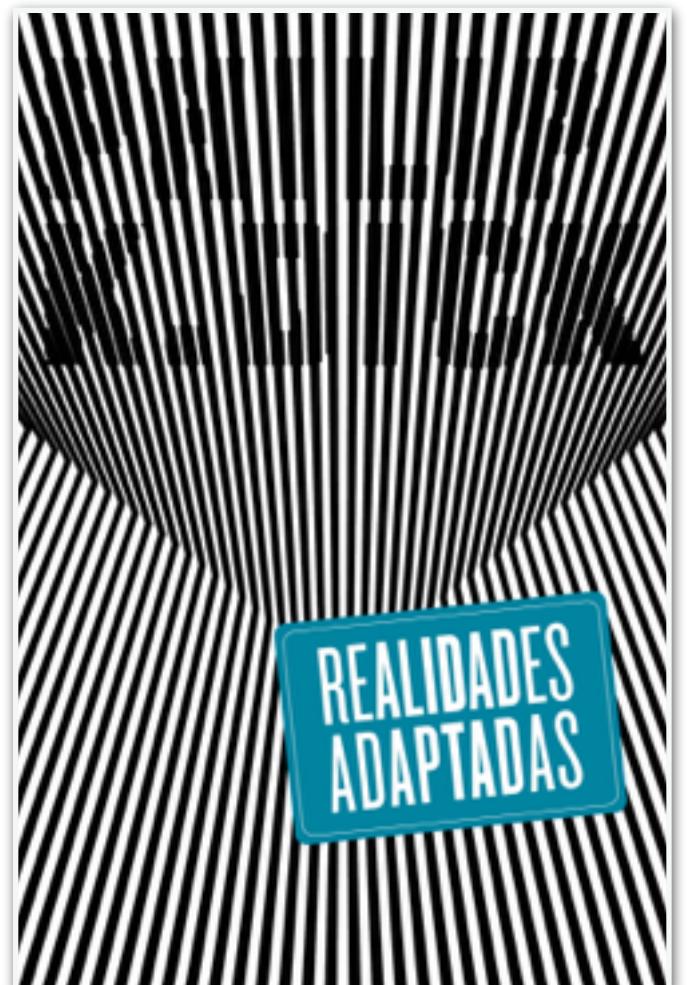
Newton Calegari

newton@nic.br

www.newtoncalegari.com.br

Trabalha no [NIC.br](#) e [W3C Brasil](#)

Livros:



Filmes e series:

Produtos:

