IS5103 Web Technologies

Practical

Due date: 09/11/2023 9:00PM

230013043

1. Introduction

Subject of this practical is to design a website consisting of three separate pages (a) using Responsive Web Design (RWD) and (b) mobile and desktop versions thereof in Adaptive Web Design (AWD). My website presents the film Interstellar, director Christopher Nolan, and actress Anne Hathaway.

2. Approach and Design Choice

2.1 General Remarks

I have structured my website in such a way that it represents an excerpt from the imaginary streaming platform "Nextflix". The film page consists of a large Interstellar theme picture with the film title, a brief description of the plot (IMDb, 2023), and some general information about the movie, including duration, genre, year, director, and the three main actors. Below this introductory information is a more detailed storyline, an embedded YouTube-trailer, an image gallery, an “About-the-movie”-section, some film reviews, and portraits with names and roles of the main cast. From a design perspective, the image gallery is based on a filmstrip, represented by a scrollable container that can be moved horizontally or vertically, depending on the screen size.

The actor and director pages are referred to as spotlight pages because they put the respective person "in the spotlight". That is why I chose to cut the portraits round. Both spotlight pages are structured similarly and contain the spotlight area at the top with a portrait, the person’s name and some background information (taken from the metadata set and from Wikipedia). After that, a biography, and a list of movies the person was involved in (Metadata Dataset). At the end of the spotlight pages there is a section with films that are available on Nextflix. The idea behind is that not all films a person was involved in are available on the streaming platform. The available films are presented on cards with a cover image, title, and a short description.

The film, actor, and director pages share the same navbar, with “spotlight” added after the Nextflix logo for the actor and director pages. Links between the three pages exist in the navbar and wherever reference is made to the respective page. From the user's point of view, I find it more convenient to have many links throughout the page than only in the navbar.

There is also a favicon for all pages with the "N" from "Nextflix". At the bottom of each page, there is an anchor to scroll back to the top.

2.2 RWD

I used Bootstrap as a responsive web framework. The overall structure of all the responsive web pages is built by containers in which I implemented a grid system, consisting of rows and columns. Some elements within the grid, such as the image gallery, the stars portraits on the film page and the Nextflix movie selection on the spotlight pages, were built with flexboxes.

My idea was to have a full-screen theme image with text overlay at the top of the film page and to scroll the text and the subsequent content over that image. To implement that, I set a

background image in CSS and created a full-width container with transparent background including the text. Below this container, I implemented a second full-width container with white background-colour. The container needed to cover the full width of the screen to fully cover the background image. I nested another Bootstrap-container inside which included margin by default. The remaining content starting from the storyline is nested into this container.

The Bootstrap-columns allowed me to set a breakpoint for when the content will wrap as the screen size decreases. The “order”-classes (e.g., in responsive-filmpage.html, line 185 and line 198) also allowed me to change the order of sections at a specific breakpoint because I wanted the sections to follow a specific order after wrapping.

The image gallery was created by a flexbox with nowrap and scrollable overflow. As the images I used had different sizes, I needed to specify width and height for all images inside the film-scroll-container and set object-fit to cover so that the images are not distorted and keep their original aspect ratio (W3 Schools, 2023). I added a media query to turn the horizontally into a vertically scrollable flexbox and adjust the image sizes as the screen size comes below 900px.

I implemented a navbar and two carousels by using the exemplary code published in the Bootstrap documentation (with own modifications). For the carousel next to the storyline, I had to set height and width of the image and the trailer for reasons of visual uniformity. However, one downside of setting the exact size of an image is that it makes the images less responsive as their sizes are fixed. I was able to fix this problem for the spotlight portraits in the actor and director pages by setting an aspect ratio so that the image can scale in size while keeping its aspect ratio.

2.3 AWD

For the desktop version, I chose a screen size of 1666 (width) and 844 (height). For the mobile version, I chose the iPhone 12/13 + Pro iOS 14.6 (width: 390, height: 844). To imitate the RWD as close as possible, I overrode the CSS default wherever necessary, e.g., by setting font-family and line-height for the whole body. Instead of using Bootstrap-classes, I created my own classes and specified them in my CSS stylesheet. A major consideration was whether to use grid or flexbox for the page layout. I decided to use grid-containers for the desktop version and flexboxes for the mobile version. The reason for that is that the grid seemed to be the better choice for two-dimensional layouts, while for one-dimensional layouts the flexbox is more suitable (MDN Web Docs, 2023). The mobile version is one-dimensional as it consists of only one column, i.e., I put all contents below each other, not next to each other, which is the case for the desktop-version.

I did not rebuild the collapsible navbar and the carousels implemented in the film page as I would have needed to use JavaScript for that, which we are not allowed to use. Instead, I chose alternative designs.

3. Challenges

3.1 Images

One of the first challenges I encountered was dealing with images of different sizes. I decided to use the URL of images from the IMDb-website and not to download every image, which has the advantage that I do not have to store additional data. On the other hand, this approach might be dangerous as I do not have the full control over these images (i.e., availability can be restricted as images can be taken off the host server). Using the URL, however, did not allow me to cut the images to a specific size, so I needed to specify image sizes in CSS.

3.2 RWD

One challenge in RWD was to make the website look nice for all different screen sizes. That was particularly challenging for text overlaying the background-image because I needed the text to stay in lighter areas of the picture all the time to stay legible. I was able to achieve this by adding a media query and adjusting the margin until it was suitable for almost all screen widths. However, I note that the positioning of the text in front of the image is not ideal in all cases, especially not for very small screen sizes. AWD, on the other hand, allowed me to align the text (and all other building blocks) perfectly for a given screen size.

The second challenge I encountered was about using Bootstrap. In my opinion, using the Bootstrap-classes had one downside: I did not know the exact CSS standing behind a specific Bootstrap class. Sometimes, it was difficult to choose the right class, or I attempted to use a combination of different classes until I achieved the desired result. Also, it made building the adaptive webpages more challenging, because I needed to guess the specifications for fonts, headings, paddings, and margins, for example. In addition to that, inheritance and specificity sometimes made it difficult to override the bootstrap default.

4. Testing

For testing and debugging, I loaded the webpage into the browser and used the inspector. To validate my code, I used the HTML and CSS validators (W3C, Markup Validation Service, 2013; W3C, CSS Validation Service, 2009). After eliminating all errors, only a language warning remains (see Figure 1) because I used “lorem ipsum” text.

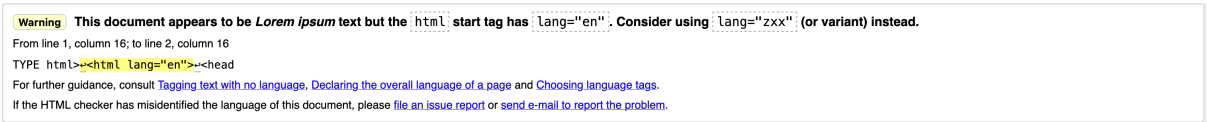

Figure 1: W3 Validator shows language warning due to the use of "lorem ipsum" text

5. Conclusion

Using Bootstrap was helpful in the beginning as the documentation gave me ready-to-use templates and some instructions. However, in the further course of developing I sometimes found it obstructive not to know the exact CSS behind Bootstrap-classes. Moreover, RWD has the advantage that it scales fluently with different screen sizes. On the other hand, AWD allows to build a website more accurately and to tailor the design perfectly to the screen size

with custom-built CSS. In my opinion, AWD is therefore the better choice for websites requiring an accurate and complex, custom-built structure.

Word Count: 1495

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All images were taken from the IMDb-galleries for Interstellar, Christopher Nolan, Anne Hathaway, Matthew McConaughey, Mackenzie Foy, and Jessica Chastain. The URLs can be found in the HTML and CSS files for each image.

The trailer is linked to the respective YouTube page.