

Washington State University  
School of Electrical Engineering and Computer Science  
Spring 2021

CptS 479 Mobile Application Development

**Homework 10**

Due: March 31, 2021 (11:59pm pacific time)

**General Instructions:** Put the entire app directory into one zip file and submit as an attachment under Content → Assignments → Homework 10 for this course on Blackboard Learn by the above deadline. Note that you may submit multiple times, but only the most recent entry submitted before the above deadline will be graded.

This homework will be a standalone version of HealthApp that allows us to download the latest headline health news from newsapi.org and view the articles in Safari. See screenshots below. Specifically,

1. Create a new Xcode project called HealthApp that has a table view controller embedded in a navigation controller with title “Health News” and prompt “Health App”. Add a bar button called “Update” in the upper right.
2. Create a NewsItem class with string properties for the news story’s source, title and URL, and an image property to hold an image pertaining to the story. All four properties should be optionals and the table should display a default string or image if the story does not provide this information. For example, the last row in the screenshots below is a news story that provided no URL to an image, so that row shows a default image.
3. When the app starts, and whenever the Update button is tapped, the app should make a URLSession datatask request to the following newsapi URL (where the ??? should be replaced by your personal API key from <https://newsapi.org>). You can use a different “country” parameter, or omit it altogether, if you want.  
`https://newsapi.org/v2/top-headlines?country=us&category=health&apiKey=???`
4. The response from the request will be a JSON object from which the app will need to extract each story’s title, source, image URL, and main URL. You can see an example of this JSON object at <https://newsapi.org/s/us-health-news-api>. If a story’s main URL is not available, then that story should be discarded and not appear in the table.
5. The general approach to updating the table is to create new NewsItem class instances for each story based on the initial response, but with the image property set to the default image, and then reload the table data source. Next, the app should attempt to load the images by following the urlToImage URLs. As each one returns, the app should create an image from it, load it into the corresponding NewsItem instance, and then reload the table data source. This way, the news story titles and sources will refresh quickly, and the images will refresh as they become available.

- The table view cells should use the “Subtitle” style. The cell should set the imageView to the image from the story’s urlToImage (or default image, if not available), the titleLabel to the story’s title, and the detailTextLabel to the story’s source name. Again, each of these should have some default value if the information is not provided in the response.
- If the user selects a row in the table, then the app should present a SFSafariViewController to display the main URL for the story.
- Test your app using the iPhone 11 simulator, which is the same simulator we will use to grade your app.
- Be sure that auto layout constraints are set so that all view elements are appropriately displayed with no overlap or trimming regardless of device orientation. Long titles or sources can be abbreviated with an ellipsis, and images may vary in their width (as seen in the screenshots below). You are welcome to use a custom table view cell that better controls the size and margins of images, but this is optional.

Simulator:

