



# COS 216 Practical Assignment 5

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- Date Issued: **24 April 2023**
  - Date Due: **29 May 2023** before **08:00**
  - Submission Procedure: **ClickUP**
  - Submission Format: **zip or tar + gzip/bzip2 archive**
  - This assignment consists of **7 tasks** for a total of **80 marks**.
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## 1 Introduction

During this practical assignment, you will be taking your Practical Assignment 4 with login functionality and making an Ionic mobile application. You will rely on your API and login functionality to work properly. **You do not need to cater for registration**, assume that the user is an already registered user. **Note:** Since this practical relies on PA4, all previously implemented functionality still needs to work.

After successful completion of this assignment, you should be able to create an Ionic mobile application version of the Car website you have developed thus far.

The specific Ionic pages for this assignment will showcase the following functionality:

- The Cars page
- A Search page
- The ability to refresh the page to get the latest data
- Login and Logout functionality

## 2 Constraints

1. You must complete this assignment individually.
2. You may ask the Teaching Assistants for help but they will not be able to give you the solutions.
3. You must use use Ionic with Angular for this assignment.
4. You must produce all of the source files yourself; you may not use any tool to generate source files or fragments thereof automatically (you may use default files generated upon project creation by the framework). **(This includes ChatGPT, and Bard)**

## 3 Submission Instructions

You are required to upload all your source files to ClickUP. Make sure that you test that your application works.

**NB: You must also submit a ReadMe.txt file.** It should include default login details (username and password) for a user you have on your API, as well as any bonus features you have implemented.

## 4 Online resources

**EVERYTHING** you need is in the docs. Ionic docs are amazing, so use them.

**Main Framework** - <https://ionicframework.com/>

**Component** - <https://ionicframework.com/docs/components>

**Native** - <https://ionicframework.com/docs/native>

**Toast (not the food kind)** - <https://ionicframework.com/docs/api/toast>

**Card** - <https://ionicframework.com/docs/api/card>

## 5 Rubric for marking

<b>Login and Logout</b>	10
<b>Menu</b>	
Routing	5
Navigation	5
<b>Cars</b>	
Dynamic	5
Layout	15
<b>Refresh</b>	
Layout	3
Refreshing	7
<b>HTTP</b>	20
<b>Design and Aesthetics</b>	10
<b>Upload</b>	
<b>Not uploaded to ClickUP</b>	<b>-80</b>
<b>Bonus</b>	5
<b>Total</b>	<b>80</b>

## 6 Uploading

You should only upload your source code. (i.e. Everything **except** *node\_modules*). Your total upload zip should not exceed 50MB. If it does, check that you are not uploading any node modules, but ensure that you upload source code. You will need to upload to clickUP.

**Note:** If you do not upload you will receive 0 marks.

## 7 Demo

You must demo your practical in your booked slot, ensure you arrive at least 5-10 minutes before your session starts so that you can set up if you demo from the lab PCs as you would need to install some of the packages you used in ionic which is not installed by default, for ease of installation make sure you include your packages in the package.json file, if you are installing packages with npm just add the "--save" flag and it will add it to the package.json. Then download your submission from ClickUP and run [npm install](#) in that folder of your source files and the necessary packages will be installed. Run "ionic serve --lab" and be ready for marking.

## 8 Assignment Instructions

**NB:** This practical must be done in Ionic Angular. Violating this will cause you to get **zero** for this practical.

### Task 1: Login and Logout ..... (10 marks)

Once a user opens your app they should be shown the [login page](#). This page should contain 2 text-boxes, 1 for the username and 1 for the password, and a login button. Your app will test against this through your login API functionality you designed in PA4. If you posted directly to the page in PA4 you may have to alter your code to work more like an API. You should fix your API if the login does not work correctly from PA4. (As a last resort you can remove the login functionality, but you will lose marks). Once a user logs out the generated API key from the login should be removed from memory.

You may also include a [Splash page](#) that appears before the login page when launching the app for bonus marks.

### Task 2: Menu Tabs Navigation ..... (10 marks)

You will make use of a [Bottom Navigation or Side Menu \(or equivalent\)](#) and have 3 tabs [Cars, Search, Logout]. The Cars tab will be the default page shown once the user has logged in. If the user is not logged in, the login page should appear. For the tabs you may use the "Tabs ionic" template as a jump start to get your application running. <https://edupala.com/ionic-tabs-example/>

### Task 3: Car Layout ..... (20 marks)

Here you will need to mimic the PA4 design in Ionic. Your [Car data](#) should not be hard-coded, but rather added dynamically (remember to indicate that data is loading. This can be with simple text, but having a loading screen would be better). You also need to include the [search functionality](#) as well on a separate page. You don't need the filter functionality. Adding more pages like the Find me a car page can earn you bonus marks, or bringing more features from the 'main' site over to mobile.

### Task 4: Refresh ..... (10 marks)

The refresh functionality is used to [retrieve the latest data from your PHP API](#). This functionality is [triggered using a pull down swipe](#) on the phone to trigger the page data to be refreshed (as is typical Android style). You should also make use of a [toast message](#) to notify the user that the latest data has been fetched.

### Task 5: HTTP and Data Manipulation ..... (20 marks)

As with most apps, data needs to be requested from the server. You will [make use of the HTTP POST method to fetch the data from your PHP API](#) that you have developed. **Note:** Remember that each request needs to have the API key. You will also need to display any error messages or problems using Ionic toasts. <https://ionicframework.com/docs/api/toast> You may also make use of the native HTTP request (<https://ionicframework.com/docs/native/http>).

### Task 6: Design and Aesthetics ..... (10 marks)

Your app needs to look well-designed and be aesthetically appealing, therefore pay special attention to the following:

- Colour
- Font size
- Padding
- Material Design
- Overflow of text
- Responsiveness

- Use of UI elements

**Note:** For this practical you are not required to build an apk or run an emulator, you can simply demo from ionic lab view in the browser.

**Task 7: Bonus** ..... (5 marks)

What you need to show here in order to get marks is additional functionality, mobile standardization and UI conformity or nice-to-have "wow" features. Simply having nice colours will not get you extra marks.

You can also earn extra marks for the following:

- displaying a Splash screen with cool animations on the app launch.
- including the Find me a car/Compare part of the practical.
- creating local storage for the API key such that the user does not need to login every time the app is launched. The storage should be cleared when the user logs out.
- more advanced search functionality / filter functionality.
- having a working APK



Reference: [https://www.redbubble.com/i/sticker/](https://www.redbubble.com/i/sticker/GLOOTIE-Do-you-want-to-develop-an-app-by-janlangpoako/42972025.EJUG5)

*GLOOTIE-Do-you-want-to-develop-an-app-by-janlangpoako/42972025.EJUG5*  
Character IP of Rick and morty(Adult Swim)