

Enterprise Application Development 2024B

Lab Test 1

Total marks: 30

Time: 3 hours

Rules:

1. Students must record their **entire screen** as a video recording
2. Students CAN NOT use AI generator tools such as Copilot, Gemini, or ChatGPT.
3. No discussion or exchange of ideas in any form. External support is strongly prohibited.
4. Students put **all the answer files into a folder, zip it, and submit the zipped file**. If you use React, do NOT include the node_modules folder into the zip file.
5. Sharing or disclosing lab test questions to forums or Q&A platforms is prohibited.
6. Students should make their assumptions based on common sense. **Do not ask questions that are straightforward** as it can slow down your and others' progress.
7. **Students can use any HTML, CSS, or Javascript framework to do this question**

Test Description

You are tasked to develop a webpage to show the List of Staff for a company named WonderCar. To simulate the users, you will call GET <https://randomuser.me/api/?results=20> endpoint. **Display the 20 users** in the Staff Panel below the search bar by calling the REST API of randomuser.me.

The test has four levels of requirement from easy to difficult.

Level 0 Requirements (2 points)

1. For React-based app, you must separate the **REST API Service** and **React Components**. Every component must have an optimal size to support reusability and maintainability.

2. Internal CSS Styling is permitted only inside optimal sized React Components. Otherwise, internal and inline CSS styling are discouraged.

3. Separation of Concerns for plain HTML, CSS, and Javascript application.

- Your solution shall contain **at least 3 files**: HTML, CSS, and Javascript
- The CSS file contains all the styling of the page
- The Javascript file contains all the Javascript functions and variables used by the HTML page
- The HTML file declares HTML elements and includes the CSS and Javascript files

Level 1 Requirements (13 points)

Figure 1 displays the basic wireframe of the page:

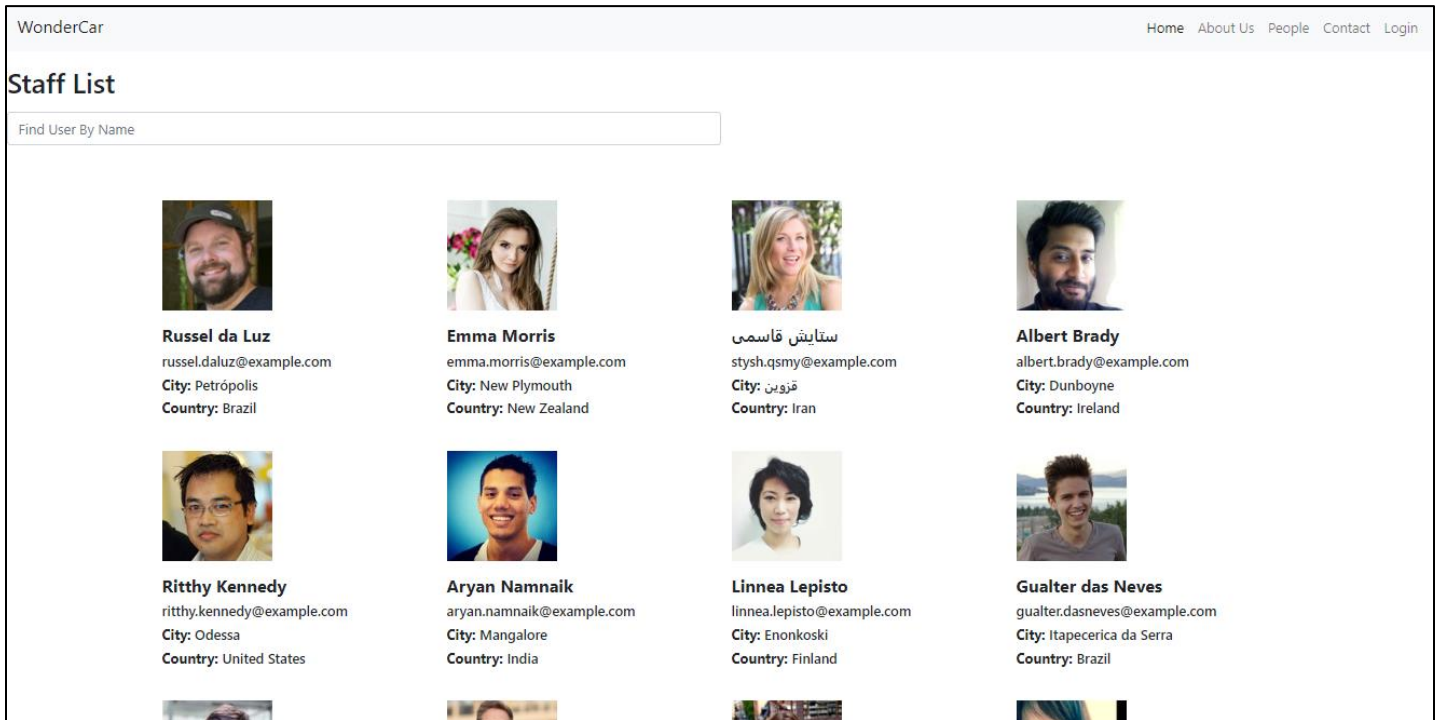
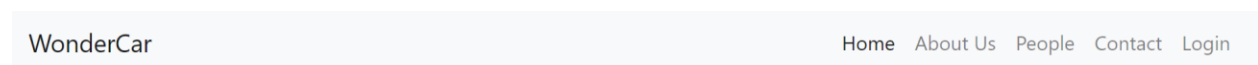


Figure 1: Staff List Page Primitive Design

You are required to implement the page based on the above design. The components of the page are as follows:

1. Navigation Bar



In this component:

- The company name on the **top left** of the bar
- There are five navigation options: *Home, About Us, People, Contact, Login*
- Make the **Home** option **active**
- Each Navigation Option has NO link to any other page
- The five navigation options are placed **on the rightmost side** of the bar. There are whitespaces between navigation options

2. Page Title

- The title of the Page must be "Staff List" and placed **below the navigation bar**

3. Search Field

- A search bar with the **width** is half of the screen width
- The search bar has a **placeholder** as “Find User By Name”
- There are gaps between the Page Title, navigation bar, and search bar

4. Staff Panel

- A table of 20 staff **that must be retrieved from randomuser.me**.
- Each staff is displayed as a card, with their *portrait on top*, followed by their *name, email, city, and country*.
- You shall use the image with the highest resolution to display the portrait

5. Report Error When No Staff Data is Available

- In case an exception occurs while requesting the randomuser.me API. The Staff Panel shall display an error message, stating 'An error occurs while retrieving our staff data'.

Level 2 Requirements (9 points)

1. Responsiveness - Staff Panel

- In a standard PC size: display 4 staff per row
- In a tablet screen size: display 3 staff per row
- In a mobile device screen size: display 1 staff per row

See [Figure 3](#), [Figure 6](#), and [Figure 7](#) at the end of **Level 3 requirements** for the expected design based on different screen sizes.

Tip: You can quickly test responsiveness by resizing the browser windows

2. Staff Panel Decoration

- Portrait pictures are in a **circle** shape, **NOT square**.
- When **hovering** on the **staff card**, the background color changes to light grey

3. Center Alignment

Except the navigation bar, the following components of the page are center aligned:

- Page title
- Search bar
- The image, name, email, city, country are **center-aligned**.

4. Responsiveness - Search Bar

- In tablet & PC screen: the search bar width is **50% of the screen width**.
- In mobile devices: the search bar width is about **83% of the screen width**

5. Responsiveness - Navigation Bar

- In tablet & PC screen: displays **5 menu options**
- In mobile devices: displays a **hamburger menu**, which shows the 5 menu options upon clicking. See [Figure 2](#) below

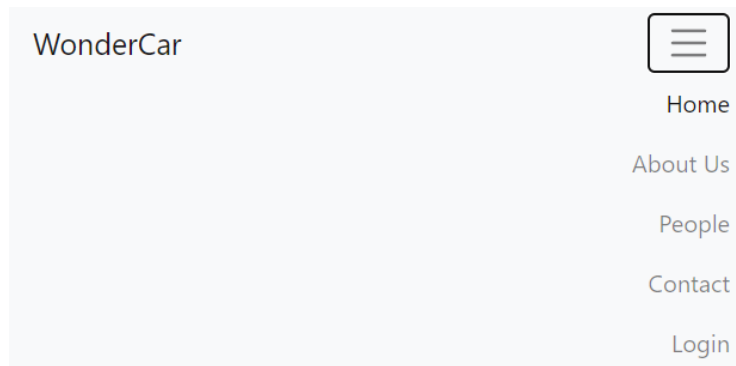


Figure 2: Hamburger menu that expands options upon clicking

6. Search Bar (Solving Level 3.1 and 3.2 successfully grants you the points for this subtask)

- Used to search users by name
- The search bar can have a search **button** next to it. When clicking this button, the page shall display the staff **whose first name OR last name contains the search term**. The search is **case-insensitive**, see the Example in the subtask 1 of **Level 3 Requirements**.
- When the search bar is **blank**, i.e., it has no character or contains only whitespace, clicking the search button shall display the **original list of users**.

Level 3 Requirements (6 points)

1. Filter Staff by Name without Clicking the Search Button

- When the user inputs any character on the search bar, the page shows only staff with the **first name OR last name** containing the search term that the user types in the search bar. **The search is case-insensitive**, i.e., the staff's full name contains the characters in the search term without concerning the casing of the characters.


For Example: assuming we have three staff names, Andy Barner, Sophie Ling, and Harry Donald. When the user types "a" in the search bar, the webpage displays the cards of Andy Barner and Harry Donald. When the user types the next character "n", the search term becomes "an", so the webpage displays the cards of Andy Barner only. See [Figure 4](#) as an example.

The page shall automatically render the Staff Panel **right after the keyboard is pressed**. The user must **NOT click on any button or click outside of the search field to get the filtered staff list**.

2. Display the Original List when the Search Bar is Empty

- When the user deletes all the characters in the search bar, or when the search bar contains no character, the page shall display **the original list** of 20 staff. **If after emptying the search bar, your page displays a different set of staff, no point is given for this subtask.**

3. Show the Staff City on a Map API upon Clicking the City Name

- Add a location marker  next to the city name.
- The city name has a link to the city location on a Map Service page, e.g., Google Maps, Open Street Map.
- Clicking the city name opens the Map Service page in a **new tab**, showing the location of the **city** in the **country** of the staff on the map. See an example in [Figure 4](#) and [Figure 5](#).

Note: Some cities are not displayed properly as they are not found in the Map API. Try clicking the city of a different staff to test if your code works.

Hint:

- **NO Map SDK or dedicated Map API** is required to complete this subtask
- Observe how the Map platform loads different cities in countries

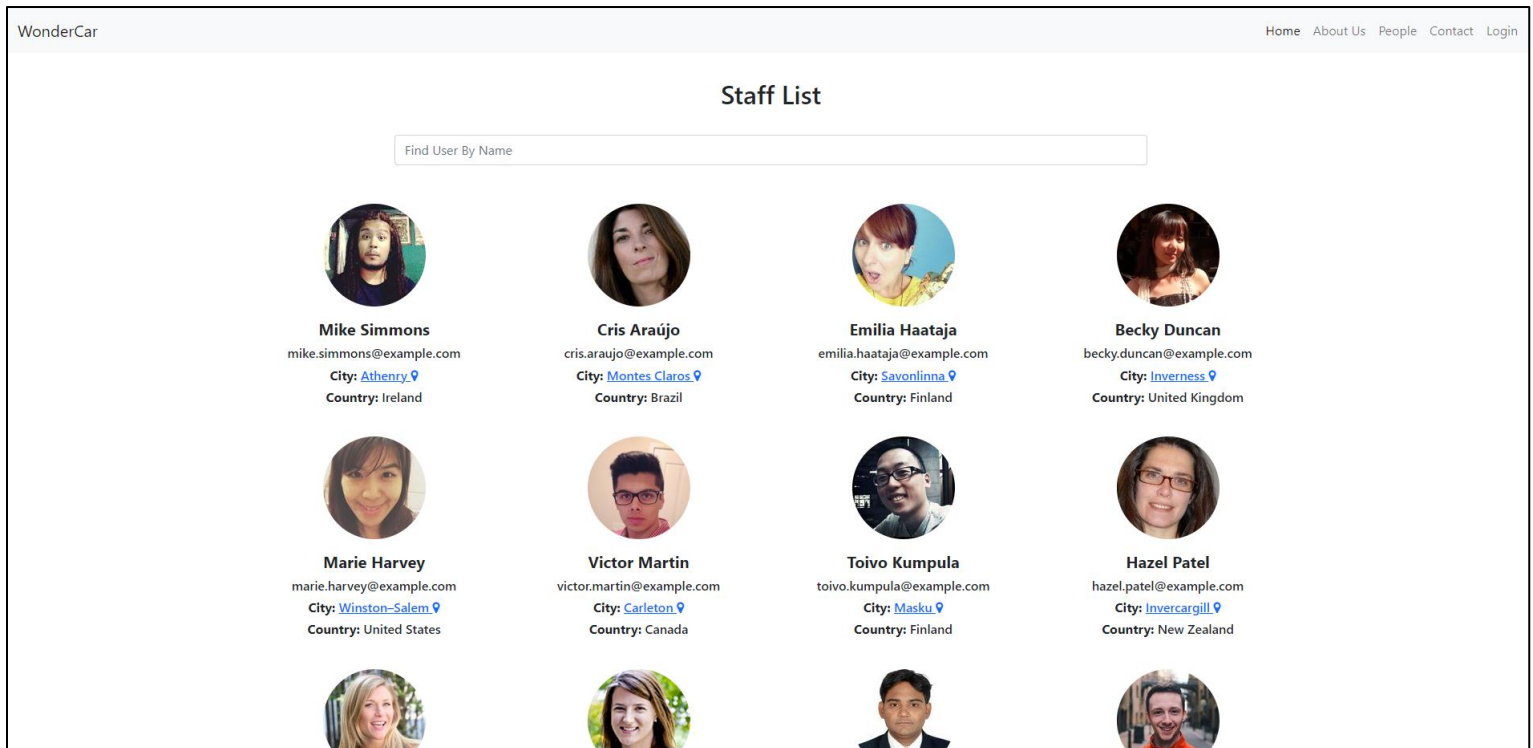


Figure 3: Expected Final Design of the Page on Laptop Screens

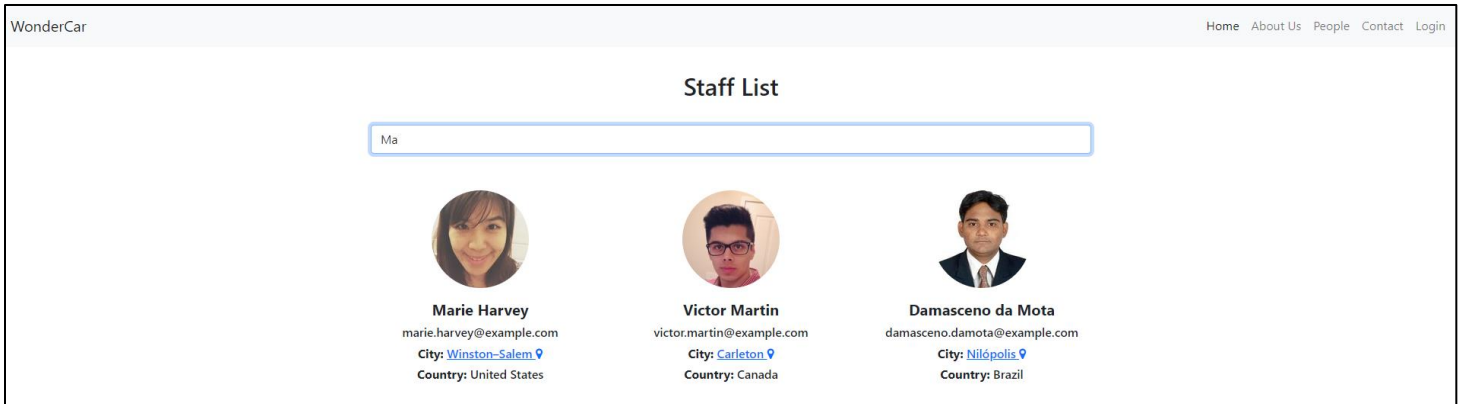


Figure 4: Filtered List of Staff based on the Search Term. When finding "Ma", Marie Harvey, Victor Martin and Masceno da Mota **match** the search term, as the search is **case-insensitive**.

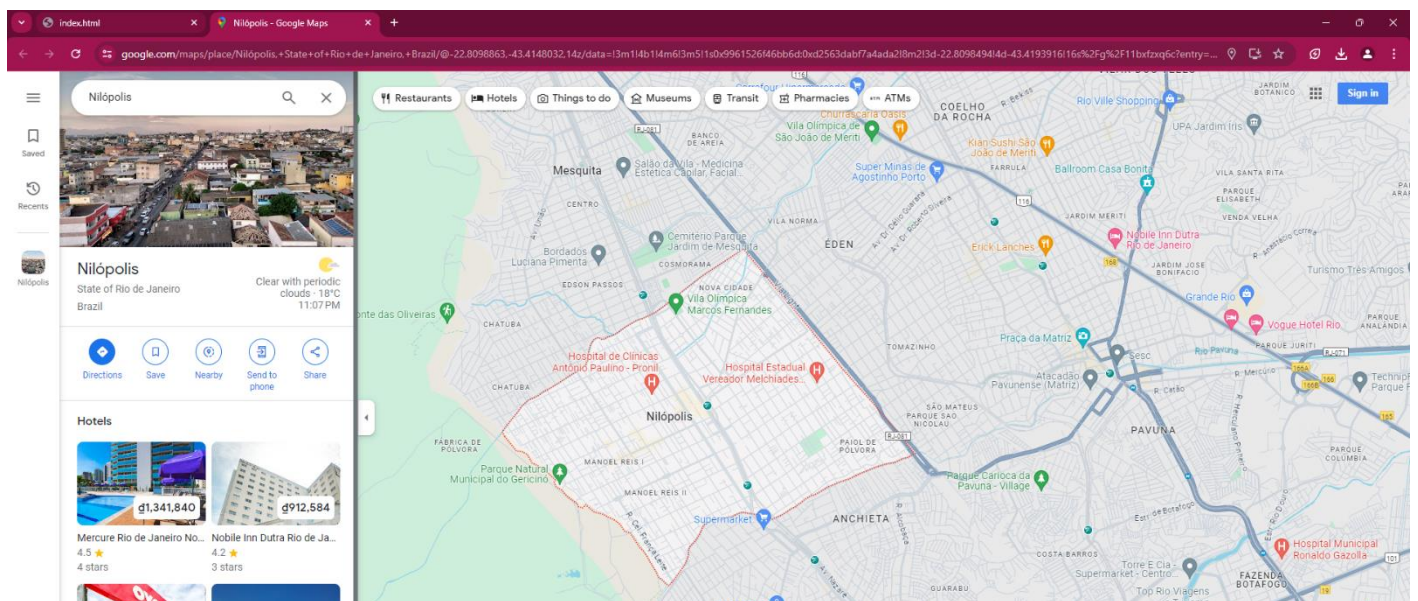


Figure 5: Clicking a City in a Staff Card opens the Map Service Page in a new tab. In this example, clicking the city of the third user in **Figure 4** shows the location of Nilópolis in Brazil on Google Maps.

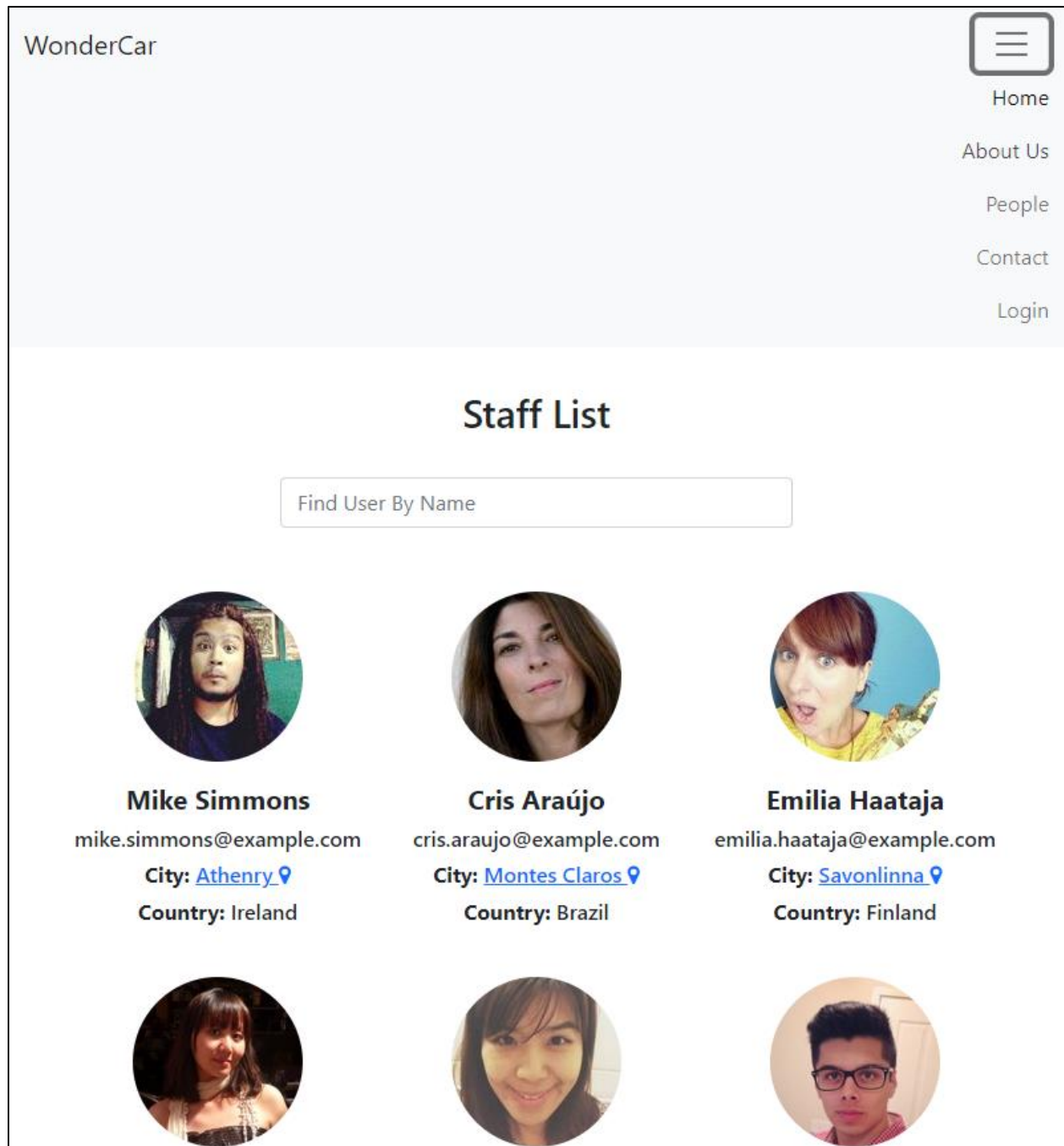


Figure 6: Expected Design for Tablet Devices, Note the Hamburger Menu Expansion does not overlap the Page Title, Search Bar and Staff Panel.

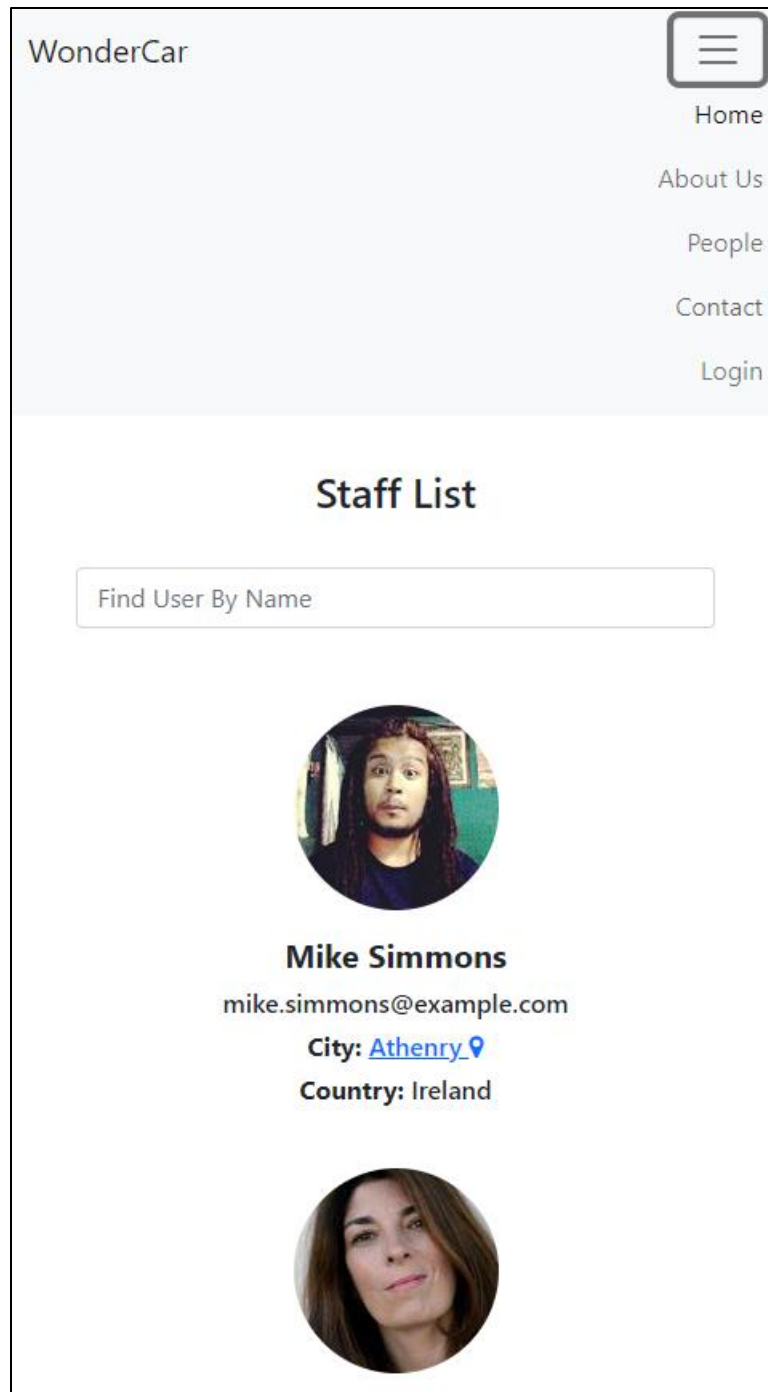


Figure 7: Expected Design on Mobile Devices. Note the Hamburger Menu Expansion does not overlap the Page Title, Search Bar and Staff Panel.

END OF LAB TEST 1 DESCRIPTION