COMP2140 – Web/Mobile Programming

Lecture Week 10: Introduction to A3 & Getting Started

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Assessment summary

Category	Assessment task	Weight	Due date
Participation/ Student contribution, Quiz, Tutorial/ Problem Set	Weekly Activities Online	10%	2/08/2024 - 11/10/2024 Weekly activities are due on Friday at 3:00pm.
Computer Code, Tutorial/ Problem Set	JavaScript Functional Programming	30%	30/08/2024 3:00 pm
Computer Code, Project	React Web App	20%	4/10/2024 3:00 pm
Computer Code, Project	React Native App	20%	4/11/2024 3:00 pm
Computer Code, Practical/ Demonstration, Reflection	Code Reviews Hurdle Identity Verified In-person	20%	The React Web App Review will occur in Week 9. 16/09/2024 - 20/09/2024 The React Native App Review will occur in Week 13. 21/10/2024 - 25/10/2024

A hurdle is an assessment requirement that must be satisfied in order to receive a specific grade for the course. Check the assessment details for more information about hurdle requirements.

https://course-profiles.uq.edu.au/course-profiles/COMP2140-60373-7460#assessment

What do you need to build?

Table 1: Available Project Options

Project Name & Description	Main Features of StoryPath Player React Native App
StoryPath StoryPath is a location experience platform designed to allow users to create and explore virtual museum exhibits, location-based tours, and treasure hunts with clues. The platform features a Web app built in React that enables users to author these experiences (React Web Assessment Item), and a React Native App called StoryPath Player for deploying them (React Native Assessment Item), making it easy to bring location-driven narratives to life.	- Allows participants to enter their name and upload a photo (Profile) - Allows participants to view a list of published Projects and select one to participate in - Allows participants to read instructions and follow clues to find Locations - Scores participants based on either entering the radius of a Location or scanning a QR code - Allows participants to view their location on a map and see the locations they have unlocked - Allows participants to see their score and number of Locations they have unlocked - Allows Admins to view the number of participants in a project and the number of participants that have unlocked/visited each location
Custom Project Guidelines • A map must be included in the React Native Project which will complement the React Web Project. • You will need to provide your own API to store and retrieve your data. You can use external services or deploy an API to your own UQ Cloud Zone. If you are already familiar with React, you might like to explore Next.js and build your front-end and back-end with it. The Teaching Team have used PostgREST (https://docs.postgrest.org/en/v12/) for the API and have provided a self-paced tutorial on making an API.	

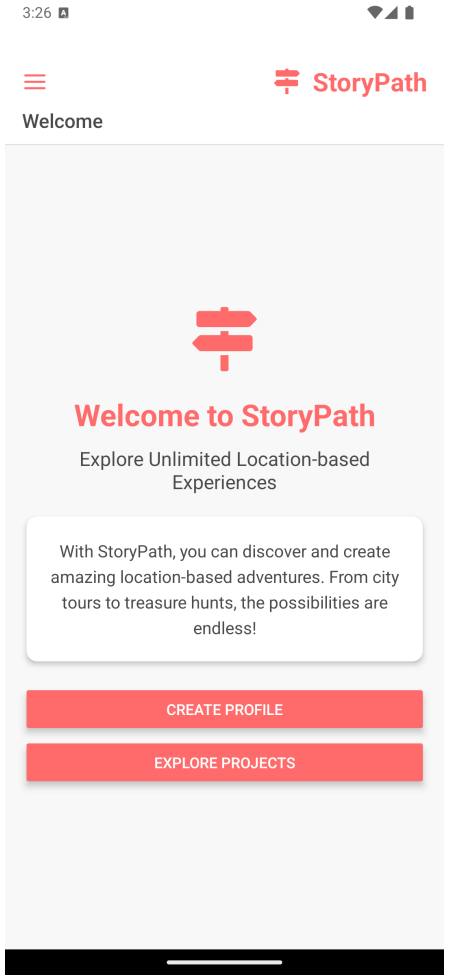
From the Rubric

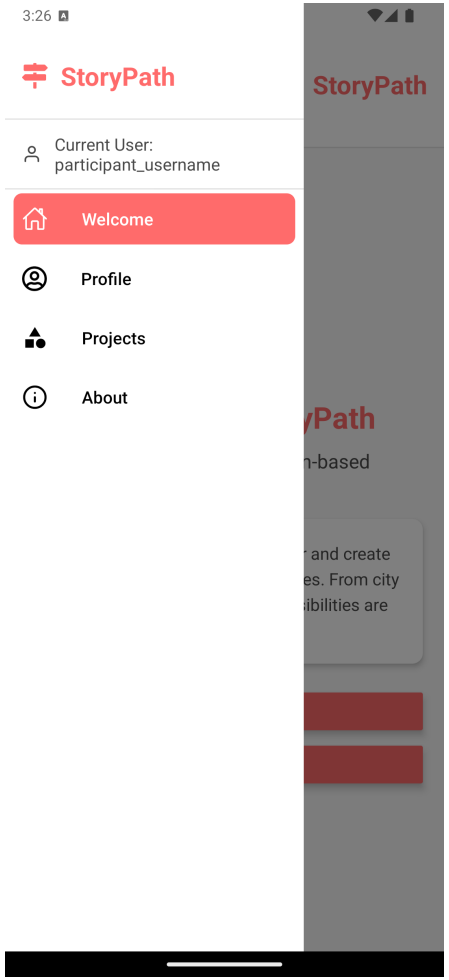
Example Screens

Some Guidelines to for viewing Sample Screens

1. They are sample screens.
2. You need to design your own layout and look and feel using a CSS Framework or custom Styles.
3. The sample screens are not designed for usability and don’t include too many user instructions. You will need to include these in your app.

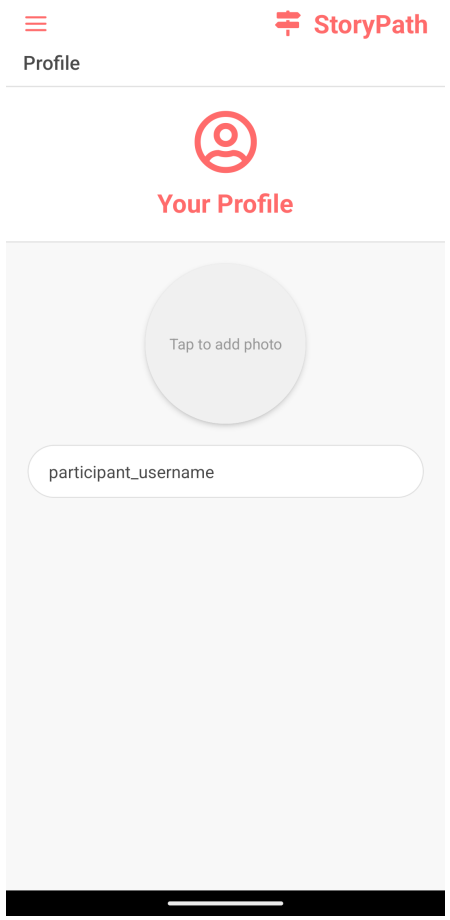
The App Drawer Navigation





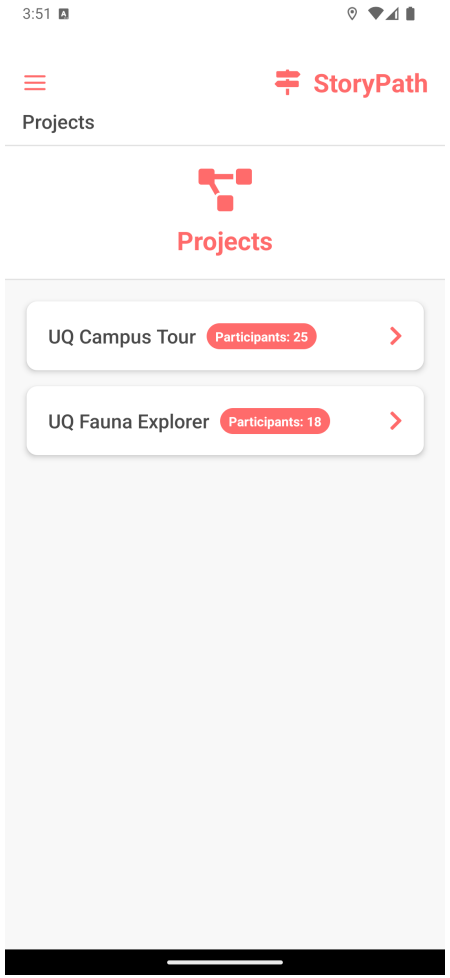
1. Drawer nav is used.
2. The Drawer and Tabs example code from the Week 10 Lecture will be a big help.
3. The Current User's username is displayed on the Drawer. This is set on the Profile page.

The Profile Screen



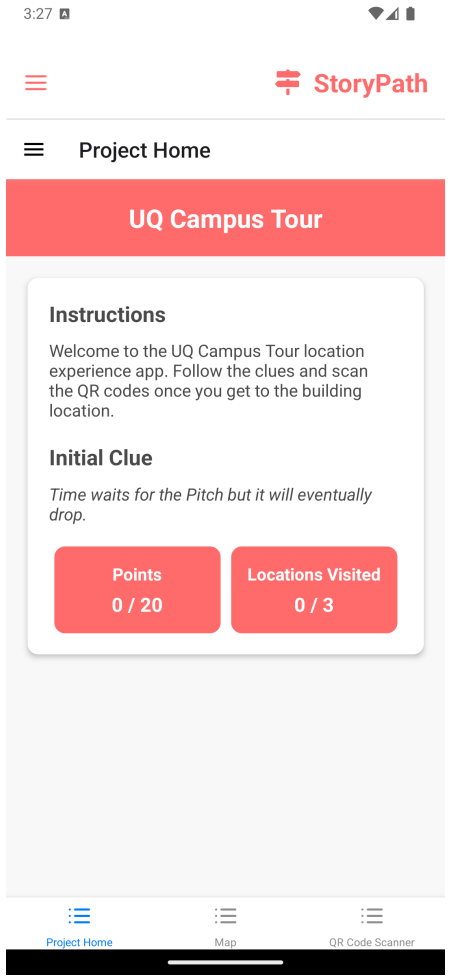
1. An Image picker is displayed where the user can select an image.
2. The user must enter a username. This will be used to track participants using the Tracking API endpoint in the participant_username field.
3. The Tracking API endpoint was added for A3.

The Projects List Page



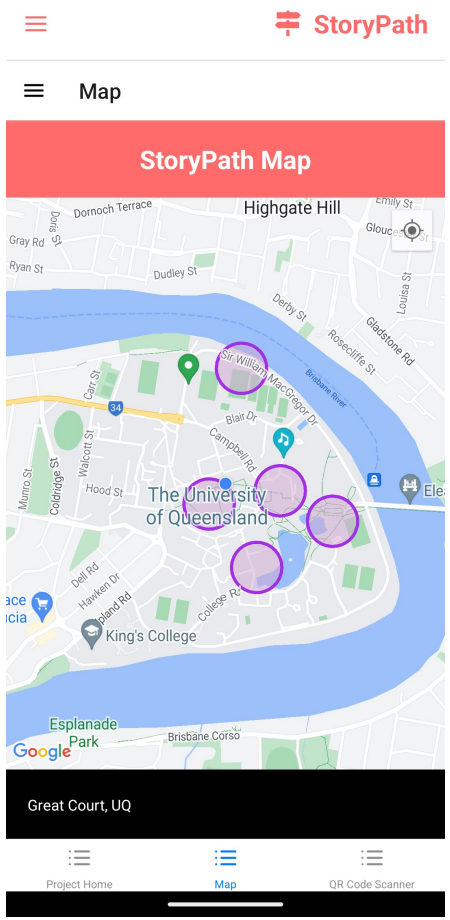
1. The Projects screen displays all the Published projects.
2. The number of participants that have participated needs to be included which can be obtained by providing query parameters to the Tracking API endpoint.

The Project Homescreen



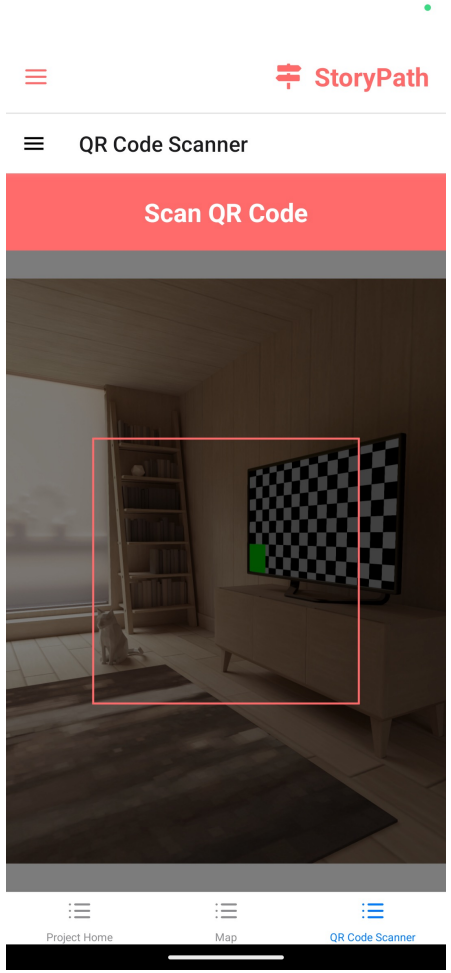
1. This Screen implements the logic from the Preview in your React Native app.
2. It needs to track participant score/points using the Tracking API.
3. It needs to detect location changes and display the location_content field using the WebView component.
4. There are tabs to return to the Project homescreen, go to a MapView and go to an in App QR Code.

The Map Screen



1. The Map displays visited locations.
2. If no locations have been visited it just displays the users location.
3. Using a MapView component, drawing markers and detecting the users position is covered in the Week 11 Contact.

The QR Code Scanner



1. Including the QR Code Scanner in App is covered in the Week 12 Contact.
2. The QR Codes should encode the project_id and the location_id.
3. A scanned code should trigger the content at that location to be displayed and the user should be tracked.

How do I get started?

How do I get started? (part 1)

1. Read the Assessment Brief/Rubric. See where the bulk of the marks are allocated.
2. Start early and get Expo Go and your Mobile Emulator Setup. Do this early as you can encounter issues. (Follow the Week 10 Contact and reach out if you encounter issues)
3. Use Vite to create the starting React Project
   e.g.
   ```
   npx create-expo-app@latest my-first-native-app
   cd my-first-native-app
   npm run reset-project
   npx expo start
   ```
4. Review and understand the file structure of the generated app.
5. Setup your App's navigation (Follow the Week 10 Contact and the Drawer/Tabs Nav example from the Week 10 Lecture)
6. Design your UI using React Native components. You can make your own styles or use something like NativeWind. See the Rubric for more examples.

How do I get started? (part 2)

7. Integrate your API.js code from your React Web Assessment Item.
8. Build the Projects List screen. It needs to show the number of participants that a participating in a Project.
9. Build Project Homescreen.
   Spend time to design how you store state, interact with the Tracking API and display the location_content HTML. The Project Homescreen has the most marks for functionality.
   It needs to implement the functionality from the Preview in React Web.
   It needs to load all the Locations and follow the Project settings for displaying the Homescreen. It needs to score and track participants using the Tracking API endpoint.
   It also needs to detect Location changes and display the location_content field using a WebView Component (Week 11 Contact).
10. Build the Map page. This uses a MapView (Week 10 Contact). It displays markers for visited locations with a radius.Build the QR Code Scanner. (Week 11 Contact). It can scan QR codes in app, and trigger the display of Locations (i.e location_content), track and score the participant.

StoryPath RESTFul API Tracking

Storypath RESTful API

https://0b5ff8b0.uqcloud.net/api/

- New Tracking Endpoint
- Review PostgREST documentation for how to only get Projects that are published and get a count of the number of participants
- It will save time to get the API to do these calculations/processing instead of using React code to do it.
- https://docs.postgrest.org/en/v12/

Tips

- A lot of the code is given in the Week 10, 11 and 12 Contacts as well as the Lectures from Week 10, 11 and 12.
- Starting early will be a big help as will working on the project each week.
- Make sure you setup Expo Go and your emulator early! It can take a while depending on your laptop. We've tried to make the Contacts more detailed.
  - Reach our early to get assistance.
  - The Teaching Team will do everything possible to try and assist you!
- Once you have installation working, then get your app navigation setup.

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A3 Q&A

Thank you