

Further Web Programming
COSC2758/COSC2938 (semester 2, 2022)
Assignment 1

Assessment Type	To be attempted <u>individually</u> OR in a <u>group of 2</u> . Submit online via Canvas→Assignments→Assignment 1. Marks awarded for meeting requirements as closely as possible. Clarifications/updates may be made via announcements/relevant discussion forums.
Due Date	Week 5, Sunday 21 st August 2022, 11:59 pm <i>Melbourne time</i>
Mandatory Demo	Week 6 (NO DEMO → NO MARKS). <i>Schedule to be announced during 5.</i>
Marks	25

1. Overview (you must read this first)

You will use React with JS to create a *client-side prototype of the web application*. **No database** is to be used at this stage.

The server-side implementation and full-stack development of the web application from assignment 1 will be completed in assignment 2.

The tasks are divided into *four* parts: PA (Pass), CR (Credit), DI (Distinction) & HD (High Distinction).

The DI & HD section tasks will require self-research, you will not get straight answers in the course material. While we are happy to assist you on those tasks, most of the work and research must be done by you. This is done on purpose to prepare for your future work and rigours of the IT industry.



If you find a specification open to interpretation, post a query identifying the specification in the corresponding discussion board for assignment 1. Software development in real life does not come with a definitive roadmap and flowcharts complete with instructions. More often than so, it is the job of the developer to clarify requirements from the client. For the purpose of this assignment and course, the lecturer is considered as the client.

All of us have been affected by the unfortunate COVID-19 scenario and its aftermath. It is often hard to concentrate and study; but as a student enrolled in this course, it is your responsibility to regularly attend lectorial, lab and consultation session(s).

- Bring your questions to online discussion board, consultation sessions
- Watch the online recordings on a regular basis if you cannot attend the live sessions.
- Do NOT start the work on assignment at the last minute.
- Do NOT ask for last minute extensions, these are often rejected. Extensions can only be granted for personal and medical reasons, provided you can supply some evidence.

2. Learning Outcomes

This assessment relates to the following learning outcomes of the course:

- demonstrate proficiency with a web application development framework
- implement a range of techniques and procedures for developing a small to medium-scale web application
- design and manage the development life cycle of a complete application.

3. Assessment details

COVID-19 pandemic has made a massive impact on our lives. Many of us are still reeling through emotional aftermath of the earlier lockdowns, ongoing challenges posed by the pandemic and fear of getting sick. While the public health actions, such as social distancing, are necessary to reduce the spread of COVID-19, they can make us feel isolated and lonely and can increase stress and anxiety. Most people still feel comfortable operating on online basis only. According to a report published by Deloitte titled 'Media Consumer Survey'- both 2020 and 2021 were the years of digital acceleration for many industries and businesses- social media platforms being at the forefront.

IT consultancy firm called as **Loop Agile (LA)** is a fast-growing firm with offices in major metropolitan cities in Australia. LA specialises in the design, delivering and managing innovative data & analytics, customer engagement and cloud solutions that help to sustain competitive advantage. Their employee base is growing rapidly and owing to restrictions posed by COVID, many of the staff members work fully online. Employees often liaise with other colleagues, middle to senior level staff to discuss questions, queries, issues and suggestions about the projects undertaken, innovation in the related IT fields and general topics. Often, this is done via text messages, apps, social media forums and personal conversations. While these may not be seen as an important part of an employee's routine by many; sometimes these networks serve a very crucial role thereby enabling a *community of practice*. There are other issues associated with having these discussions on external websites/forums as it may lead to all sorts of issues around ethics and in some serious cases- contravention of firm's policies and professional ramifications.

For all the above reasons, you have been approached by a senior representative of LA who have secured a funding to build an intra-firm social media website known as **Loop Agile Now (LAN)**.

At this stage, LAN will help the employees to make a post, reply to other posts and maintain their profile details. The details are as follows:

3.1

LAN should support the following features:

- a. Frontend features of the prototype such as complete UI (user interface) with clearly distinguishable areas: *header, footer, main areas and navigation bar*
- b. Landing home page
- c. Sign up page that only performs validation and creates user
- d. Sign in page
- e. For logged in users
 - i. user profile page, edit and delete profile details
 - ii. a page to make posts
 - iii. Feature that enables logged in users to reply to a post or create, edit, delete posts

3.2

All the data will be stored in data structures or HTML5's localStorage. **Use of databases** (MongoDB, Relational databases and/or Firebase) **is not allowed**.

3.3

The website must be fully styled and look professional. The content must make sense i.e., use of *lorem ipsum* **is not allowed**.

3.4

The digital assets (images, icons, audio & video) must be outsourced from free websites. You should not steal someone else's assets to enhance the look and feel of your website. High-quality & free assets can be obtained from:

<https://unsplash.com/> (Images)

<https://uifaces.co/> (Avatars)

<https://fonts.google.com/icons?selected=Material+Icons:home> (Icons)

<https://www.flaticon.com/> (Icons)

3.5

Do not add extra features at this stage. **Do not argue the benefits of using backend database and any other complexities for this assessment.** You will deal with these aspects of LAN in the second assignment which deals with full stack development.

4. Tasks



In order to proceed to higher parts, you must complete all of the specifications in the lower part, you must not cherry pick specifications from various parts. As an example, complete all of the specifications in PA part before proceeding to CR part and so on.

Create a client-side prototype for LAN web application with FUNCTIONAL React using JS or TS *with the latest version*, using hooks.

Use of object-oriented or old React will FETCH A ZERO for the whole assignment.

The use of databases (MongoDB, Relational and Firebase, etc.) is not allowed.

The tasks are shown below:

PA part [13 marks]

a. (5 marks) **Styling and content of pages and landing page**

Set up the complete layout of LAN. You should **not** use readymade online templates; you MUST create your own template using CSS or any styling library. Use of a questionable library will be questioned during demo.

Your web application must have clearly distinguishable areas such as- *header, footer, main content area* and/or other *sections*. These areas must be broken into individual components.

The landing page of VC could be a brief information about the website's purpose, how to use the website and an appropriate image.

You will be marked on the styling, layout and how components are defined for this part. Writing bloated components, ungainly page design, not following general web design principles would lead to loss of marks.

b. (3 marks) **Sign-up page**

The Signup component will present a form with name, email, and password fields to the user for sign-up, a *suggested screenshot is shown below*:

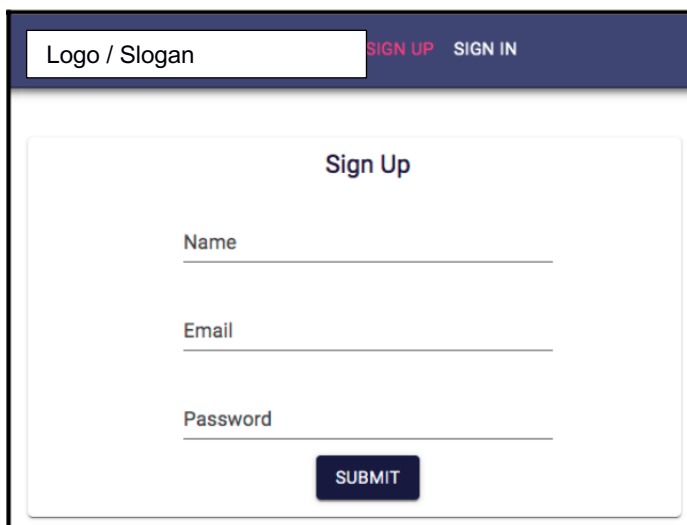


Figure 1: Sign- up

Password input should **not** be visible in a cleartext format. You may want to have a confirm password field, its implementation is optional.

Sign up form will perform all of the necessary validations and then save the user details in a data structure or localStorage. Validations to be performed-

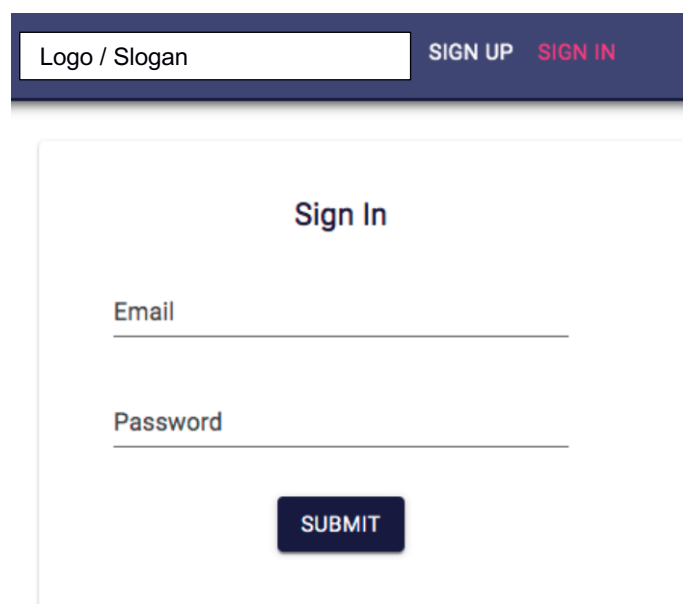
- *name, email and password are necessary fields.*
- *email must be in a proper format*
- *the password must be a strong password (look at the definition of a strong password)*

Provide a visual cue upon successful registration. The visual cue could be a text or a pop-up message.

Upon successful registration, user should be automatically logged in.

c. (2 marks) **Sign -in page**

The Signin component is also a form with only email and password fields for signing in:



The image shows a web interface for a sign-in page. At the top, there is a dark blue header bar. On the left of this bar is a white input field with the placeholder text "Logo / Slogan". To the right of this field are two buttons: "SIGN UP" in white text on a dark blue background, and "SIGN IN" in red text on a dark blue background. Below the header bar is a white rectangular box with a thin grey border. Inside this box, the text "Sign In" is centered at the top. Below it, there are two input fields. The first is labeled "Email" and the second is labeled "Password". Both labels are in a dark blue font. Below these fields is a dark blue button with the word "SUBMIT" in white text.

Figure 2: Sign- in

After the proper validations (email and password) and checks have been performed, the user will be redirected to the *profile page*.

Provide a visual cue upon successful login. The visual cue could be a text or a pop-up message.



d. (3 marks) **Profile page**

The Profile component shows a single user's information in the main content area. The completed Profile will display user details, and also the *date of joining*. The following screenshot shows a suggested screenshot:

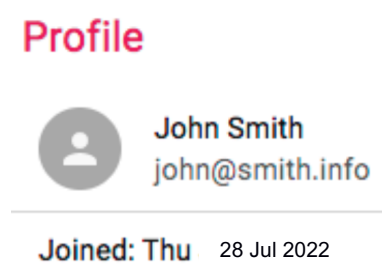


Figure 3: User profile details

CR part [4 marks]

e. (4 marks) **Profile management feature**

Modify the profile component to add edit and delete features.

When the user is signed in viewing their own profile, they will be able to see edit and delete options in the Profile component, as shown in the following screenshot:

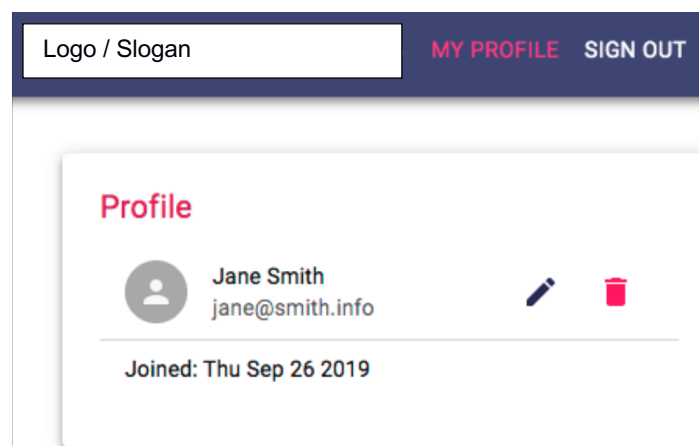


Figure 4: User profile management

The edit allows the authorised user to edit their own profile information in a form similar to the signup form.

The delete feature deletes the user. **This feature will have an impact on the subsequent requirements of the assignment, such as posts made by the users. If a user is deleted, all their posts must be deleted as well (posting requirement is in DI and HD parts).**

Provide a visual cue upon successful edit, delete operations- as an example look at the next page

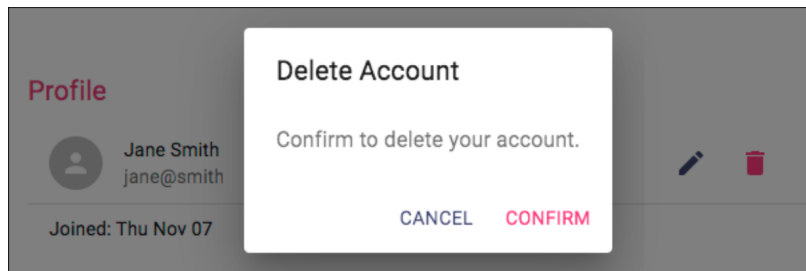


Figure 5: Visual cue for delete operation

Note: for the following (DI and HD sections), you will need to do some research and think →

DI part [3 marks]f. (3 marks) **Posting page**

Add another link to the navigation bar for the logged in users. This link takes them to a posting page.

A user will be able to make a post. A post may include text and an image

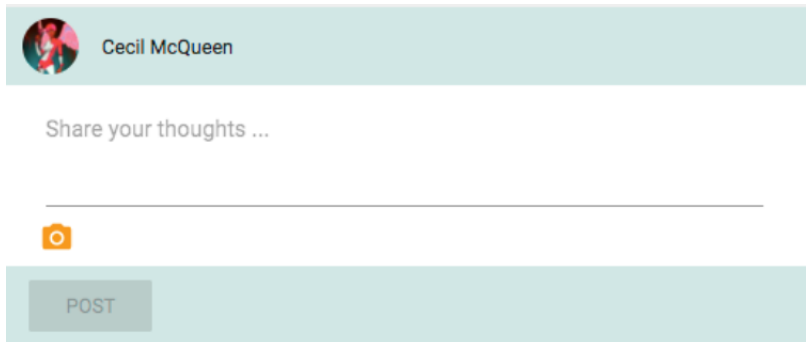


Figure 6: a form to make a post.

You need to perform validation such as

- post may not be empty.
- post length cannot exceed 250 characters.

User may be able to load an image with their post. This part is tricky- you need to find a clever solution around image location and storage. Ask questions such as: would it be image or the image Url? would you host images elsewhere and then upload via a Url call? would you look at blob Url?

You will need to list all the posts made by a user.

HD part [5 marks]

Add the following features to LAN (no suggestions for implementation and user interface are available here, this is the HD part, and you need to think on your own):

- (1 mark) User should be allowed to edit or delete their post.
- (1 mark) User may reply to a post made by another user. The replied post must be displayed in a threaded format.
- (3 marks) Add extra security to the login form introducing *multifactor authentication*. You will be asked to justify and explain the approach adopted during the demo.

5. Submission

Zip all website files **EXCEPT NODE MODULES FILES** and README.txt file and submit single zipped archive with .zip extension via Canvas submission link for this assignment.

After the due date, you will have 5 business days to submit your assignment as a late submission. Late submissions will incur a penalty of 10% per day. After these 5 days, Canvas will be closed, and you will lose ALL the assignment marks.

Assessment declaration:

When you submit work electronically, you agree to the assessment declaration:

<https://www.rmit.edu.au/students/student-essentials/assessment-and-results/how-to-submit-your-assessments>

6. Academic integrity and plagiarism (standard warning)

Academic integrity is about honest presentation of your academic work. It means acknowledging the work of others while developing your own insights, knowledge and ideas. You should take extreme care that you have:

- Acknowledged words, data, diagrams, models, frameworks and/or ideas of others you have quoted (i.e. directly copied), summarised, paraphrased, discussed or mentioned in your assessment through the appropriate referencing methods,
- Provided a reference list of the publication details so your reader can locate the source if necessary. This includes material taken from Internet sites.

If you do not acknowledge the sources of your material, you may be accused of plagiarism because you have passed off the work and ideas of another person without appropriate referencing, as if they were your own.

RMIT University treats plagiarism as a very serious offence constituting misconduct. Plagiarism covers a variety of inappropriate behaviours, including:

- Contract cheating- paying someone to do your work
- Failure to properly document a source
- Copyright material from the internet or databases
- Collusion between students
- Posting assignment tasks on technical forums (*reddit, stack exchange, etc.*) and asking for solution(s)

For further information on our policies and procedures, please refer to:

<https://www.rmit.edu.au/students/student-essentials/assessment-and-results/academic-integrity>

7. Marking Guidelines

The marks allocated have been added to each of the tasks. **Please read rubrics for details.**