**Project Idea-**

**Overview-** IC Diary is a one-stop app for monitoring Interstitial Cystitis symptoms and flare-ups with the help of tracking foods, liquids, pain, and medications. In addition, it will give the user an overview of day-to-day wellness.

**Motivation-** This project is of interest to one of our members as their wife suffers from Interstitial Cystitis. There are few apps on the app stores to help track flare-ups with certain food groups. According to the Melbourne Bladder Clinic, it is estimated that 8-1600 people per 100,000 are affected (Bladder Pain Syndrome and Interstitial Cystitis, Melbourne Bladder Clinic). Unfortunately, there is no cure for this condition, and only pain management plans to ease the severity of pain and discomfort. With so many different causes of flare-ups and pain, every person's experience will vary. A particular food type could cause severe pain for one and not the other. So this daily log will better help people suffering from this condition monitor the foods and liquids that cause them pain

The diary would help to be able to track what triggers a sufferer and at what times of the month. My wife is a strong supporter of the reminder notification feature as we all know life gets in the way and she has found in the past with other apps she has tried, she may not get back to it for a few days and then has to try and remember what she ate and drank and her pain scale on that day. Which can be difficult as she has suffered from chronic pain for over 6 years now and eventually it all starts to fade into one another.

Currently on the market there is a paid app called ‘mySymptoms food diary’ ($9.99). This app is an all-round app for multiple illnesses (their description list IBS, migraines and eczema as the main ones). FODMAP which is helpful in the respect of the different options of food however that is more dedicated to people with IBS and gut problems. My wife struggles the most in regards to being able to eat something one day and then a few days or weeks later eat the same thing and have a completely different reaction to it.

My wife is currently trying to stay away and limit her intake from acidic foods and drinks such as tomatoes, lemons, pineapple, oranges, coffee, soft drinks, fruit juices, sauces/condiments (tomato sauce, vinegar) & alcohol to name a few. When she does she eats small amounts and then drinks water to flush it out quickly as that can weaken the acidic values and soften the symptoms. However even doing all this doesn’t always help. This is what made her think of this app design with the reminder to enter her daily food and drink and her pain scale so she can look back over the months to see what times are worse as per comment above about eating something one time and then having a different effect on her a couple of days later.

**Group Motivation-** . As a team, we decided that we would take the opportunity to develop an app that would help provide a more effortless and better solution to IC suffers daily lives. In addition, we wanted to contribute to a project that would positively impact people. This condition was relatively unknown to our team. After an educational opportunity provided by one of our team members, we decided that the potential this app could offer someone suffering from IC was too good of a chance to pass up. After speaking to Chris, he briefly explained his wife's condition and how difficult it can be to monitor and stay on top of it. So we thought we could spend our time and create this app that would be truly useful for other people daily. With Chris dealing with this condition daily, we could see how motivated he was and how impactful this could be for his wife and other people who suffer from IC. Hopefully, we can create and provide an app that lives to change for thousands of people suffering in silence. We are not motivated by fame or fortune but purely by the change to help improve the quality of someone's daily life.

Furthermore, we needed to tackle a manageable project to our skill levels. As an introduction to the world of Information Technology, the skill set of our group varies. This is our first experience coding HTML and CSS for most of us. Whereas some of us already have some knowledge in these areas. Therefore, having a more manageable project combining software and functions will allow our group to also focus on the quality of work we produce.

**Description-**The application features will be basic at first. The homepage will be a calendar that will be colour coded using the pain scale colours to see an overview of the month. You can click on each day and go into detail, via a text box, on precisely what food and liquid you had during the day. A medication logs via a text box to log which medication you have taken, like paracetamol, Ibuprofen, or more potent painkillers. You can also add how many times you had to urinate or go to the toilet, as flare-ups can increase dramatically.

As previously stated, a pain scale will be colour-coded with 4 colours. Green represents no pain. Yellow will be a little discomfort or pain. Orange will be for manageable pain and discomfort. Finally, red will be for severe pain, causing the use of strong painkillers and stopping you from doing your day-to-day routines. This will be visible via the homepage, so you can see which days of the month you had which colour and click on them to see what may have caused this pain. In addition, there will be a comments section to note what type of pain you had, such as a stabbing pain or pressing discomfort.

The application will have a daily log notification to remind you at specific intervals throughout the day to input the required data to help keep track of your condition and get the most out of the application.

From the homepage, there will be an add doctor appointments button, so you will be notified when they are upcoming. In addition, you will be able to have an overview of your entire report so your Doctor can see the rundown on how you and your body have been doing with raw data, but this will come in version 2.

This application will be free, with no login required and no fees or subscription services.

Version 2 will have added features such as setting up an account so you can keep the data across multiple devices. The pain comments section will be updated to have a couple of common descriptions to select from. The medication will have common ones added as well. We will add a substitution list for common ingredients that can cause flare-ups and what you can use instead.

We will also aim for future development of Smartwatch compatibility, making it easier for the user to keep track of notifications. The development of a barcode function will be a necessity moving forward. However, it will take some time to develop the needed database first. Having a scan and add function will make our app even more functional for the user. Effiecentally the goal will also be to have the user scan a product and then warnings from previous diary entries populate to inform the user of potentially harmful ingredients.

Currently being not much on the market to choose from this will be an easy addition to sufferer’s lives. With having to either find a notebook or carry one around all the time to keep note of your daily intakes this will be that easy app to keep it all in one place and on you. People never leave home without their smart phones so it will always be at the ready to keep note.

\*UI picture\*

**Tools and Technologies:** For this app to be created, I will use JavaScript through the react.js framework as it can be used for IOS, Android and web browsers. It is a very versatile and easy-to-use language that is used by all modern browsers. Moreover, it gives access to an entire JavaScript library.

React native will give us access to a collection of special react components. For example, it connects the JavaScript language to specific platforms, like IOS and Android, without having to learn particular languages for those platforms. It can also give us the option to access the native platform API's such as camera, notifications, and GPS tracking.

We will use the EXPO CLI to create and ship the app to different platforms. It uses the Reach Native library and helps configure the JavaScript language to be interpreted by IOS and Android devices.

As we write the code, we can download and see how the app progresses in real-time by using EXPO GO on our devices. We will need to have Node.js downloaded as some packages will be using this to run.

For storing all this information, we will require the use of MySQL.

There are two main disadvantages to using JavaScript, one being the security side. Since JavaScript code is executed via the client side, it is far easier for bugs and code issues to be used for malicious purposes. Some browsers will interpret the code differently, causing minor detail changes for the end user.

**Skills required-** To get this project running, we will need to learn how to code in JavaScript and download React.js. We will also need to be able to use a source code editor such as Visual Studio Code, Notepad++, or Sublime Text. In addition, we will need to be able to use the EXPO CLI and know the correct commands that go with this. Lastly, we will need to know how to configure the unique components of the React Native Library. Once we have all the technical side of the building of this app, we will then require a marketing team to get this app out in the world and on people's minds and in their faces to showcase what this app could bring to their lives.

**Outcome-** If this project were successful, we would have an application that Interstitial Cystitis and Painful Bladder Syndrome sufferers can use and interact with to better understand how their body works, what foods and liquids, and at certain times of the month. They will be able to have all this information in one easy to go to app. This will benefit sufferers greatly in keeping on top of which foods to steer clear of. I believe once we have this app up and running and have tweaked all the bugs and issues, we can take this format and make it useful for other body issues requiring constant monitoring and upkeep.