**PROJECT DEVELOPMENT TOOLS:**

**CONFIGURATION MANAGEMENT: GITHUB**

GitHub is web-based project collaboration tool, which is a distributed computing instrument ordered under Software as a Service (SaaS) class.

Git is utilized to store source code of an undertaking and can be utilized to follow the total history, to recognize what are the progressions are submits have done to the venture by the proprietor or different engineers. As an open source venture Git enables clients to adjust and improve programming from its free and open storehouse.

Every individual from the group would have allotted certain assignment, pages and capacities to manufacture or refresh, and because the group bunch isn't huge, it is anything but difficult to evade clashes when we consolidate our changes.

For this task, Git would be the form control framework for dealing with its diverse variants. We have picked Git because (git-scm, 2.21.0.1 latest release: 2019) says, it is anything but difficult to learn and claiming is a standout amongst the most famous dispersed adaptation control framework. GitHub would be utilized for the store to help to getting the code in one spot as (GitHub, 2019) expressed. Thusly, it is simpler to deal with the difference in all the designer group in one spot and it is anything but difficult to include new Developers.

Tortoise Git is a Windows Shell Interface to Git and dependent on Tortoise SVN. It's open source and can completely be work with unreservedly accessible programming.

Since it is anything but a coordination for IDE like Visual Studio, Eclipse or others, you can utilize it with whatever advancement instruments you like, and with a record. Fundamental association with Tortoise Git will utilize the setting menu of the Windows adventurer.

The variety of reason to select tortoise git are stated below:

* Simple to use no need to memorize git bash commands.
* Integrated spell checker for log messages.
* Spell checker.
* Can resolve merge conflicts.
* Conflict numbers are regenerate into links that open the web browser directly on the corresponding issue.
* Shows changes you created to your files.
* Will apply patch files you bought from users while not commit access to your repository.
* TortoiseGitIDiff: to determine the changes you created to your image files (see screenshot)
* out there in several languages.
* TortoiseGit is stable.

**To Setup GitHub Account:**

1. You will need a GitHub account to create a GitHub repository where the revision will be stored.

Go to [https://github.com/join](https://github.com/).

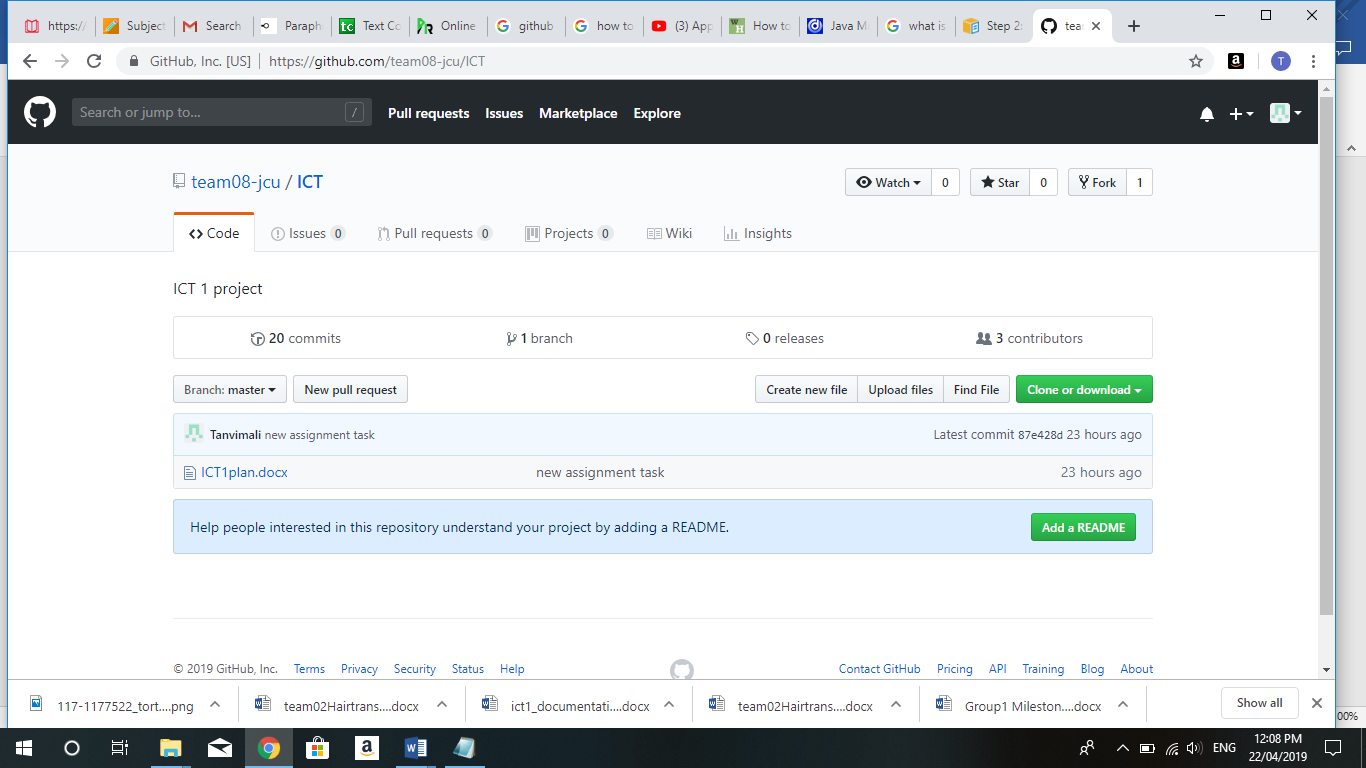
Type a user name, your email address, and a password.

Choose **Sign up for GitHub**, and then follow the instructions.

1. Create a GitHub Repository: You will need a GitHub repository to store the revision.

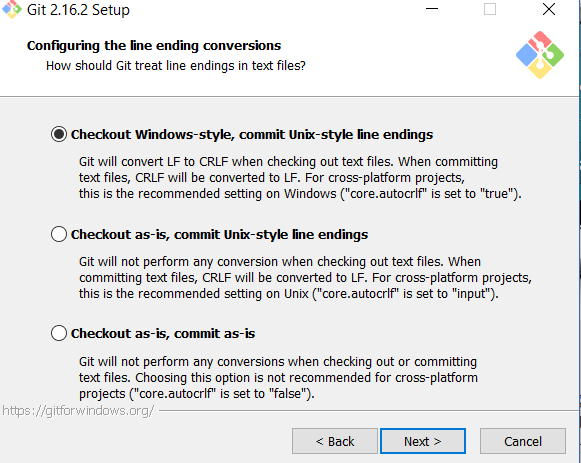
In the **Repository name** box, enter [**team08-jcu/ICT**](https://github.com/team08-jcu/ICT)

1. Upload sample application to GitHub repository



### Install Git and set it up in the project

* Download Git for Windows from <https://git-scm.com/downloads>
* Run Git-2.21.0.1-64-bit.exe
* Click next and when you reach the Configuring the line ending conversions select the first option “Checkout Windows-style …” as the image below:



* Click next until finish the installation.
* After installation gets completed we can clone repository in local folder and can add new files, edit files, commit files and push files.

Note: For new members in our team who are not exposed to git commands uses tortoise git instead of gitbash

**DEVELOPMENT TOOL: ANDROID STUDIO**

Android Studio is the endorsed integrated development environment (IDE) for [Google](https://en.wikipedia.org/wiki/Google)'s [Android](https://en.wikipedia.org/wiki/Android_(operating_system)) [operating system](https://en.wikipedia.org/wiki/Operating_system). It is built on [JetBrains](https://en.wikipedia.org/wiki/JetBrains)' [IntelliJ IDEA](https://en.wikipedia.org/wiki/IntelliJ_IDEA). It was designed specifically for Mobile Application development. It is a replacement for the [Eclipse Android Development Tools](https://en.wikipedia.org/wiki/Eclipse_(software)#Android_Development_Tools) (ADT) as the primary IDE for native Android application development. It works on various Operating systems like Windows, MacOS and Linux. Android Studio supports all programming languages like Java, c++, Go Lang, Kotlin etc.

Comparing with other tools like Xamarin, Appcelerator, PhoneGap, etc. Android Studio provides some grateful features like

1.it's a compiler that you get the opportunity to use to make a record framework for organizing your application venture, to make different APK documents

2.it's a supervisor for the programming language that you'll choose to use in your application's improvement procedure (regardless of whether it's Java, Kotlin, C++...)

3.it's XML supervisor (giving you a "plan see", also, that will manage you in showing your application's components on the screen; essential for staying aware of Google's Material structure rules)

4.it likewise incorporates the Android SDK itself (yet, the Java SDK should be downloaded independently)

In short, Android Studio is **the “can't live without” tool-set for any developer!**

**MINIMUM SYSTEM REQUIREMENT TO INSTALL ANDROID STUDIO**

**OS Version:** Microsoft Windows 7/8/10 (32-bit or 64-bit)

**RAM:** 8 GB RAM recommended

**DISK SPACE:** 4 GB recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)

**JAVA VERSION:** Java Development Kit (JDK) 8, use of bundled OpenJDK is recommended

**PROCESSOR:** intel core i5-7th Generation

**SOFTWARE DEVELOPMENT LANGUAGES: JAVA**

The mobile edition of Java is called Java ME. Java ME depends on Java SE and is bolstered by most cell phones and tablets. The Java Platform Micro Edition (Java ME) gives an adaptable, secure condition for structure and executing applications that are focused at installed and cell phones. The applications that are assembled utilizing Java ME are versatile, secure, and can exploit the local capacities of the gadget. Java ME tends to the limitations that are engaged with structure applications that are focused at cell phones. Generally, Java ME tends to the test of executing applications on gadgets that are low on accessible memory, show, and power.

To begin utilizing Java for Android, we have downloaded and understood the working of Android Studio. Also, during installation, we downloaded the SDK Manager. After completion of download we got introduced the most recent SDK instruments and stages.

**SOFTWARE DEVELOPMENT LANGUAGES: KOTLIN**

Kotlin is an extraordinary programming language and has been coordinated by its fame in our industry. In any case, for those unconscious of Kotlin, here are some amazing parts of the programming language:

There was multiple reason for us to select Kotlin over java. Some of them are mentioned below

•Kotlin keeps running on the Java Virtual Machine and can gather into JVM bytecode or JavaScript

•Kotlin can use all current Java-based structures and libraries

•Kotlin uncovered Java 8 usefulness to Android designers, expelling constraints of Java 6

•he type system in Kotlin is focused on eliminating the dangers of null references from code

•Kotlin is appropriate for Functional Programming ventures

**SOFTWARE DEVELOPMENT LANGUAGES: JAVASCRIPT**

JavaScript is a cross-stage, object-arranged scripting language used to make accelerative mobile pages intuitive (for example having complex liveliness, interactive catches, popup menus, and so forth.

JavaScript contains a standard library of articles, for example, Array, Date, and Math, and a centre arrangement of language components, for example, administrators, control structures, and proclamations. Centre JavaScript can be stretched out for an assortment of purposes by enhancing it with extra items.

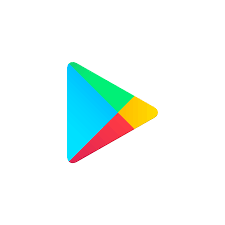
•Client-side JavaScript broadens the centre language by providing articles to control a program and its Document Object Model (DOM). For instance, customer side augmentations enable an application to put components on a HTML structure and react to client occasions, for example, mouse clicks, structure info, and page route.

•Server-side JavaScript broadens the centre language by providing objects significant to running JavaScript on a server. For instance, server-side expansions enable an application to speak with a database, give coherence of data starting with one conjuring then onto the next of the application, or perform document controls on a server.

With research of all above aspects mentioned, we found that portable applications in iOS, Android, and Windows Phone are coded utilizing diverse programming dialects. An iOS application utilizes Objective-C, an Android application is coded with Java, while a Windows Phone application utilizes .NET. Nonetheless, with a good information in JavaScript, you can assemble great versatile applications.

**Database : ????????????**

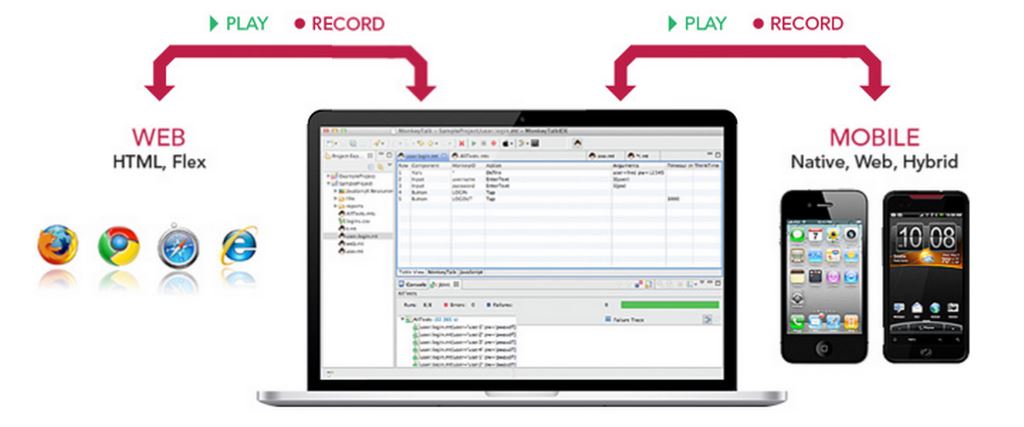
**HOSTING ENVIRONMENT: GOOGLE PLAYSTORE**

Google Play, some time ago known as Android Market, is the official dissemination customer facing facade for Android applications and other computerized media, such a music, motion pictures and books, from Google. It is accessible on cell phones and tablets that run the Android working framework (OS), bolstered Chrome OS gadgets and on the web. Clients can get to Google Play to peruse, buy and download programming applications from Google and outsider designers. As of now, the retail facade is accessible in more than 190 nations and regions.

To host our COURSEPAL Application on Google playstore we need to,

* Create a developer account on playstore, by paying 25$ USD as registration charges
* Upload COURSEPAL app which should be less then 50 MB in size
* Mention description about our app in less then 4000 words
* Upload screenshots of our application with Min length for any side: 320px. Max length for any side: 3840px including "Phone", "7-inch tablet" and "10-inch tablet".

**TESTING TOOLS: MONKEYTALK**



MonkeyTalk is an open source mobile app automation testing tool for Android and iOS. MonkeyTalk is an easy to-utilize apparatus which computerizes genuine, practical intuitive tests for iOS, Android, Web/HTML5, Hybrid and Flex applications. This open source instrument can be utilized for basic 'smoke tests' or for 'information driven test' suites on local, versatile, and mixture applications, genuine gadgets or test systems.

##### **Advantages of Monkeytalk:**

* Open source Tool
* Provide Record and Playback
* Support both Android and iOS
* Support Cross platform recording
* Easy Readable Test script
* Support Gestures

Moreover, automation saves time, it is reusable and repeatable. It is very easy to learn and it’s a powerful functional testing tool.

##### **Requirements to start testing with MonkeyTalk**

* Download and install Java
* Download MonkeyTalk Pro
* Need Eclipse or Android Studio to configure the source code

In order to record the script with MonkeyTalk, we need to configure the build with some dependencies.

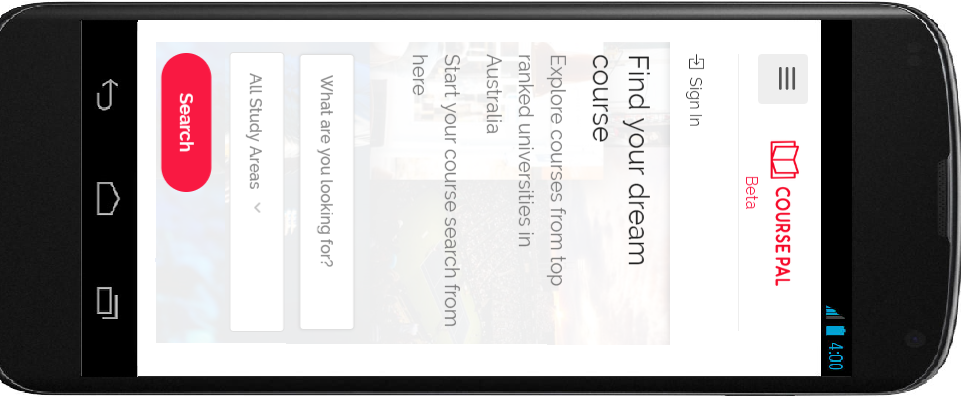
The major component used for MonkeyTalk is the MonkeyTalkAgent. Any build including Android or iOS need to be integrated with Monkeytalk, otherwise, the tool cannot recognize the elements of the app. As a result, we cannot record or run the script on our test app. The build which is integrated with MonkeyTalkAgent is called as Instrumented build.

Instrumentation can be done in 2 ways as follows:

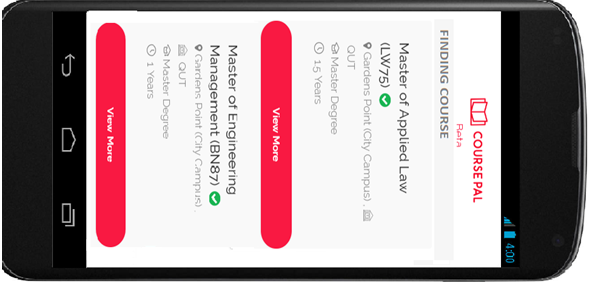
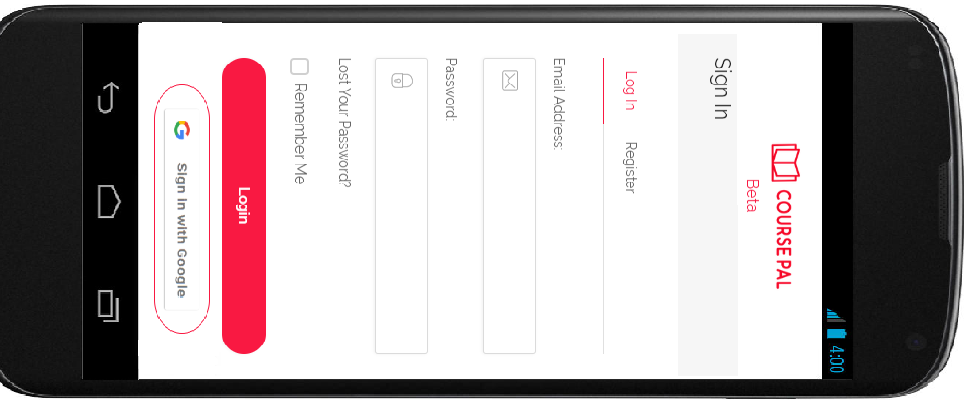
* MonkeyTalkPro provides an inbuilt feature to instrument the build, which injects MonkeyTalkAgent to the built.
* Otherwise, we can manually integrate the MonkeyTalkAgent by configuring the source code using eclipse or Android Studio before deploying the build.

Before we start configuring the source code, we need to install “AspectJ” plugin in eclipse. The procedures to install AspectJ plugin is available [here](https://o7planning.org/en/10115/install-aspectj-development-tools-into-eclipse). Once the plugin is installed, Now the open our project source code in eclipse.

**APPLICATION LAYOUT (PROTOTYPES): EMULATOR VIEW**

Home Page Menu Page



Login Page Finding Course