# Final Report

By Project Prime

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## 1 Introduction

In this project, we were tasked with building a multi-host file synchroniser consisting of three components: a server, and mobile and desktop client. The server is the "hub" whilst the clients are "spokes". The server was created using Node.js, where it acted as an interface between both clients and the database (which was created using MongoDB). In addition, this server processed HTTP GET and POST requests to deliver/updates files on the client's behalf. The mobile client was made using Java and XML on Android Studio, whereas the desktop client was created using Javascript, HTML and CSS on Electron. The result of this project is a fully-functioning file synchroniser that interacts with and manages multiple, heterogeneous clients via a Node.js server. Furthermore, this synchroniser possesses the necessary algorithms (e.g. rsync) to resolve file conflicts caused by clients.

## 2 Review

## 3 Requirements and Design

### 3.1 Server Application

### 3.2 Desktop and Mobile Client

## 4 Implementation

### 4.1 Server Application

### 4.2 Desktop and Mobile Client

## 5 Teamwork

Project Prime consists of six members: Yusaf, Sandipan, Saloni, Shefali, Cameron and Manny. To balance the workload, the team was divided into three subgroups of two teammates, and each subgroup was assigned to the development of one

component. As a result, Yusaf and Sandipan were assigned to the desktop client, Saloni and Shefali were assigned to the server application, and Manny and Cameron were assigned to the mobile client. Despite this style of work delegation, members from other subgroups were still able to intervene in the development of a component that they weren't assigned to, in order to fix issues that the assigned subgroup couldn't correct, for example. Moving onto communication, the team remotely communicated using an instant messaging app known as "Whatsapp", which allowed us to arrange group sessions at a certain date-and-time, notify teammates of recent pull requests, etc. Furthermore, the sessions were conducted in booked group study rooms at least once per week, and these sessions involved group discussion and coding of all components.

# 6 Evaluation

In conclusion, this project caused the realisation that despite our computer science backgrounds, our technical prowess is still very basic and there is much for us to learn. In response to this discovery, we will commit to thoroughly relearning and practising how to use different technologies in our spare time, including programming languages and Git (e.g. BitBucket). In retrospect, if this project was repeated, our different approach would be to partner stronger members with novice ones, in terms of technological skill; thus, providing novice members with the opportunity to enhance their skills by learning whilst working on the job.

# 7 Peer Assessment

| **Peer Assessment of Project Prime** | | | | | |
|---|---|---|---|---|---|
| **Yusaf** | **Sandipan** | **Saloni** | **Shefali** | **Cameron** | **Manny** |
| 0 | 0 | 0 | 0 | 0 | 0 |

# 8 References