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Introduction:

- Car pollution, Global Warming from photos and reports provision by NASA [1].
- Student difficulties in affording for high transport rates especially during term breaks(Festive Periods)
- Similar applications have already been implemented but Lifty differs in different approach of IOS App development with the implementation of firebase database a google open source platform that host and runs mobile app data.

Aim:

- Development of a simple prototype of a car sharing application.

Motivations:

- Enthusiasm to explore new technologies
- Passed experience on travelling during term break periods
- Childhood dream of producing a technology beneficial to humanity

Objectives:

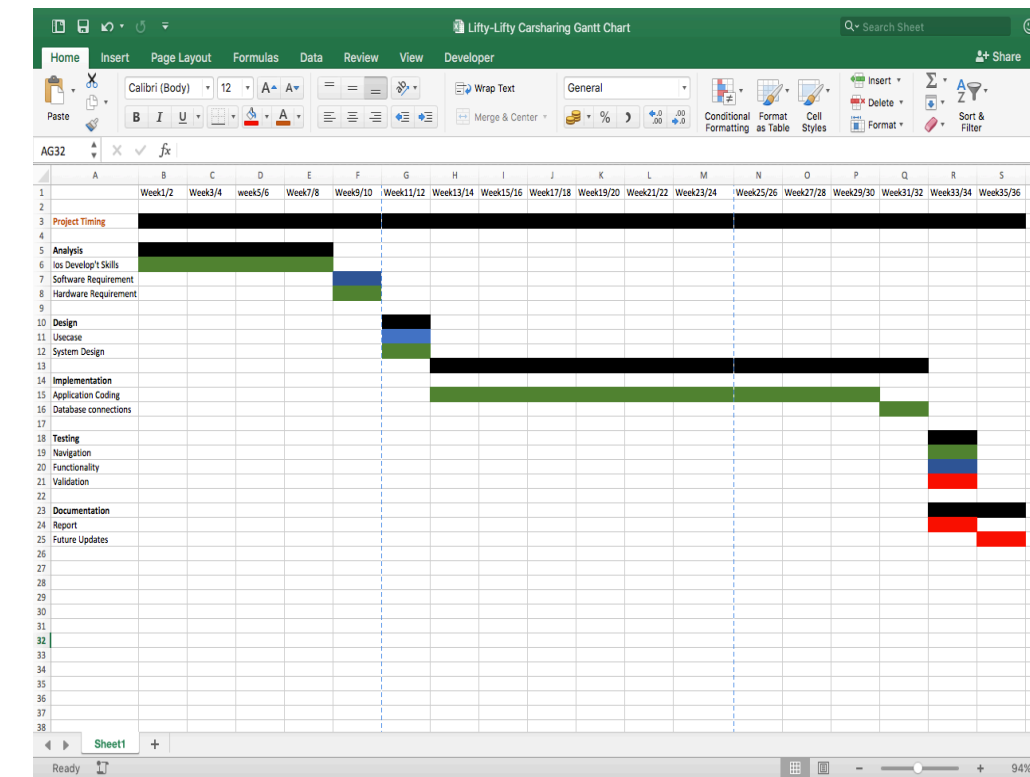
- To Evaluate on necessary development Tools for mobile IOS Applications
- Research on Car sharing Strategies and Implementations
- Analyse Suitable Development Methodologies for Mobile Application development
- Design and Develop a user friendly and working Prototype
- Simulating a real project environment
- Hardware modification and system enhancement in computers.
- Navigation and familiarity of Xcode Integrated Development Environment

Literature Review:

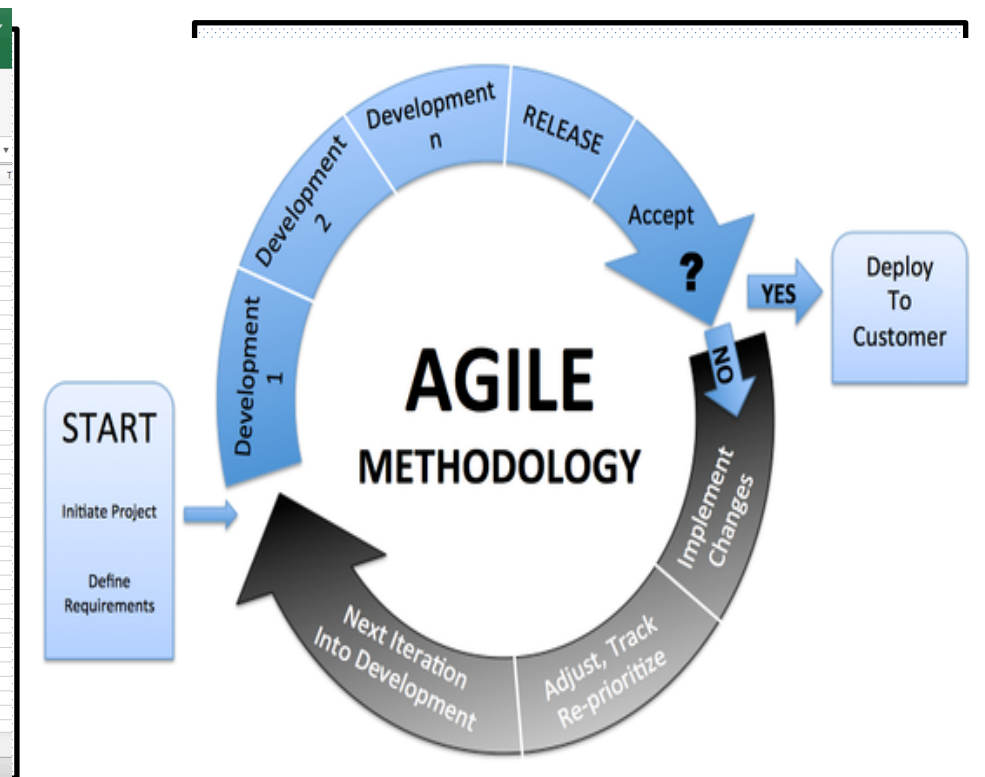
- Developers incentive rise over the pass decades
- Rise in number of connected and prediction in the future years[2]
- Developer account is mandatory for IOS application development
- Apple release Swift in 2014 and google acquired firebase in 2014
- Carsharing first surfaced in 50s and later expanded between 70s – 80s [3]
- Car Sharing reduces environmental emission by 13 percent [4]

Experiment Based Project

- Experiment base project by reviewing available techniques for developing an IOS application



Gantt Chart



Agile Methodology

Analysis:

- Functional Requirements
- Driver
- User
- Admin
- Non-Functional Requirements
- Scalability
- Responsiveness
- Usability
- Security
- Risk Analysis
- Identification
- Analyse and Prioritize
- Risk Planning
- Risk Monitoring

Research Methodology: Agile Methodology applied, suitable over water fall due to constant change of client recommendation while implementing waterfall once process initiated a stage terminated before proceeding with possibility of returning to amend project.

Design:

- Storyboard consisting of a Collection of View Controllers
- Entry Point of App being at navigation controller that extreme left controller
- View controllers interconnected by arrow threads know as segues
- Tab bar perform array task by connecting several view controllers in a controller
- Database being NoSQL unstructured data tables
- JSON tree format for the storage of data
- Rapidly deploy, manage and maintain as provision by Google services

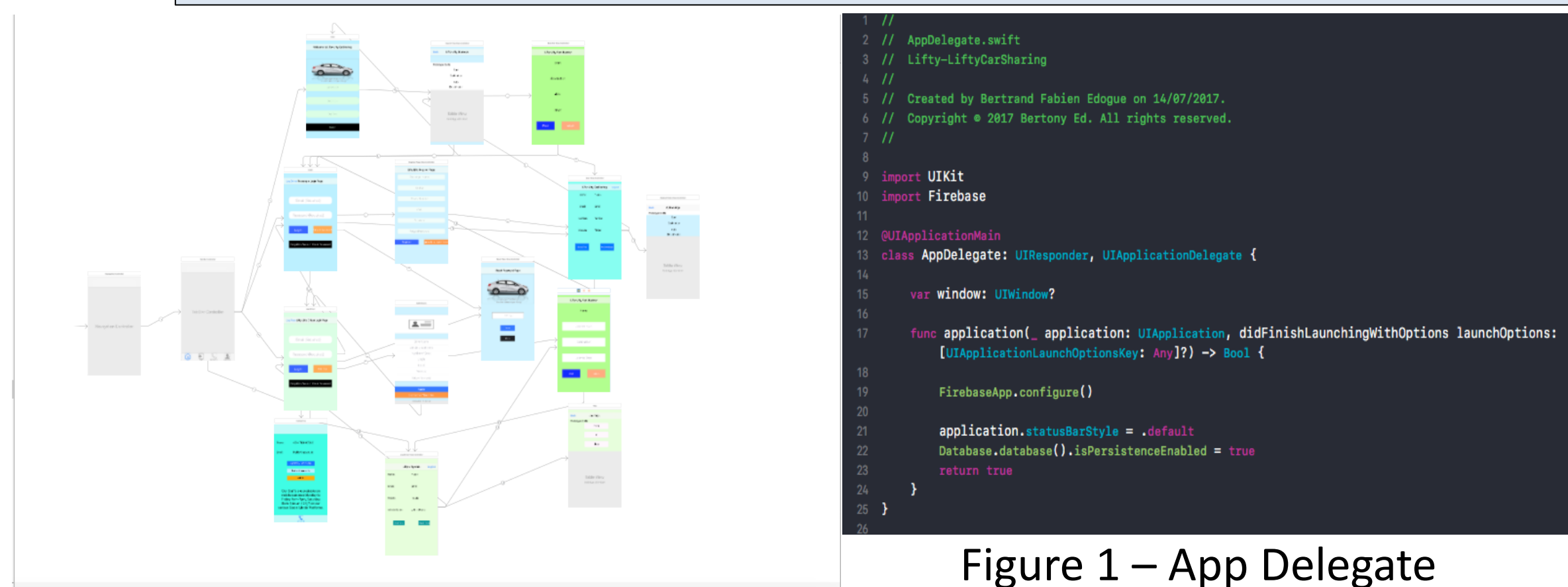


Figure 1 – App Delegate

Implementation:

Figure 1

- App delegate entry point of app coding
- initialisation of firebase database (line 19)
- App styling method available throughout: Line 21
- Line 22 permits app offline Capabilities

Conclusion / Future Work:

- Achievement of objectives while others are to be explore.
- Possibilities of introduction online chat option between app users
- Possibilities of redesign layout for more functionality inputs
- Integration of features as a passenger photo card, apple pay and two factor authentication
- Enhancing the finalisation of project as tend to represent most critical together with initiation.

[1] National Aeronautics and Space Administration (NASA), NASA Global Climate Change, Geneva: NASA, 2016.
[2] EDUCAUSE, "Mobile App Development," 7 Things should know about , pp. 1-2, 19 April 2011.
[3] F. Ciari, M. Balmer and K. W. Axhausen, "Concepts for a large scale car-sharing system," ETH, Zurich, 2008.