# The Art of Computer Programming – A difficult book to understand

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B.Sc.(Hons) in Software Development

April 16, 2016

**Final Year Project**

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# Contents

# About this project

**Abstract** A brief description of what the project is, in about two-hundred and fifty words.

**Authors** Explain here who the authors are.

# Chapter 1

# Introduction

It's a booking web application build using MEAN stack (MongoDB, Express, Angular, Node).The application is made of two websites bookAroom-user and bookAroom-admin. BookAroom-user is using Auth0 authentication system which allows for convenient log in with gmail fb as well as sign up form with password recovery. Once user is signed in he/she can book search and sort workbenches. BookAroom-admin is using json web-tokens identification system. It lets administrative user to add, edit and deletes existing and new workbenches.

# Chapter 2

# Context

- Provide a context for your project.
- Set out the objectives of the project
- Briefly list each chapter / section and provide a 1-2 line description of what each section contains.
- List the resource URL (GitHub address) for the project and provide a brief list of the main elements at the URL.

## 2.1 Filler

## 2.2 Filler

# Chapter 3

# Methodology

About one to two Page Describe the way you went about your project:

- Agile / incremental and iterative approach to development. Planning, meetings.
- What about validation and testing? Junit or some other framework.
- If team based, did you use GitHub during the development process.
- Selection criteria for algorithms, languages, platforms and technologies.

# Chapter 4

# Technology Review

## 4.1 Development Environment

About seven to ten pages.

### 4.1.1 Debian

Debian is an open source operating System developed. It's one of many distributions of Linux but is one of the earliest distributions and was first announced in 1993 by Ian Murdock. It requires small hardware resources to run and is easy to set up and install it has graphical user interface version as well as command line version which father. When distribution is released initially it's marked as unstable, father sufficient amount testing is done it become as stable and usually is adopted by more people than because it has less bugs and is more reliable. Debian has access to over 50 000 to packages located on the internet and any package can be installed with one command line which makes ideal work environment for web development because web development relies on many different components put together and if not done right issues arise with dependencies etc. With commands like sudo apt-get you can install any package you want and well documented and big community behind it.Tools like npm Node packet manger and grunt work very well in this environment.

### 4.1.2 Cli and Gnu Nano

Command Line Interface (CLI) doesn't come with Debian it has to be installed. Moust of Operating Systems come with many tools installed which makes them very big and a bit slow Operating System like Debian takes different approach and start with just essential tools and then you install only tools that you need. CLI is needed to install some packages and execute some of the commands in Debian when working web environment.GNU Nano is a text editor Unix like operating system which makes it ideal for Debian and all Linux distributions. It allows for convenient bash scripts to be set up while in command prompt or terminal as now in Debian. As well it allows for convenient GitHub commits you can enter commit message and press chines hat and O to write out and commit changes to github.

### 4.1.3 Npm/Grunt

These two tools are absolutely essential to web development environment and you are must like wouldn't be able to develop without them in today's world. Npm is a default manager for JavaScript runtime environment in Node.js.it manages all package dependencies of an application as well as installing them. Grunt makes web development environment more efficient by eliminating repetitive tasks such as unit testing as well as shortening your run scripts such grunt serve is very popular for running your application as that is very repetitive command and is executed a lot.

### 4.1.4 Github

Github was founded in 2008 its web based git repository it lets users have public repositories which are free and you can have any amount it also has an option for private repositories for which you have to pay and the more private repositories you have more you have to pay, but I has student bundles which provide 100 dollars' worth of development tools which is great for beginner developers such as myself. It provides graphical user interface for Windows and Mac to manage maintain and update projects but it does cause some errors failing to commit or failing to push or merge when that happens user is suggested to use git to fix the errors. For that reason git is way more stable and reliable which is command based tool it has five major commands hat are used constantly.It has played major role in this project and made project way more manageable and sustainable as well as less error prone regular commits made sure of small incremental progress throw out life of the project.

- git clone path/to/repo

  This command allows to clone any project from your github account or any publicly available project for that matter.

- git status

Checks the status of project once it has been cloned it shows added deleted and modifies files as well as indicates which files are tracked.

- git add .

  Add folders or files to be tracked by github so later they can be committed and pushed on to github account.

- git commit –a

  Makes local commit of all the changes done in folder added by previous command git add .

- git push origin master

  Pushes commit (git commit -a) to users github account on his/her account

### 4.1.5 Sublime, Live Reload, IceWisel, Chrome

Live Reload IceWisel

## 4.2 Mean Stack

### 4.2.1 Mongodb/Firebase

### 4.2.2 Express

### 4.2.3 Angular

Web applications are browser-based applications running in a browser using HTML5. WebHooks allow developers to access the hardware on a phone, this was unavailable before HTML5 [16], also it allows other features such as web storage, indexed database APIs, file APIs, web SQL Databases and Offline Web GeoLocations [16]. This makes web applications more mobile friendly and compatible and allows them to use the full range of phone features. They do not require installation or any upgrades as it contains a one to many relationship (one server, many clients) so any updates are done on the server side and all clients get updated, but the network is required at all times in order to access the application. It lacks the native look and feel of target platforms such as Android, iOS or Windows Phone, altough there are many tools out there trying to solve the problem by simulating a native look such as Xui, JQyeryMobile, Sencha Touch, JQTouch and WebApp.net. Some 6 frameworks developing web applications include AngularJS, Ruby on Rails, Django and Drupal. AngularJS is explained in more detail down below.

It was developed by Misko Hevery in 2009 at Brath Tech LLC. It is now an open source framework mainly used for developing single page applications (SPA) it has become widely well known and is the top choice for many developers for creating dynamic html pages. In order to be able to program in AngularJS you have to know HTML, CSS and JavaScript. It is maintained by Google and the developer-community; it is under MIT license [17]. It uses data binding which means you can attach controllers to certain parts of the page as well as taking advantage of the MVC (Model, View, Controller) pattern, creating a loosely coupled design to separate the three components of the web application so that they all are independent to one another; one of them can be changed without impacting the others and you can swap and change components. If an application contains more than one page it can use Client side routing in order to dynamically switch content without refreshing the page [18]. The Batarang plugin was built by Google in 2012 to improve the debugging of web applications built using AngularJS. It is also used with another three popular technologies known collectively as the MEAN Stack (MongoDB, Express, AngularJS and NodeJS). MongoDB is cross platform oriented database, it uses a JavaScript/JSON style syntax; it is open source. Express is a server framework that is used for building single page web applications and is expandable via plugins. NodeJS is cross platform runtime environment for server side applications, it's open source. As we can see all the technologies used in the MEAN stack are open source suggesting the reason for its huge community and popularity.

### 4.2.4 Node

## 4.3 Components

### 4.3.1 Yeoman/Modules

### 4.3.2 Angular formly

### 4.3.3 Ng-repeat

### 4.3.4 Heroku

### 4.3.5 Auth0

- Describe each of the technologies you used at a conceptual level. Standards, Database Model (e.g. MongoDB, CouchDB), XMl, WSDL, JSON, JAXP.

- Use references (IEEE format, e.g. [1]), Books, Papers, URLs (timestamp) – sources should be authoritative.

## 4.4 XML

Here's some nicely formatted XML:

```
<this>
  <looks lookswhat="good">
    Good
  </looks>
</this>
```

# Chapter 5

# System Design

As many pages as needed.

- Architecture, UML etc. An overview of the different components of the system. Diagrams etc... Screen shots etc.

| Column 1 | Column 2 |
|---|---|
| Rows 2.1 | Row 2.2 |

Table 5.1: A table.

# Chapter 6

# System Evaluation

As many pages as needed.

- Prove that your software is robust. How? Testing etc.
- Use performance benchmarks (space and time) if algorithmic.
- Measure the outcomes / outputs of your system / software against the objectives from the Introduction.
- Highlight any limitations or opportuni-ties in your approach or technologies used.

# Chapter 7

# Conclusion

About three pages.

- Briefly summarise your context and ob-jectives (a few lines).
- Highlight your findings from the evalua-tion section / chapter and any opportuni-ties identified.