PROJECT PROPOSAL

PROJECT TITLE: CHAT SYSTEM

MODULE: COMPUTING PROJECT

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SUBMITTED TO: SUDEEP BAJIMAYA

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Acronyms

Hierarchical, Diagrammatically, Interface, Emphasized, Malware, Spyware, Irresponsive

Introduction: Small Ranged Chat for easy conference (Bluetooth/Wi-Fi hotspot) UMeChat

A simple chat system that uses built-in mobile facilities to provide short distance and costless communication with additional file sharing features.

Purpose/Justification of my project

I am more open with words I type than what I say .According to a recent survey conducted by Open Market, when given the choice between being able only to text versus call on their mobile phone, a whopping 75 percent of millennials chose texting over talking. These people are able to express their thoughts by writing/typing more than they can express themselves verbally. Although it can have a negative impact as well but having an alternative way to express ourselves can be quite handy. Since a network (hotspot or Bluetooth connectively) requires a user defined password or Pairing matches as well, conversation can be carried out in a secret manner. My application would use a system that would use the full accessibility of phone's capability to improvise short ranged communication in an effective and costless manner. Also, private Conference can be held within a company for confidential data transferring. This application might not be much of a use but with new improvised ideas it can be upgraded furthermore. I would want it to be better as much as my thoughts could exceed furthermore so I might have to look at it again (redesign or additional features included) and probably java as my language as this application would be for mainly androids due to the wide use of android users so I want most of the people to be able to use this.

Background of my project

I am uncertain if this idea would work or even if such application exists already. But I have been inspired with this idea from the offline games we play through Wi-Fi-hotspot and Bluetooth pairing. So I am engaging my thoughts into making a system that would be beneficial to a certain small groupies. Providing an alternate source of communication medium somehow I want my system to be helpful to those who are lacked with self-confidence and are more open to typing rather than speaking. Being an introvert there are lots of things that goes through my mind which are unheard and unspoken so I think providing a simple application would also be helpful for some people.

Problems associated with my project

Firstly we have been dealing with C# as a programming language in my current prior college lessons and with due respect since I have no basic knowledge about Java the troubles I have to go through gathering information through different alternatives (i.e. YouTube/google) which would be time consuming and tiresome as well. Also I have no certainty if it is even possible regards with my current status. Beside personal problems negative aspects that would be on the mental health by using this application and possibly a social threat to socialism may occur.

Problem solving methodology

I would consider to take help from all the Medias as well as my experienced teachers. Since it is an individual project I just have to start off with this idea a lot quicker than others so that I can finish it in due time. Also I am planning on to take some additional classes on learning Java as well.

Description of my project

This project includes an alternate communication platform between two users which is co-relatively controlled. This project has two major types of users each representing one who creates a coverage area and ones within a coverage area that are relatively connected with each other through sources. By this connection they are allowed to transfer messages and files with each other.

Features of my project

-Alternative communication medium

-Costless network communication

-Secure communication

-Data sharing

-Feature to shared data backup

- (Additional features to be added)

Overview of my application

My application might not be useful in most context but for some people it might be precious and I think for developers like us we look for every possibilities we can come up with even if it is beneficial for some people only.

Scope

Scope of my Project

This project is created for connecting users in a small coverage area in a costless manner. Basically it includes chatting system for android device featured with Bluetooth and Wi-Fi-Hotspot accessibility. Also it creates an alternate platform for data privatization.

Limitation of my Project

The Limitation of my project are illustrated below:

- This system does not covers a wide range area making long ranged communication not possible without prior equipment's.
- This system is not on practice making it vulnerable on demands.
- This system might bring conflict in ones day to day life.
- This system demotivates people from social collaboration verbally.

Aims of my Project

The aims of my project are illustrated below:

- To facilitate users with costless communication medium platform.
- To help respective user's to fully potential communicate with each another.
- To promote confidential data sharing facility in a costless manner.
- To promote privatization of user confidential messages.

Objective of my Project

The objective of my project are illustrated below:

- This chat system encourages confidential message transfer in a costless manner.
- This chat system fully facilitates the functionality of owner's devices.
- This chat system encourages collaborative groupies.
- This chat system ensures data protection.

Overview of my Scope

A well-defined Scope mainly helps in completion of task efficiently within assumed time rate in a distinctive way. Thus my Scope would help me cover-up all the things included above accordingly systematically and in effective manner keeping in mind my main aim is costless communication.

Development Methodology

Description of Methodology

Software development methodologies are the frameworks that are basically used to plan, structuralize, and control the processes in developing of information system wholly.

Agile Software Development Methodology

Agile Software Development is an alternate approach of software development in which phases are carried out in a non-respective manner where solutions and required facilities can be furthermore enhanced by collaboration evolved by enabling pre remodeling and re-featuring. This method mainly emphasize on real time communication and working software as the primary measure of progress in software development. This method compare to others produce very small amount of written documentation due to this emphasized methods.

Advantages of using Agile Methodology

- It produces high product quality.
- It provides customer with higher satisfaction.
- It provides transparency and higher project manageability.
- It has comparatively lower chances of Risks.
- It provides features which are delivered incrementally.

Agile Methodology over Waterfall Methodology

Waterfall Method being very different to agile method especially because it's not iterative method, Waterfall is more about a process where you can see the progress route through the difference phases. It's a sequential model defined from requirement analysis, design, implementation, testing to maintenance. Whereas agile development tends to deliver adaptability, visibility and value in the beginning of the process and reduces a lot the risks during the project development.

Design Pattern

MVC (Model-View-Controller Pattern) is a design pattern associated with my project.

This Pattern involves three major criteria which are as listed below:

- Model: It represents an object carrying data which can also have logic to update controller if its data alters.

-View: It represents the visualization of the data that model contains and usually has the UI logic.

-Controller: It controls references both Model and view. It controls the data flow into model object and updates the view whenever data changes accordingly and keeps View and Model separately.

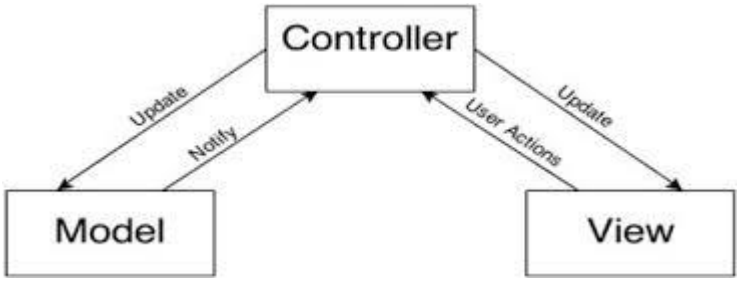


Fig: MVC Design Pattern

Advantages of MVC

- It is comparatively faster development process **as** it supports rapid and parallel development. With MVC, multiple person can work on different sector.

- It provides multiple views**.** As you can create multiple views for a model it is very helpful. Code duplication also limited in MVC.

-MVC also supports asynchronous technique, which helps developers to develop an application that works very quickly.

- Any Modification does not affects the whole entire model as because model part does not depend on the views part. Thus, any changes in the Model will not affect the whole architecture.

- MVC pattern returns data without applying any formatting so the same components can be used and called for use with any interface available.

Disadvantages of MVC

-MVC has increased complexity.

-It has inefficiency of data access in view.

-It is difficult to use MVC with modern user interface.

-It requires multiple programmers.

-It requires knowledge on multiple technologies.

System Architecture

The interface, features and structure of the system is categorized into an architecture model referred as system architecture. These can be further categorized into three different tier models which are as listed below:

- Presentation tier: Top most appearance layer of the application.
- Logic tier: Logical decisions and evaluations based layer of the application.
- Data tier: Data Storage layer of the application.

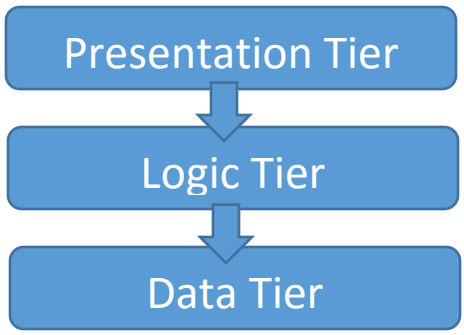


Fig: System Architecture

Why use 3 Tier Architecture?

There are lots of benefits for using a 3-layer architecture which includes speed of development, scalability, availability, and performance. Modularizing different tiers of an application gives development teams individually the ability to develop and enhance a system with greater speed than developing a singular code base because a specific tier can be changed with minimal impact on the other layers.

Project Planning

Work Breakdown Structure

Introduction: WBS (Work Breakdown Structure) is the way to break down team's work collectively into small distinct areas for easy and effective manageability. By assigning a time assumption for task completion a certain task is carried out individually and the project is carried out wholly in this system also referred as Work Breakdown System. Although we are carrying out agile model as development model and since the project completion time is precise but furthermore thoughts which may evolve can be added to this system eventually so it helps to maintain project basic task that needs to be completed in due date and time. The activities that shall be undertaken individually during this project completion is diagrammatically shown below in the following hierarchical chart given below:

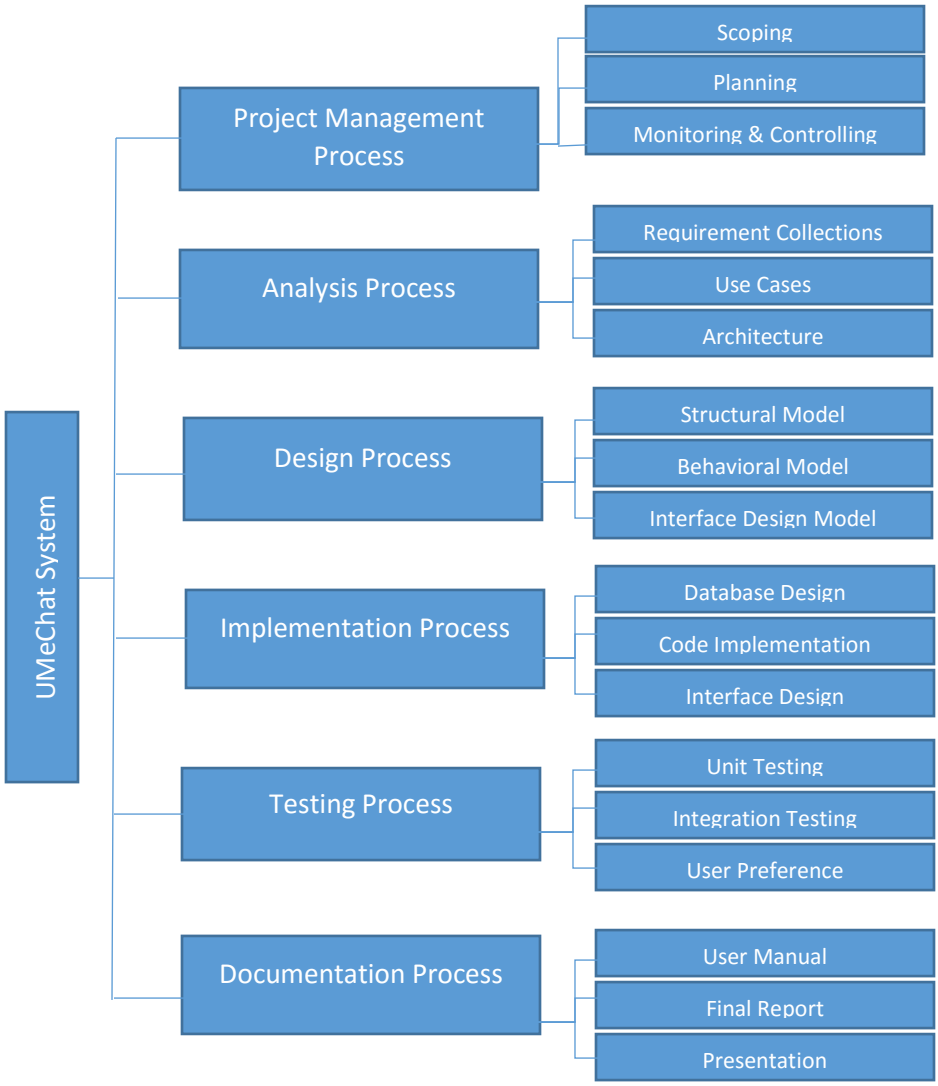


Fig: Work Breakdown Diagram

The reason to adopt Work Breakdown Structure are as follows:

- Accurate time estimation and effort required for project.
- Easier and faster project planning.
- Since it is assigned to smaller groups task-wise easy work handling.
- Reduces Risk to the projects.
-

WBS	Task Name	Days
	Project: UMeChat System	**109**
1	**Project Management Process**	**15**
1.1	Scoping	5
1.2	Planning	5
1.3	Monitoring & Controlling	5
2	**Analysis Process**	**29**
2.1	Requirement Collections	9
2.2	Use Cases	10
2.3	Architecture	10
3	**Design Process**	**26**
3.1	Structural Model	6
3.2	Behavior Model	8
3.3	Interface Design Model	12
4	**Implementation Process**	**21**
4.1	Database Design	3
4.2	Code Implementation	14
4.3	Interface Design	4
5	**Testing Process**	**7**
5.1	Unit Testing	2
5.2	Integration Testing	2
5.3	User Preference	3
6	**Documentation Process**	**11**
6.1	User Manual	4
6.2	Final Report	4
6.3	Presentation	3
7	**Total**	**109**

Milestone

Milestone remarks a project phase from one to another starting from project's begin to project's end date. The start and end time of all individual task carried down by Work Breakdown System is calculated with a milestone with task completion step wise. It is used to measure the progress of project towards its goal within project lifecycle. By using a milestone the task completion date can be pre-estimated and project due date can be fixed through its lifecycle.

Advantage of using Milestone

-Easy Accountable of work Progress including Deadline.

-Work Phase Time Consumption pre-estimated.

- Provides ease Data handling compatible medium

-Identify Critical path in working phases.

The following milestone of my project is tabulated and displayed below:

S.N.	Milestones	Start Date	End Date	No of Days
1	Project Proposal Phase	26th March 2019	9th April 2019	15
	1. Scoping	26th March 2019	30th March 2019	5
	2. Planning	31st March 2019	4th April 2019	5
	3. Monitoring & Controlling	5th April 2019	9th April 2019	5
2	Analysis Phase	10th April 2019	8th May 2019	29
	1. Requirements Collections	10th April 2019	18th April 2019	9
	2. Use Cases	19th April 2019	28th April 2019	10
	3. Architecture	29th April 2019	8th May 2019	10
3	Design Phase	9th May 2019	3rd June 2019	26
	1. Structural Model	9th May 2019	14th May 2019	6
	2. Behavior Model	15th May 2019	22nd May 2019	8
	3. Interface Design Model	23nd May 2019	3rd June 2019	12
4	Implementation Phase	4th June 2019	24th June 2019	21
	1. Database Design	4th June 2019	6th June 2019	3
	2. Code Implementation	7th June 2019	20th June 2019	14
	3. Interface Design	21st June 2019	24th June 2019	4

5	Testing Phase	25th June 2019	1st July 2019	7
	1. Unit Testing	25th June 2019	26th June 2019	2
	2. Integration Testing	27th June 2019	28th June 2019	2
	3. User Preference	28th June 2019	1st July 2019	3
6	Documentation Phase	2nd July 2019	12th July 2019	11
	1. User manual	2nd July 2019	5th July 2019	4
	2. Final Report	6th July 2019	9th July 2019	4
	3. Presentation	10th July 2019	12th July 2019	3

-Project Proposal Phase: I have given 15 days prior to proposal phase as it requires less effort and can be carried out easily. Also in this phase Scoping, Planning & Monitoring/Controlling co-exists. Also I have equally associated time to each sub-phases in this phase. I.e. 5 days.

-Analysis Phase: I have given 29 days prior to analysis phase as it is the phase we gather information and the most time consuming phase. In this phase Requirement collections, Use Cases & Architecture co-exists. I have associated most days to Use cases & Architecture as it takes certain criteria to follow up. I.e. 10 days.

-Design Phase: I have given 26 days prior to designing phase as it consumes much effort and is relatively associated with designing of components of my project. In this phase Structural Model, Behavioral Model & Interface Design Model co-exists. In this phase I have given more prior to Interface Design Model as it must have an easy and effective interface. I.e. 12 days.

-Implementation Phase: I have given 21days prior to implementation where I mainly focused on coding parts. In this Project Database Design, Code Implementation & Interface design co-exists. In this phase I have given most time to Code Implementation as because it is the toughest part where code are imported in a working manner. I.e. 14 days.

-Testing Phase: I have given 7 days prior to this phase as it is a small process just to check if the system works out as expected. In this phase Unit testing, Integration testing & User Preference co-exists. I have given most time consumption to User Preference as because gathering information on one individual is not adequate so taking many user preference it requires more time. I.e. 3 days.

-Documentation Phase: I have given 11 days prior to this phase as it mainly focuses on elaborating system in a visualized way. In this phase User manual, final report & Presentation co-exists. I have given the most time to User manual & final report as because presentation does not require much effort. I.e. 4 days.

Scheduling

Gantt chart is one of the commonly used project management time scheduled Chart use to distinguish task phase carried out throughout the project. The Schedule of my respected project is shown below with the presentation of Gantt chart as well.

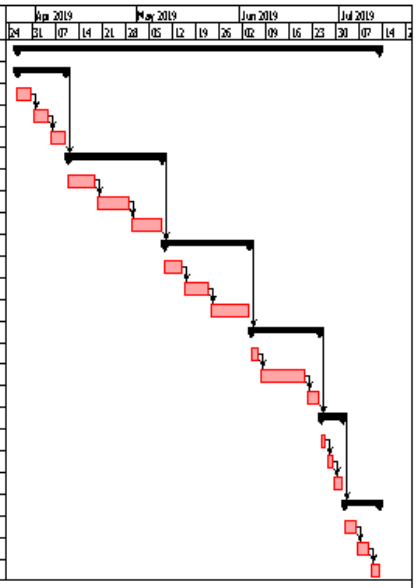
		Name	Duration	Start	Finish	Predecessors
1		**Project: UMeChat System**	**109 days**	**3/26/19 8:00 AM**	**7/12/19 5:00 PM**	
2		**Project Management Process**	**15 days**	**3/26/19 8:00 AM**	**4/9/19 5:00 PM**	
3		Scoping	5 days	3/26/19 8:00 AM	3/30/19 5:00 PM	
4		Planning	5 days	3/31/19 8:00 AM	4/4/19 5:00 PM	3
5		Monitoring & Controlling	5 days	4/5/19 8:00 AM	4/9/19 5:00 PM	4
6		**Analysis Process**	**29 days**	**4/10/19 8:00 AM**	**5/8/19 5:00 PM**	**2**
7		Requirement Collections	9 days	4/10/19 8:00 AM	4/18/19 5:00 PM	
8		Use Cases	10 days	4/19/19 8:00 AM	4/28/19 5:00 PM	7
9		Architecture	10 days	4/29/19 8:00 AM	5/8/19 5:00 PM	8
10		**Design Process**	**26 days**	**5/9/19 8:00 AM**	**6/3/19 5:00 PM**	**6**
11		Structural Model	6 days	5/9/19 8:00 AM	5/14/19 5:00 PM	
12		Behavior Model	8 days	5/15/19 8:00 AM	5/22/19 5:00 PM	11
13		Interface Design Model	12 days	5/23/19 8:00 AM	6/3/19 5:00 PM	12
14		**Implementation Process**	**21 days**	**6/4/19 8:00 AM**	**6/24/19 5:00 PM**	**10**
15		Database Design	3 days	6/4/19 8:00 AM	6/6/19 5:00 PM	
16		Code Implementation	14 days	6/7/19 8:00 AM	6/20/19 5:00 PM	15
17		Interface Design	4 days	6/21/19 8:00 AM	6/24/19 5:00 PM	16
18		**Testing Process**	**7 days**	**6/25/19 8:00 AM**	**7/1/19 5:00 PM**	**14**
19		Unit Testing	2 days	6/25/19 8:00 AM	6/26/19 5:00 PM	
20		Integration Testing	2 days	6/27/19 8:00 AM	6/28/19 5:00 PM	19
21		User Preference	3 days	6/29/19 8:00 AM	7/1/19 5:00 PM	20
22		**Documentation Process**	**11 days**	**7/2/19 8:00 AM**	**7/12/19 5:00 PM**	**18**
23		User Manual	4 days	7/2/19 8:00 AM	7/5/19 5:00 PM	
24		Final Report	4 days	7/6/19 8:00 AM	7/9/19 5:00 PM	23
25		Presentation	3 days	7/10/19 8:00 AM	7/12/19 5:00 PM	24

Gantt chart - page1

Fig: Scheduling

Gantt chart

		Name	Duration	Start	Finish	Predecessors	Resource Names
1		**Project: UMeChat Syst**	**109 days**	**3/26/19 8:00 AM**	**7/12/19 5:00 PM**		
2		**Project Management**	**15 days**	**3/26/19 8:00 AM**	**4/9/19 5:00 PM**		
3		Scoping	5 days	3/26/19 8:00 AM	3/30/19 5:00 PM		
4		Planning	5 days	3/31/19 8:00 AM	4/4/19 5:00 PM	3	
5		Monitoring & Controlling	5 days	4/5/19 8:00 AM	4/9/19 5:00 PM	4	
6		**Analysis Process**	**29 days**	**4/10/19 8:00 AM**	**5/8/19 5:00 PM**	**2**	
7		Requirement Collections	9 days	4/10/19 8:00 AM	4/18/19 5:00 PM		
8		Use Cases	10 days	4/19/19 8:00 AM	4/28/19 5:00 PM	7	
9		Architecture	10 days	4/29/19 8:00 AM	5/8/19 5:00 PM	8	
10		**Design Process**	**26 days**	**5/9/19 8:00 AM**	**6/3/19 5:00 PM**	**6**	
11		Structural Model	6 days	5/9/19 8:00 AM	5/14/19 5:00 PM		
12		Behavior Model	8 days	5/15/19 8:00 AM	5/22/19 5:00 PM	11	
13		Interface Design Model	12 days	5/23/19 8:00 AM	6/3/19 5:00 PM	12	
14		**Implementation Pro**	**21 days**	**6/4/19 8:00 AM**	**6/24/19 5:00 PM**	**10**	
15		Database Design	3 days	6/4/19 8:00 AM	6/6/19 5:00 PM		
16		Code Implementation	14 days	6/7/19 8:00 AM	6/20/19 5:00 PM	15	
17		Interface Design	4 days	6/21/19 8:00 AM	6/24/19 5:00 PM	16	
18		**Testing Process**	**7 days**	**6/25/19 8:00 AM**	**7/1/19 5:00 PM**	**14**	
19		Unit Testing	2 days	6/25/19 8:00 AM	6/26/19 5:00 PM		
20		Integration Testing	2 days	6/27/19 8:00 AM	6/28/19 5:00 PM	19	
21		User Preference	3 days	6/29/19 8:00 AM	7/1/19 5:00 PM	20	
22		**Documentation Proc**	**11 days**	**7/2/19 8:00 AM**	**7/12/19 5:00 PM**	**18**	
23		User Manual	4 days	7/2/19 8:00 AM	7/5/19 5:00 PM		
24		Final Report	4 days	7/8/19 8:00 AM	7/9/19 5:00 PM	23	
25		Presentation	3 days	7/10/19 8:00 AM	7/12/19 5:00 PM	24	



Gantt chart - page1

Fig: Gantt chart page: 1

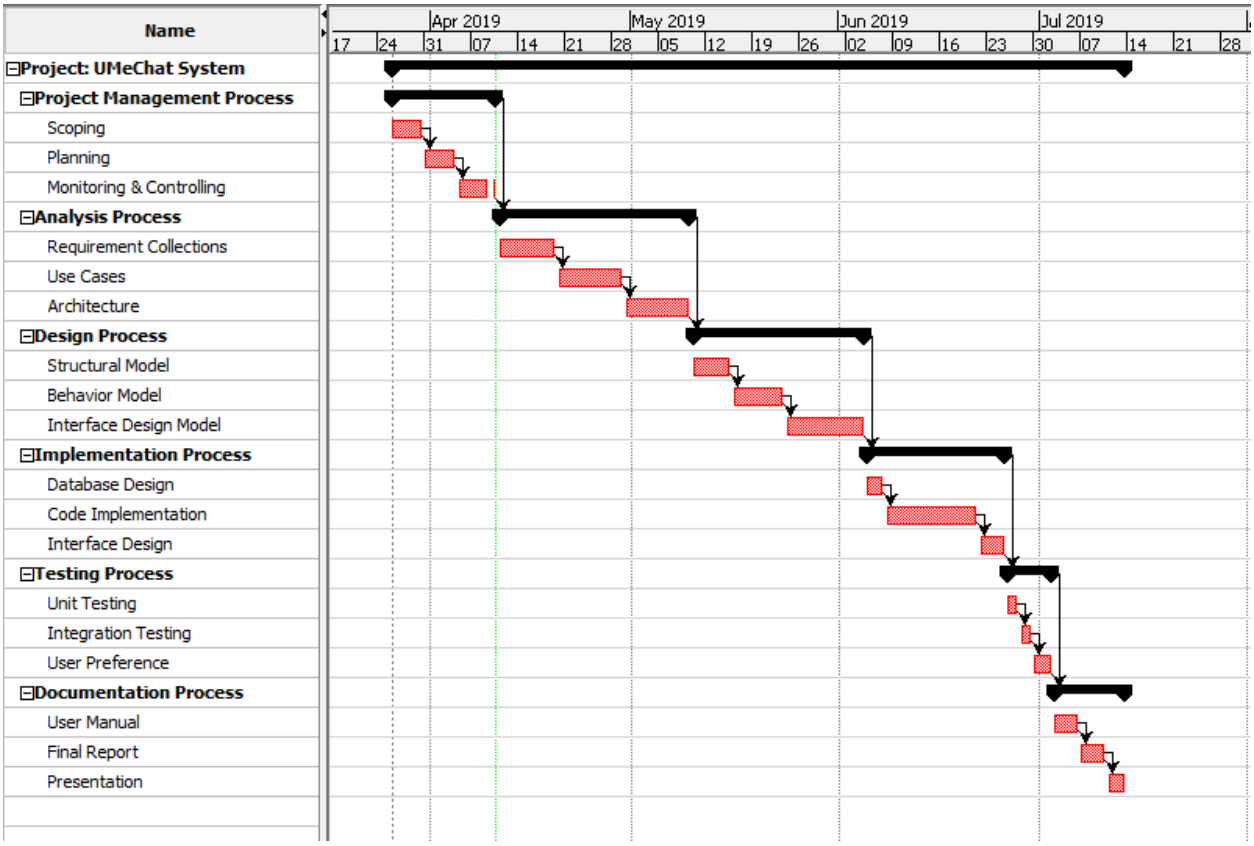


Fig: Gantt chart page: 2

Risk Management

Risk Management is the way of optimizing risk factors by recognizing, solving and preventing such risks that may occur in System lifecycle during project implementation. By calculating the impact of the risk which is the product of likelihood and consequence that might occur we can determine the risk factor rate in a system and take cautious risk solving methodologies to prevent furthermore difficulties in system development.

I.e. Impact=Likelihood X Consequences

The scale of rating is ranged from 1-3 and rated upon approaches.

Likelihood	**Value**
Low	1
Medium	2
High	3

Fig: Risk Like hood values

The scale of consequence is ranged from 1-5 and rated upon probability of consequence occurrences.

Consequence	**Value**
Very low	1
Low	2
Medium	3
High	4
Very high	5

Fig: Risk consequence values

Possible Risks

1. Device malfunction
2. Natural Disaster
3. Malware Detection/Spyware
4. Error Detection

5. Irresponsive UI
6. Data Theft
7. Poor estimation

Now by illustrating the possible risk factors we have tabulated risk Management Table below:

S.N.	Risks	Likelihood	Consequence	Impact	Action
1	Device malfunction	2	4	8	Device Maintenance necessary.
2	Natural Disaster	1	4	4	Backup of data or files and proper handling.
3	Malware Detection/Spyware	2	4	8	Antimalware /Antivirus software's to be used.
4	Error Detection	2	5	10	Approach of developing must be carried out effectively.
5	Irresponsive UI	2	4	8	Pre- testing of system in different devices.
6	Data Theft	3	4	12	Data Security must be made high and pairing password must be difficult.
7	Poor estimation	3	4	12	Estimate proper time and work effort with proper milestone necessarily.

Configuration Management

It is the management process which helps to review all system and make certain that any changes in any one system doesn't adversely affect others. It helps to re-install pre-version if necessary. This structural representation keeps all the records of changes that occurs throughout the system. All data and files are arranged in each directory accordingly for easy maintenance and data configuration.

The figure of directory structure is given below:

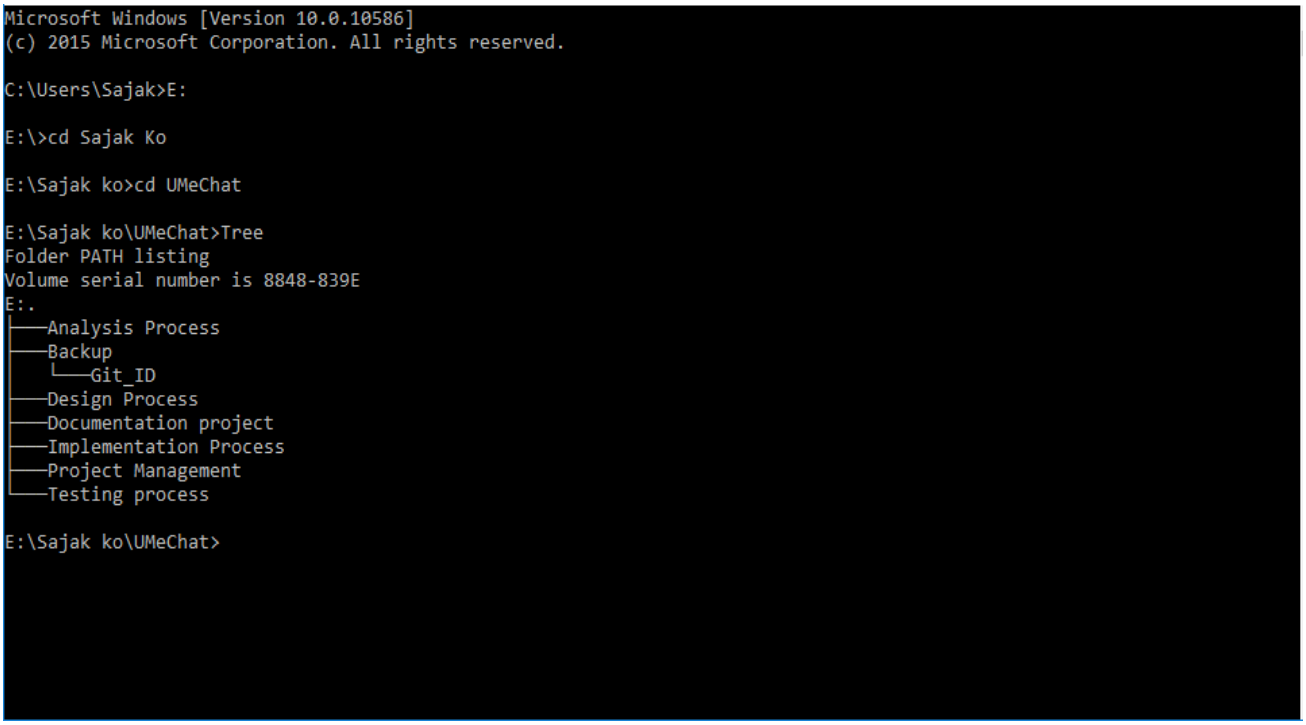


Fig: Directory Structure of my Project

I have used Git-Lab for this Project. My Git-Lab id is:sinoxcrest@gmail.com/sinoxcrest

Repository Link: https://github.com/sinoxcrest/UMeChat

Fig: Sign Up to Git Lab

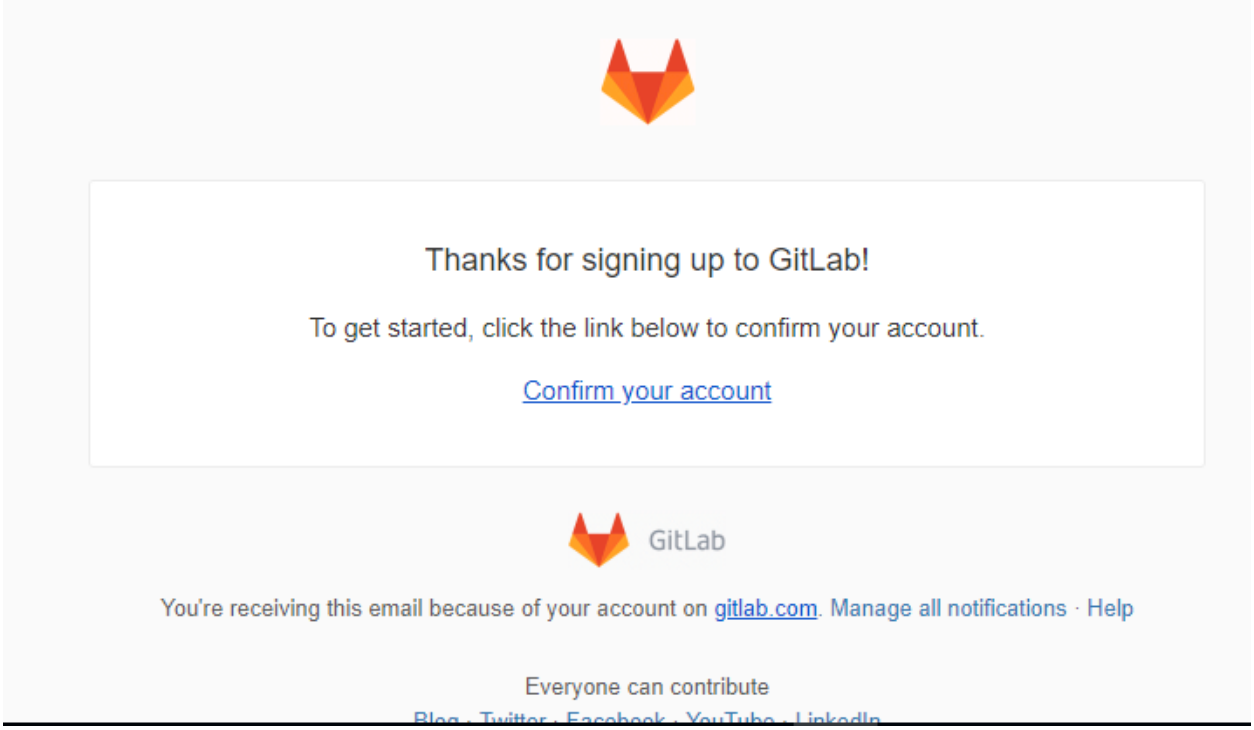


Fig: Conforming account on GitLab

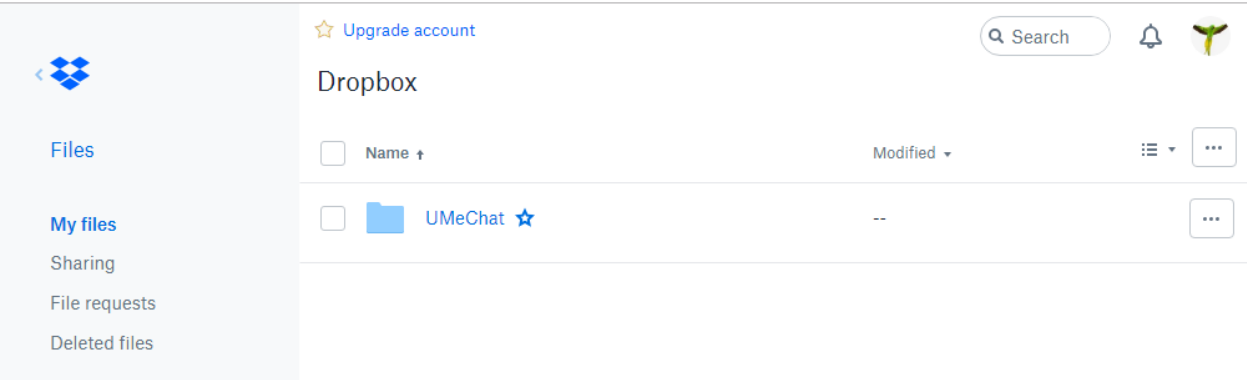


Fig: Dropbox Backup

Conclusion

From this project I concluded many more things about Importance of Planning, Scoping and much more which are very essential in system development. Also we learn a lot about risk management and Design pattern as well. This very project has helped me in many aspects so I would like to thank my teacher for assigning me with this task. Also I came to know the necessity of Proposal based project Management, Importance of work breakdown structure, Design patterns to be followed, System architecture to be followed and much more. The Gantt chart made to pre-estimate time consumption was also stated in this proposal aspects which would help to further divide task work accordingly in my project. Thus this proposal project was a success and was quiet beneficial for my project development methodology.

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