PUCIT
Punjab University College of Information Technology

First Deliverable

Version 1.0

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1 Introduction

With the advancement in technology people prefer to use the latest technology to make their life easier and comfortable. Android revolutionized the way cell phones used to be. People are getting used to touch technology. The purpose of our software is to help the hotels to make their system more interactive and give customers a luxurious feel and interactive way to enjoy their stay in hotel. On the other side make it more easy and manageable for the hotel staff to deal with customer's needs and comfort.

The main aim of this project is to provide an android combined with web based hotel management system. Its interactive and easy interface will improve the communication, dealing and managing the system of hotel. It will handle all the dealings starting from check in, to the stay till the customer check out of hotel. This will benefits almost every single stakeholder in the hotel. That could be a driver, security guard, cook, room service manager or could be any related person in the working system of hotels.

The special thing about this project is that it is not only related to hotel management staff but it is also for customers. It means customers will also be interacting with this software all the time during their stay in hotel.

Another beauty of this project will be its flexible design to add more features or interactive roles in the system.

1.1 Project/Product Feasibility Report

In this, we will tell about the feasibility of our project. A feasibility study is a basic and an important phase in the development of business related projects. The objective of feasibility study is to uncover the weaknesses and strength of existing system and proposed the better system. Feasibility Report for "**Interactive EDine and Line In**" determines that to which extent this project is beneficial for us. Is it suitable or not? Can we meet customer's requirements? Whether the Completion of this project will cause loss or profit? Moreover the cost and benefits related to the project. Are we able to complete the project with its requirements and quality specifications? How much realistic are our deadlines in the sense of time and cost? Will they provide the required tools and budgets? To judge the feasibility we require the cost and the value we want to obtain. The feasibility study is the study of challenges requirements, problems and solutions of all the requirements and problems with available resources. Another meaning of feasibility is that at which extent data and information is readily available or can be obtain with all the available resources. The feasibility study should provide the historical background of business or project. It is helpful to take the right decisions.
Here we will deal with different type of feasibilities:

- Technical
- Operational
- Economic
- Schedule
- Specification
- Information

- Motivational
- Legal and Ethical

1.1.1 Technical Feasibility

The technical feasibility report clarify either the project can be developed or not with the help of appropriate hardware and software, information and available resources of the organization. While assessing our team's ability to construct the proposed system, and determining whether team would be able to develop the system and whether the needed resources are available or not we state the following:
The application under development is to be developed using the following tools and technologies:

DEVELOPMENT TECHNOLOGY:
The development technologies used in our project are:

- MS Office, MS Project
- PHP
- Rational Rose
- For Data Base MS Access, Oracle, SQL,Vamp ...
- Net Beans
- Visual studio professional 2010
- Eclipse
- Dream Weaver

PEER TECHNOLOGIES:
We shall be using java as peer technology.

1.1.2 Operational Feasibility

Operational feasibility is important for understanding the implementations and difficulties one face to use the application. The basic aim is to analyze that whether the solution will be useable by the target customer and the users of the software solution being produced must be able to effectively use and operate the system. In this, use the questions to identify relevant operational factors. Could this option improve or reduce product or service quality, productivity, Will additional staff or time is required to implement, operate, or maintain this option? Any new equipment needed. It is stated that the system will not include any complex or hard to operate working environment. It would be a user-friendly website, displayed comprehensively to assist the user in subscribing the required service. An application make economic and technical sense, it must also make operational sense too. Evaluation of technical ability of the staff to operate the project and to deal with the complicated problems arising throughout the development of the project. Our team members are technical skilled and capable of facing any kind of challenges.

1.1.3 Economic Feasibility

Under economic feasibility we handle ongoing cost, maintenance cost, and hardware and equipment management. In this cost required for the development of project is analyzed, what benefits we'll be getting after the completed execution of the project and how much worthy those benefits will be when assessed in comparison with the consumed resources. The basic concern of economic feasibility is:

- Cost estimation
- Calculation
- Benefit estimation

Now cost can be analyzed by first evaluating the cost required for the execution of the project and the services provided at the time of deployment, this can be entitled as Development Cost. Quantitative analysis techniques later in the deliverable are used to determine this cost and assure that the development team is capable of developing it. In the second run, when evaluating the Maintenance Cost we state that it is feasible for the organization to upgrade, or maintain the product after deployment, as it doesn't cost much. But we have calculated estimated cost for our project along with the estimated profit as under:

Estimate Cost

Development cost is:	Rs. 108000
Maintenance Cost is:	Rs. 15000
Total operation cost is:	Rs. 25000
Total Cost Budgeted is:	**Rs. 148000**

Estimate Benefits

- Profit after Tax 10% to 12%
- Repellent margin exceeding 30% and more durable
- Time of break-even lesser then 1.5 years

1.1.4 Schedule Feasibility

Schedule feasibility is defined as the likelihood of a project being completed within its scheduled time frame. Schedule feasibility is used to display total scheduled time vs. the activities performed needed to complete the project. We are using Gantt chat that represents the schedule feasibility. Gantt chart displays the activities against the time as a horizontal bar. Time overlapping activities can be seen using the Gantt chart whereas which activities can be done in parallel. However the deadlines provided to us are given below and the schedule detail is described in Gantt chart:

Date	Time	Deliverables
November 12, 2013	12:50 pm	Proposal

December 5, 2013		First Deliverable
January 6, 2014		Second Deliverable
January 20, 2014		Prototype Review 1

1.1.5 Specification Feasibility

The specification of the project will accomplish the requirements of "**Interactive EDine and Line In**". The requirements specified in our project are clear and real. We're certain to achieve our project specifications by coordinating and combining the work of team members in accordance with the schedule. The recourses available to us is quite enough for the required features and functionalities of the project objectives therefore high concentration will be given to the features wanted by the organization in order to gain the customer satisfaction, by providing excellent functionalities and support.

1.1.6 Information Feasibility

Information is a very vital aspect almost for all the projects. Accurate information leads the project towards the achievement. We have gathered the information of "**Interactive EDine and Line In**" from different resources and deep study. We all team members analyzed that information as well as they have collected information individual to make it clearer. The information is retrieved and gathered from different sources provided by the organization to develop the project is crystal clear and appropriate information kicks up the project to its success.

1.1.7 Motivational Feasibility

Motivation is a set of facts and arguments used in support of a proposal. We had to motivate the end-users about our product. We pursued them to our product by telling about the specifications, scope and functionalities of our project. Motivation is considered as the amount of effort and hard work an individual is willing to put into their work. Therefore, it is important to ensure that any team is highly motivated towards their project. A lack of motivation in any member of a team can have a negative effect, reducing the group's effectiveness and possibly leading to the de motivation of others. So that all team member motivate each other to work for our better success in our project as well as for future. The project advisor also checks our work and motivates us for more enhanced performances

1.1.8 Legal & Ethical Feasibility

The implementation of our system is according to the legal rule and regulations. By discussing this with different resources, organizations, our advisor and deep analysis We have satisfied all the ethical rules as well. Furthermore as it is a business application so there is no legal issue, have direct interaction with the organization and there is no copyright conflict with other companies.

1.2 Project/Product Scope

"Interactive EDine and Line In" plays a great role and has a potential effect on day to day performance measures, this type of system have highly evolved from decades due to high demand for their use, but our project includes some unique features too. Scope of our project is rhetorical. This project is to facilitate the hotel management staff and the customers. Customers and management staff would be dealing with the system using tablets and computers. Customers will be given their login and tablet when they check in and they can order food , ask for room service , see offers and packages , ask any queries , book a cab for travel and a lot of other stuff that a hotel provides to its customers through their account using the tablet. The purpose of our software is to help the hotels to make their system more interactive and give customers a luxurious feel and interactive way to enjoy their stay in hotel. On the other side make it more easy and manageable for the hotel staff to deal with customer's needs and comfort. It is basically an android combined with web based hotel management system. It's interactive and user friendly interface will improve the communication, dealing and managing the system of hotel. Information Technology is a fast paced and rapidly growing industry. Consequently the competition in this industry has increased steadily over the years. The project under-development covers the local and the overseas customers and thus is supposed to provide services to all without any discrimination. The basic objectives are:

- To avoid manual and repetitive work
- Real time information of availability of room
- To facilitate customer in ordering for food.
- Making most things electronic so that chance of human error will be reduced.
- To help management to launch new offers and deals.
- Helps management to launch new offers and deals.
- Orders placed by the customers will directly be notified to the cooks.
- Customers can easily interact with software to order food, call for room service, advance booking, see latest deals and offers etc.

On the other side the hotel management staff would be interacting through the software to fulfill the needs of customers and managing their work and duties. This would make their work easier and this new technology will also help the hotel to have some competitive advantage upon other hotels.

1.3 Project/Product Costing

A metric is a measurement tool that is used in process development process. Metrics are divided into two wide categories:

- Knowledge oriented metrics: these are oriented to tracking the process to evaluate, predict or monitor some part of the process.
- Achievement oriented metrics: these are often oriented to measuring some product aspect, often related to some overall measure of quality of the product.

1.3.1 Project Cost Estimation by Function Point Analysis

Function point allows the measurement of software size in standard units, independent of the underlying language in which the software is developed. Instead of counting the line of code that make up a system, count the number of external (inputs, outputs, inquires and interfaces) that make the system.

Number of User Inputs

Serial No	Inputs	Complexity
1	Signup	High
2	Food Ordering	Low
3	Room Ordering	Low
4	Marriage Halls	Low
5	Items Ordering	Low
6	Price of Items	Low
7	Barcode Detection	High
8	Bills Of Customers	Average
9	User Logout	low
10	Marriage Halls Booked	Average
11	No.Of rooms Booked	Average
12	New employee Data	High
13	Extra Expenses	Average
14	Complains	Average
15	Other Utility Bills	Average
16	All commercial Taxes	Average

Number of Outputs

Serial No	Outputs	Complexity
1	Main menus	Low
2	Bills	High
3	Help Menu	Low
4	No. Of rooms Available	Average
5	No. Of Marriage Halls Available	Average
6	Order Status	High
7	Food Menus	Average
8	Special offers	Average
9	No. Of Guests in hotel	High
10	Expenses and earnings	High

Number of Inquiries

Serial No	Inquiries	Complexity
1	Sign In	High
2	Available Rooms	Low
3	Available Marriage Halls	Low
4	Order Status	Average
5	Current Bills	High
6	Total Employee Working	Average
7	Table Available In Dinning Hall	Average
8	Previous Expenses	Average
9	Special Offers	Average

Number Of Interfaces

Serial No	**Interfaces**	**Complexity**
1	User Interface	High
2	Management Interface	Average
3	Employee Interface	Average

-: F.P. Estimation = Count Total * [0.65 + 0.01 * (Fi)]

Types Of Component	**Count**	**Weight**			**Total**
		Low	**Avg.**	**High**	
External Inputs	16	6*3 = 18	7*4 = 28	3*6 = 18	64
External Outputs	10	2*4 = 8	4*5 = 20	4*7 = 28	56
External Inquiry	9	2*3 = 6	5*4 = 20	2*6 = 12	38
Internal Logical file	5	2*7 = 14	2*10 = 20	1*15 = 15	49
External Interfaces	3	1*5 = 5	1*7 = 7	1*10 = 10	22
Count Total					229

Global Factors:

Data Communication	**6**
Distributed Data Processing	**4**
Performance	**5**
Heavily Used Configuration	**3**

Transaction Rate	**4**
On-Line Data Entry	**1**
End User Efficiency	**5**
On-Line Update	**1**
Complex Processing	**3**
Reusability	**5**
Installation Ease	**5**
Operational Ease	**5**
Multiple Sites	**1**
Facilitate Change	**4**
Total = ∑Fj	**52**

Calculate Function Point:

FP est. = Count Total * [0.65 + 0.01 * (Fj)]
= 229 * [0.65 + 0.01 * (52)]
= 229*[1.17]
FP est. = 267.93
Productivity = 40FP / month
Labor Rate =RS. 25,000 / month
Function Point = 268 FP

Cost/FP = Labor Rate / Productivity Parameter
Cost/FP =25,0000/ 40
Cost/FP = 625 RS. / FP

Total Project Cost = FP est.* (Cost / FP)
Total Project Cost = 268 * 625
Total Project Cost = RS. 167,500

Total Estimated Effort = FP est. / Productivity Parameter
Total Estimated Effort = 268/ 40
Total Estimated Effort = 6.7 PM

1.4 CPM - Critical Path Method

Phases

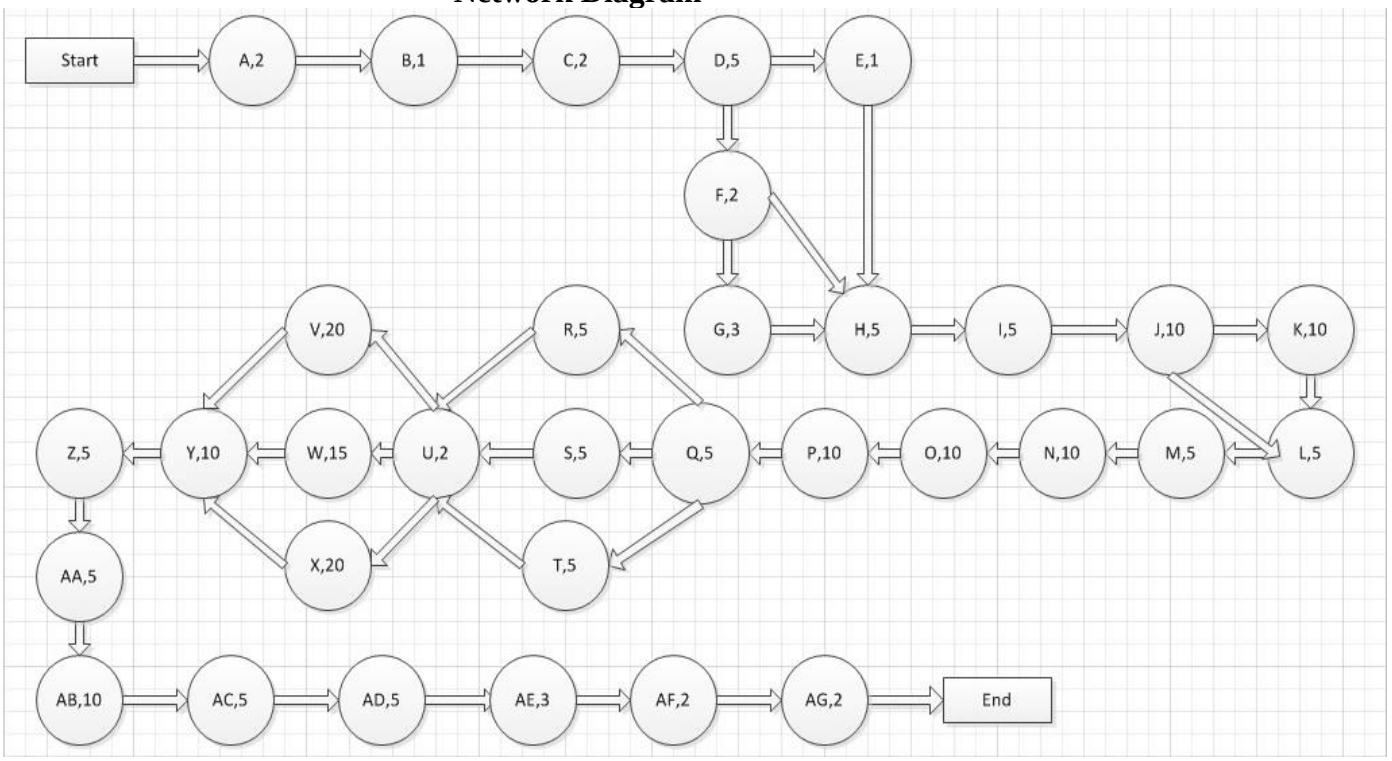
Information gathering & planning phase	Project scope
	Conduct Meeting
	Risk List
	Proposal Preparation
	Feasibility Report
Analysis Phase	Legal and ethical concern
	Cost Estimation
	System specification
Designing Phase	Identify External Entities
	Creating Data Flow Diagram
	Capturing Shall statement
	Allocating Requirements
	Identify Use cases
	Domain Modeling
	Creating sequence Diagram
	Creating Entity Relationship Diagram
Development Phase	Application Layout
	Customers Interfaces
	Admin Interfaces
	Employee Interfaces
	Defining Modules
	Implementing Room Reservation Module
	Implementing Restaurant Module
	Implementing management Module
	Combing the modules
	Connecting to database
	Defining the tables in Database
	Component Integration
Testing Phase	Black Box testing
	White Box testing
Deployment Phase	Deliver and Installation
	Training Session
	Feed Back

Sequence of the Activities

NAME	TASK	PREDECESSOR	DURATION
A	Project Scope	None	2 days
B	Conduct Meeting	A	1 days
C	Risk List	B	2 days
D	Proposal Preparation	C	5 days
E	Legal and Ethical Concern	D	1 day
F	Feasibility Report	D	2days
G	Cost Estimation	F	3 days
H	System specification	E,F,G	5 days
I	Identify External Identities	H	5 days
J	Creating DFD	I	10 days
K	Capturing Shall Statement	J	10 days
L	Allocating requirements	J,K	5 days
M	Identify Use cases	L	5 days
N	Domain Modeling	M	10 days
O	Creating Sequence Diagram	N	10 days
P	Creating ERD	O	10 days
Q	Application Layout	P	5 days
R	Customers Interfaces	Q	5 days
S	Admin Interfaces	Q	5 days
T	Employee Interfaces	Q	5 days
U	Defining Modules	R,S,T	2 days

V	Room Reservation Module	U	20 days
W	Restaurant Module	U	15 days
X	Management Module	U	20 days
Y	Combining the modules	V,W,X	10 days
Z	Connecting to database	Y	5 days
1	Defining the tables	Z	5 days
2	Component Integration	1	10 days
3	Black Box testing	2	5 days
4	White Box Testing	3	5 days
5	Deliver and Installation	4	3 days
6	Training Session	5	2 days
7	Feed Back	6	2 days

Network Diagram



Activity Completion Time

Activity	Duration	ES	EF	LS	LF	TS	FS
Start	--	0	0	0	0	0	0
A	2 days	0	2	0	2	0	0
B	1 days	2	3	2	3	0	0
C	2 days	3	5	3	5	0	0
D	5 days	5	10	5	10	0	0
E	1 day	10	11	14	15	4	4
F	2 days	10	12	10	12	0	0
G	3 days	12	15	12	15	0	0
H	5 days	15	20	15	20	0	0
I	5 days	20	25	20	25	0	0
J	10 days	25	35	25	35	0	0
K	10 days	35	45	35	45	0	0
L	5 days	45	50	45	50	0	0
M	5 days	50	55	50	55	0	0
N	10 days	55	65	55	65	0	0
O	10 days	65	75	65	75	0	0
P	10 days	75	85	75	85	0	0
Q	5 days	85	90	85	90	0	0
R	5 days	90	95	90	95	0	0
S	5 days	90	95	90	95	0	0
T	5 days	90	95	90	95	0	0
U	2 days	95	97	95	97	0	0
V	20 days	97	117	97	117	0	0
W	15 days	97	112	97	112	5	5
X	20days	97	117	97	117	0	0
Y	10 days	117	127	117	127	0	0
Z	5 days	127	132	127	132	0	0
1	5 days	132	137	132	137	0	0
2	10 days	137	147	137	147	0	0
3	5 days	147	152	147	152	0	0
4	5 days	152	157	152	157	0	0
5	3 days	157	160	157	160	0	0
6	2 days	160	162	160	162	0	0
7	2 days	162	164	162	164	0	0

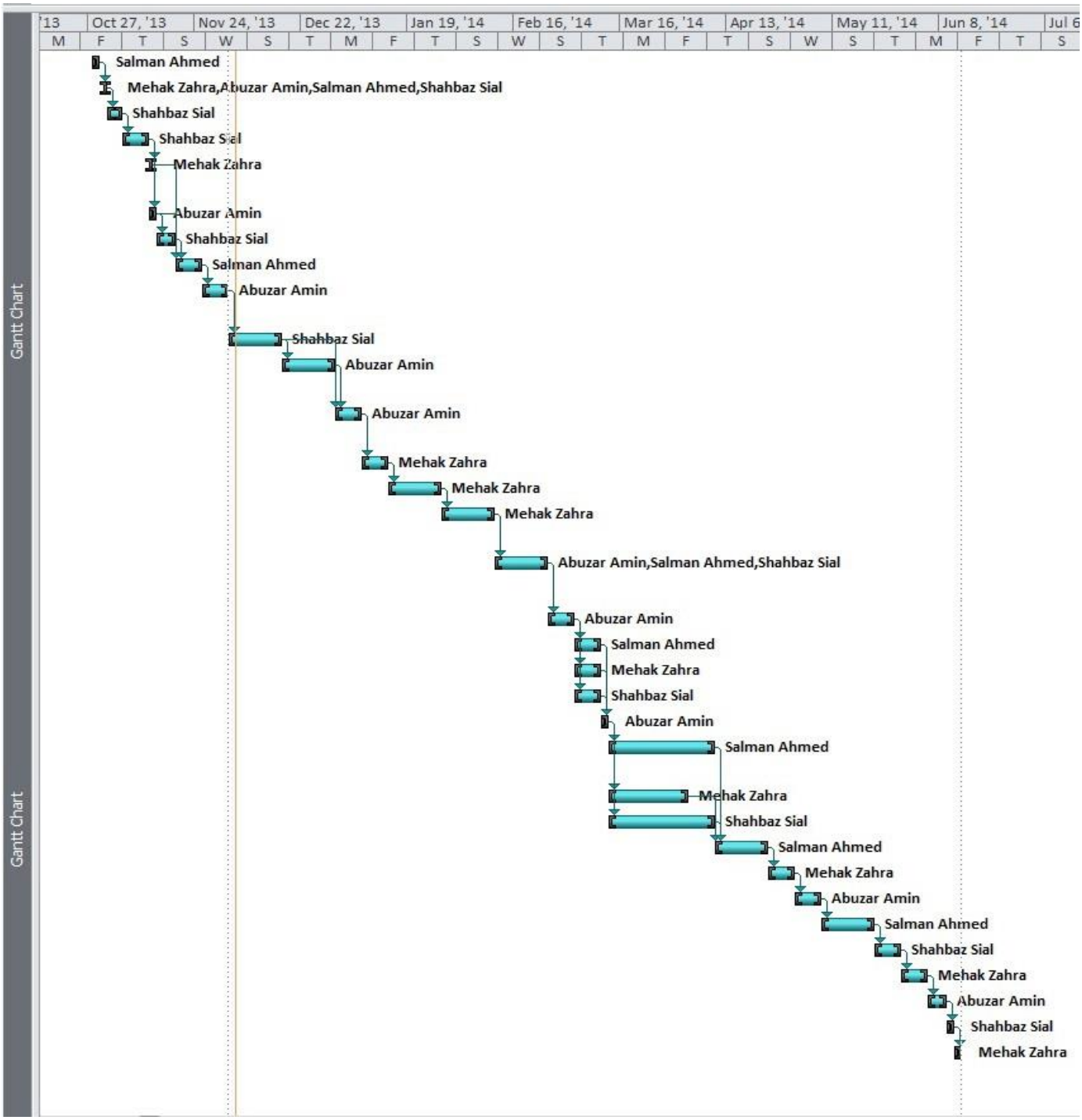
Critical Path

Start -> A -> B -> C ->D-> F -> G -> H -> I -> J -> K -> L -> M -> N -> O -> P->Q ->R->U->V ->Y->Z->1->2->3->4->5->6->7-> *End*

1.5 GANTT CHART

Gantt Chart

	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	Project Scope	2 days	Mon 10/28/13	Tue 10/29/13		Salman Ahmed
2	Conduct Meeting	1 day	Thu 10/31/13	Thu 10/31/13	1	Mehak Zahra,Abuza
3	Risk List	2 days	Fri 11/1/13	Mon 11/4/13	2	Shahbaz Sial
4	Proposal Preperation	5 days	Tue 11/5/13	Mon 11/11/13	3	Shahbaz Sial
5	Legal And ethical Concern	1 day	Tue 11/12/13	Tue 11/12/13	4	Mehak Zahra
6	Feasibility Report	2 days	Tue 11/12/13	Wed 11/13/13	4	Abuzar Amin
7	Cost Estimation	3 days	Thu 11/14/13	Mon 11/18/13	6	Shahbaz Sial
8	System Specification	5 days	Tue 11/19/13	Mon 11/25/13	7,5,6	Salman Ahmed
9	Identify External Entities	5 days	Tue 11/26/13	Mon 12/2/13	8	Abuzar Amin
10	Creating DFD	10 days	Tue 12/3/13	Mon 12/16/13	9	Shahbaz Sial
11	Capturing Shall Statement	10 days	Tue 12/17/13	Mon 12/30/13	10	Abuzar Amin
12	Allocating Requirements	5 days	Tue 12/31/13	Mon 1/6/14	11,10	Abuzar Amin
13	Identify Use cases	5 days	Tue 1/7/14	Mon 1/13/14	12	Mehak Zahra
14	Domain Modeling	10 days	Tue 1/14/14	Mon 1/27/14	13	Mehak Zahra
15	Creating Sequence Diagram	10 days	Tue 1/28/14	Mon 2/10/14	14	Mehak Zahra
16	Creating ERD	10 days	Tue 2/11/14	Mon 2/24/14	15	Abuzar Amin,Salman
17	Application Layout	5 days	Tue 2/25/14	Mon 3/3/14	16	Abuzar Amin
18	Customers Interfaces	5 days	Tue 3/4/14	Mon 3/10/14	17	Salman Ahmed
19	Admin Interfaces	5 days	Tue 3/4/14	Mon 3/10/14	17	Mehak Zahra
20	Employee Interfaces	5 days	Tue 3/4/14	Mon 3/10/14	17	Shahbaz Sial
21	Defining Modules	2 days	Tue 3/11/14	Wed 3/12/14	20,18,19	Abuzar Amin
22	Room Reservation Module	20 days	Thu 3/13/14	Wed 4/9/14	21	Salman Ahmed
23	Restaurant Module	15 days	Thu 3/13/14	Wed 4/2/14	21	Mehak Zahra
24	Management Module	20 days	Thu 3/13/14	Wed 4/9/14	21	Shahbaz Sial
25	Combining the Modules	10 days	Thu 4/10/14	Wed 4/23/14	22,23,24	Salman Ahmed
26	Connecting to Database	5 days	Thu 4/24/14	Wed 4/30/14	25	Mehak Zahra
27	Defining the tables	5 days	Thu 5/1/14	Wed 5/7/14	26	Abuzar Amin
28	Component Integration	10 days	Thu 5/8/14	Wed 5/21/14	27	Salman Ahmed
29	Black Box testing	5 days	Thu 5/22/14	Wed 5/28/14	28	Shahbaz Sial
30	White Box testing	5 days	Thu 5/29/14	Wed 6/4/14	29	Mehak Zahra
31	Deliver and Installing	3 days	Thu 6/5/14	Mon 6/9/14	30	Abuzar Amin
32	Training Session	2 days	Tue 6/10/14	Wed 6/11/14	31	Shahbaz Sial
33	Feed Back	2 days	Thu 6/12/14	Fri 6/13/14	32	Mehak Zahra



1.6 Introduction to Team member and their skill set

Our Team consists of four members. The team members are blessed with many skills related to our project and the team is ready to use these skills for the development of project. The skills of the team member are described below.

Syed Salman Ahmad Bukhari:

He is the group leader for our team. He has excellent programming skills and Database concepts. He is very brilliant programmer. He has already developed many web-based applications, android applications. He has good leadership characteristics, strong communication and good interpersonal skills. He has a dominant role in managing our project as well as keeping high level of coordination among the team members. He has good knowledge of tools Rational Rose, Net Beans IDE. He has strong:

- Requirement Elicitation
- Requirement Specification
- Web application development
- Management skills
- Good Software Engineering Skills
- Programming skills

Abuzar Amin:

Abuzar is a group member. He has got skills in programming, database management, and software engineering concepts. He has also developed many projects. He possesses superb communication as well as technical writing skills. He has good command on Gantt chart etc. He has got skills on Project Management Requirements Elicitation and Software testing He has strong:

- Requirement Inception
- Programming skills
- Good Web application development Skills
- Database management skills
- Software Engineering Skills
- Designing Gantt chart
- CPM analysis

Syeda Mehak Zahra:

Mehak is a group member. She has got good skills in designing, database management, documentation , coding and software engineering concepts. She has also developed and designed many projects. She possesses superb communication as well as technical writing skills. Documentations and designing is her plus point. She has key role in managing the project as well as keeping high level of coordination among the team members. She has good knowledge of HTML and designing. She has strong:

- Software Feasibility
- Project Scheduling skills
- Requirement Elicitation

- Web application designing
- Good OOAD Skills
- Programming skills
- Designing
- Use case modeling

Muhammad Shahbaz:
Shahbaz is a group member. He has excellent skills in programming, Software Engineering and capable of designing outstanding graphical user interfaces for applications. He has strong perception about the project and analytical skills to perform project management, software engineering and database design concepts, capable of team management and cooperative with team players. He has strong:

- Good Software Engineering Skills
- Graphical User Interface Designing Capability
- Technical skills
- UML diagrams designing
- Web application development
- Programming skills
- Good Analysis skills

1.7 Tools and Technology with reasoning

Following tools and technology would be needed in our project:

Technology for project modeling:

- **Rational Rose:**

IBM Rational Rose is an object-oriented Unified Modeling Language (UML) software design tool intended for visual modeling and component construction of enterprise-level software applications. Rational Rose is an operational tool set that uses UML as it means for facilitating the capture of domain semantics and architecture /design intent. We will be using it for creating use case diagrams for our project deliverables.

Technology for Project Planning:

- **Microsoft Project 2010:**

Microsoft Project is a project management software program, developed owned by Microsoft. Microsoft Project is software for developing schedules, critical path analysis, managing resources and creating Gantt chart. We will be using it for creating UML diagrams like Gantt chart and work breakdown structure (WBS) for our project deliverables.

Technology for Database Design:

- **Dia Designing Tool:**

Dia is a free drawing tool that is useful for ER Diagrams in the style and diagram formatting. Its interface is user friendly and easy to use.

Technology for UML modeling:

- **MS Visio:**

It represents flow of Critical Path Method diagram to assess the time for completion of project.

Technology for Web Interface Designing:

- **Dream Viewer:**

Dream Viewer will be used for the development of web site interface and designing.

Technology for Android Development:

- **Eclipse Integrated Development Environment**

Eclipse is an Integrated Development Environment (IDE) comprising a base workspace and an extensible plug-in system for customizing the environment. It is written mostly in Java. It can be used to develop applications in Java and, by means of various plug-ins, other programming languages Working in android language we use Eclipse for coding purposes

Technology for Website:

- **Net Beans**

NetBeans is an integrated development environment (IDE) for developing primarily with Java, but also with other languages, in particular PHP, C/C++, and HTML5.It is also an application platform framework for Java desktop applications and others.

Technology for documentation:

- **Microsoft Word 2010**

Microsoft Word is a very efficient and reliable word processor. We'll be using this tool for our documentation purposes.

Technology for data base:

- **Xampp**

XAMPP is a free and open source cross-platform web server solution stack package, consisting mainly of the Apache HTTP Server, MySQL database, and interpreters for scripts written in the PHP and Perl programming languages.

1.8 Vision Document

We envision an "**Interactive EDine and Line In**" which would be a web platform as well an android app. Here customer can register and make reserve rooms, cancel booking, order for food, book cab , ask for laundry in user friendly environment. The purpose of our software is to help the hotels to make their system more interactive and give customers a luxurious feel and interactive way to enjoy their stay in hotel. On the other side make it more easy and manageable for the hotel staff to deal with customer's needs and comfort. The main aim of this project is to provide an android combined with web based hotel management system. Its interactive and easy interface will improve the communication, dealing and managing the system of hotel. It will handle all the dealings starting from check in, to the stay till the customer check out of hotel. This will benefits almost every single stakeholder in the hotel. That could be a driver, security guard, cook, room service, manager or could be any related person in the working system of hotels.
Our system will basically share the work load of employees and would decrease need of manpower which would one source of revenue.

Our Strategic Priorities and goals will be:

- To facilitate our customers
- Provide interactive and user friendly technology
- To avoid manual and repetitive work
- Making most things electronic so that chance of human error will be reduced.
- To help management to launch new offers and deals.
- Helps management to launch new offers and deals.
- Orders placed by the customers will directly be notified to the cooks.
- Customers can easily interact with software to order food, call for room service, advance booking, see latest deals and offers etc.
- To provide innovative way of food ordering
- To facilitate all staffs including cook, receptionist, guards, drivers and managers

1.8.1 Business opportunity:

The business opportunity for our project is very high. At present there are very few such webs oriented along with android technology present to facilitate not only customers but every staff member which include manager, driver, guard, cook, waiters, and laundry boys. This will attract the customers through its innovative technologies and decrease the man power as all work that was done manually before will be operated through our system.

1.8.2 Problem Statement:

Currently systems are working that serve some of the functionalities specified in our system they cover some areas of modules discussed here. An overall package is still missing to facilitate these facilities. This projects goals to facilitate each and every person associated with hotels. Our focus is not only customers. This will serve both end users. These will provide modernized communication between two end users.

1.9 Risk List

Risk is the probability of damage, liability, loss, injury or suffering harm that may be due to some external and internal reasons these can be caused of occurring some problem and can be prevented by taking some steps. Regarding to the importance of risks, a list is to be maintained. This list is sorted in descending order of importance.
We have used following framework to manage risks and formation of it based on following things:

- Risk item check list
- Risk table
- Risk Matrix

1.9.1 Risk Item Check List:

Risk	RiskDescription
1	Tools limitations and environment incompatibility issues
2	Financial issues
3	Technology variations
4	Copy right Violation
5	Time management issue
6	Financial issue due to wrong computation of estimates cost
7	Database security risk
8	Development of the functions which may not match with the requirements requires redesign and implementation
9	Team oriented problems
10	Competitive products
11	Network availability

1.9.2 Risk Table

Qualitative Risk Analysis

Probability	Weight
Rare	0.2
Unlikely	0.3
Possible	0.5
Likely	0.7
Certain	0.9

Impact	Weight
Negligible	0.1
Marginal	0.3
Moderate	0.5
Critical	0.7
Catastrophic	0.9

Risk	RiskDescription	Probability	Impact
R1	Tools limitations and environment incompatibility issues	Rare	Critical
R2	Financial issues	Possible	Critical
R3	Technology variations	Possible	Moderate
R4	Copy right Violation	Rare	Critical
R5	Time management issue	Rare	Catastrophic
R6	Financial issue due to wrong computation of estimates cost	Possible	Negligible
R7	Database security risk	Rare	Catastrophic
R8	Development of the functions which may not match with the requirements requires redesign and implementation	Rare	Critical
R9	Team oriented problem	Possible	Moderate
R10	Competitive products	Possible	Critical
R11	Network unviability	Rare	Critical

1.10 Introduction

1.10.1 Requirement Specifications

In Requirement Engineering, requirements specification would lead to the following steps:

- Introduction
- Existing System Specifications
- Organizational Chart
- Scope of the System
- Summary of Requirements (Initial Requirements)
- Identify external interfaces
- Capture “shall” statements
- Allocate requirements
- Prioritize requirements
- Development of requirements traceability matrix
- High Level Use Case Diagram

1.10.2 Existing System

Existing systems have following problems to which we are providing solution in our system. There is no system that covers all the features that our project covers facilitating not only customers but also all the staff members receptionist, manager, guard, driver, laundry boys, waiters. Our project covers both end users. Presently there are some systems that focus online booking of rooms but do not provide friendly communication between users and management staff. Presently there is no system whose focus is to facilitate each and every person associated with hotels rather than only customers. Booking of cabs, food ordering, two way modernized communication, automated rooms with tabs, and automatized kitchen equipped with android latest technology all in one package is not present in existing systems.

1.10.3 Scope of the System:

This project is to facilitate the hotel management staff and the customers. Customers and management staff would be dealing with the system using tablets and computers. Customers will be given their login and tablet when they check in and they can order food , ask for room service , see offers and packages , ask any queries , book a cab for travel and a lot of other stuff that a hotel provides to its customers through their account using the tablet. The purpose of our software is to help the hotels to make their system more interactive and give customers a luxurious feel and interactive way to enjoy their stay in hotel. On the other side make it more easy and manageable for the hotel staff to deal with customer's needs and comfort.

1.10.4 Summary Of Requirements:

Some of the most important modules involved in our project are described below:

Customer registration and membership:
In this module the picture of the customer will be taken by using the android's camera and his id card's bar code will be scanned and he will be given his username and password that will be generated randomly. If he/she is a regular customer then he/she can apply for the membership so that he/she will be given personal login to use whenever he/she visits the hotel.

Room allotment and advanced booking:
The user will be assigned room and he can also book his room in advance for future visit.

Food Ordering Module:
User can see the menu and can order anything he wishes through his tablet. When he place the order there could be a large screen in the kitchen on which all the ordered things can be seen by the cooks or we can individually assign the order to the cooks. This would be a two way communication channel the user can send some comment or his food specification so that everything would be according to his choice on the other hand the cooks can reply to their message.

Room Service Module:
User can call for the room service or can directly communicate with hotel management in case they need any kind of help. They can rate the service and give suggestions through this.

Bill management:
This module will be responsible for managing the current bill of the clients and their history and client can see it any time during his stay at the hotel.

Home Delivery:
Users at home can also order the food for home delivery through the hotel's website.

1.10.5 Identifying External Entities:

1.10.5.1 Over Specified External Entities

Our project may have the following external entities:

- Customer
- Receptionist
- Manager
- Waiters
- Laundry boys
- Room
- Stock

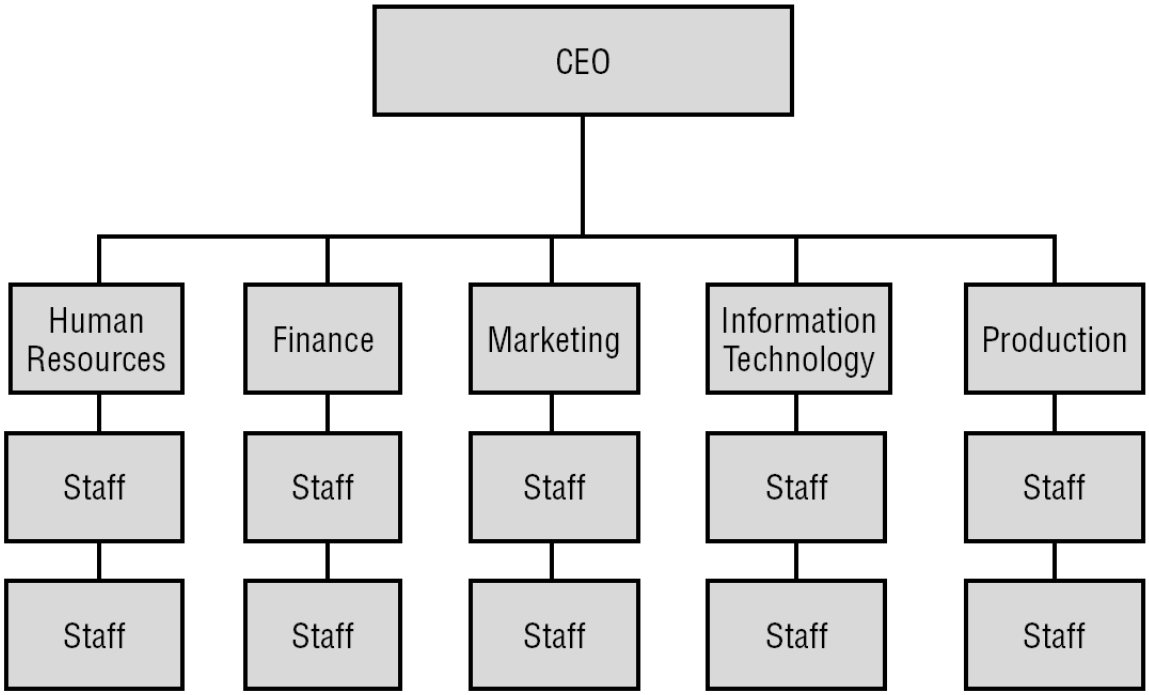
- Bill
- Food Items

1.10.5.2 External Entities (after Refinement)

- Customer
- Administrator
- Hotel Staff

1.10.6 Context Level Data Flow Diagram

1.10.7 Organization Chart



1.10.8 Capture "shall" Statements

Para #	External Entity	Initial Requirements
1.0	Customer	A customer “shall” interact with the system for getting info.
1.0	System	A system “shall” provide all necessary information
1.0	Customer	Customer "shall" register

1.0	System	A system "shall" provide the bar code of registered user
1.0	Customer	A Customer "shall" login
1.0	Customer	A customer “shall” place order for food
1.0	Kitchen Manager	The kitchen manager "shall" check the availability of food and confirm it
1.0	Customer	A Customer can make any alteration in his food order
1.0	Kitchen Manager	Kitchen Manager “shall” accept or reject the request depend upon the availability
1.0	Customer	Customers “shall” make payment
	Customer	Customers “shall” view the status of their orders by providing the Order Number
2.0	System	System “shall” implement the security
2.0	Customer	Customer “shall” book cab in order for travelling
3.0	Customer	Customer “shall” order for laundry
3.0	Customer	Customer “shall” check out
3.0	Manager	Manager “shall” change password
3.0	Manager	Manager “shall” record complain
3.0	Customer	Customer “shall” ask for home delivery
3.0	Kitchen Manager	Kitchen Manager “shall” ensure food stock availability
3.0	Customer	Customer “shall” reserve room
3.0	Receptionist	Receptionist “shall” book room in advance
3.0	Receptionist	Receptionist “shall” check room availability
3.0	Customer	Customer “shall” give feedback to receptionist
3.0	Receptionist	Receptionist “shall” take feedback from customer
3.0	Receptionist	Receptionist “shall” generate bill
3.0	Manager	Manager “shall” purchase stock
3.0	Customer	Customer “shall” book room in advance

1.10.9 Allocate Requirements

Allocate the requirements in the use cases.

Para #	**External Entity**	**Initial Requirements**	***Use Case Name***
1.0	Customer	A customer “shall” interact with the system for getting info.	UC_get_information
1.0	System	The system “shall” provide all necessary info to the customer	UC_Information_Response
1.0	Receptionist	Receptionist "shall" register Customer	UC_Registration
1.0	System	The system "shall" provide the registered Customer login ID	UC_Registration_Response

1.0	Customer	The Customer "shall" place the food order to system	UC_Place Order
1.0	Kitchen Manager	The kitchen manager "shall" check the availability and confirm it	UC_Check Status
1.0	Customer	A Customer can make any alteration in his order	UC_KitchenManager_Alteration
1.0	Kitchen Manager	KitchenManager “shall” accept or reject the request depend upon the availability	UC_Response
1.0	Customer	Customer “shall” make payment	UC_Payment
1.0	Customer	Customers “shall” view the status of their orders by providing the Order Number	UC_Check Status
1.0	System	System “shall” implement the security. Security “shall” maintain through implementing SSL/TLS	UC_Security
2.0	Customer	Customer “shall” book cab in order for travelling	UC_Book_cab
2.0	Customer	Customer “shall” order for laundry	UC_Order_for_Laundry.
2.0	Customer	Customer “shall” check out	UC_Check_Out
3.0	Manager	Manager “shall” change password	UC_change_password
3.0	Manager	Manager “shall” record complains	UC_Record_Complain
3.0	Customer	Customer “shall” ask for home delivery	UC_make_delievery
3.0	Kitchen Manager	System “shall” ensure food stock availability	UC_Delievery_availibility
3.0	Customer	Customer “shall” reserve room	UC_Reserve_Room.
3.0	Receptionist	Receptionist “shall” book room	UC_Book_Room
4.0	Receptionist	Receptionist “shall” check room availability	UC_check_Room_Available
4.0	Customer	Customer “shall” give feedback to receptionist	UC_give_FeedBack
4.0	Receptionist	Receptionist “shall” take feedback from customer	UC_take_feedback
4.0	Receptionist	Receptionist “shall” generate bill	UC_generate_Bill
4.0	Manager	Manager “shall” purchase stock	UC_Purchase_Stock
4.1	Customer	Customer “shall” book room in advance	UC_Book_Room_In_Advance

1.10.9 Prioritize Requirements

Requirements must be prioritized as this will help achieve tasks easily. Rank them as "highest, medium, and lowest".

Para #	Rank	Initial Requirements	Use Case ID	Use Case Name
1.0	Low	A customer "shall" interact with the system for getting info.	UC_1	UC_get_information
1.0	Highest	The system "shall" provide all necessary info to the customer.	UC_2	UC_Information_Response
1.0	Highest	Customer "shall" register	UC_3	UC_Registration_Requeste
1.0	Highest	The system "shall" provide the registered Customer a login ID(Bar Code)	UC_4	UC_Registration_Response

1.0	Low	The Customer "shall" place food order to system.	UC_5	UC_Place Order
1.0	Highest	The kitchen manager "shall" check the availability of order and confirm it	UC_6	UC_Check status
1.0	Medium	A Customer can make any alteration in his order.	UC_7	UC_Alteration
1.0	Low	Kitchen Manager “shall” accept or reject the request depend upon the availability	UC_8	UC_Response
1.0	Highest	Customer “shall” make payment; either through debit or through a credit card.	UC_9	UC_Payment
1.0	Medium	Customers “shall” view the status of their orders by providing the Order Number.	UC_10	UC_Check Status
1.0	Highest	System “shall” implement the security. Security “shall” maintain through implementing SSL/TLS	UC_11	UC_Security
1.0	Highest	Customer “shall” book cab for travelling purpose.	UC_12	UC_Book_Cab
1.0	Highest	Customer “shall” order for laundry	UC_13	UC_Order_for_Laundry.
1.0	Highest	Customer “shall” check out	UC_14	UC_Check_Out
1.0	Highest	Manager “shall” change password	UC_15	UC_change_password
1.0	Low	Manager “shall” record complains	UC_16	UC_Record_Complain
2.0	Medium	Customer “shall” ask for home delivery	UC_17	UC_make_delievery
2.0	Low	System “shall” ensure food stock availability	UC_18	UC_Delievery_availibility
2.0	Highest	Customer “shall” reserve room	UC_19	UC_Reserve_Room.
2.0	Highest	Receptionist “shall” book room	UC_20	UC_Book_Room
2.0	Medium	Receptionist “shall” check room availability	UC_21	UC_check_Room_Available
2.0	Medium	Customer “shall” give feedback to receptionist	UC_22	UC_give_FeedBack
2.0	Medium	Receptionist “shall” take feedback from customer	UC_23	UC_take_feedback

1.10.10 Requirements Trace-ability Matrix

The requirements trace-ability matrix is a table used to trace project life cycle activities and work products to the project requirements. The matrix establishes a thread that traces requirements from identification through implementation.

	Paragraph	Initial Requirements	BUILD	Use Case Name	Category
1	1.0	A customer “shall” interact with the system for getting info.	B1	UC_get_information	Business
2	1.0	The system “shall” provide all necessary info to the customer.	B1	UC_Information_Response	Business
3	1.0	Customer "shall" register	B1	UC_Registration_Requeste	Business
			B1	UC_Registration_Response	Business
5	1.0	The Customer "shall" place food order to system.	B1	UC_Place Order	Business
6	2.0	The kitchen manager "shall" check the availability of order and confirm it	B1	UC_Check status	Business
7	2.0	A Customer can make any alteration in his order.	B1	UC_Alteration	Business
8	Low	Kitchen Manager “shall” accept or reject the request depend upon the availability	B1	UC_Response	Business
9	Highest	Customer “shall” make payment; either through debit or through a credit card.	B1	UC_Payment	Business
10	Medium	Customers “shall” view the status of their orders by providing the Order Number.	B1	UC_Check Status	Business
12	Highest	Customer “shall” book cab in order for travelling.	B1	UC_Book_Cab	
13	Highest	Customer “shall” order for laundry	B1	UC_Order_for_Laundry.	
15	Lowest	Customer “shall” check out	B1	UC_Check_Out	
16	Lowest	Manager “shall” change password	B1	UC_change_password	
17	Lowest	Manager “shall” record complains	B1	UC_Record_Complain	

18	Highest	Customer “shall” ask for home delivery	B1	UC_make_delievery	
19	Highest	System “shall” ensure food stock availability	B1	UC_Delievery_availibility	
20	Highest	Customer “shall” reserve room	B1	UC_Reserve_Room.	
21	Highest	Receptionist “shall” book room	B1	UC_Book_Room	
22	Medium	Receptionist “shall” check room availability	B1	UC_check_Room_Available	
23	Highest	Customer “shall” give feedback to receptionist	B1	UC_give_FeedBack	
24	Medium	Receptionist “shall” take feedback from customer	B1	UC_take_feedback