PUCIT
Punjab University College of Information Technology

Group members:

Bilal Mubarak	**BSEF17M056**
Maham Mubashir	**BSEF17M008**
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Supervisor: Ma’am Madiha Khalid

Lahore Tour Guide
First Deliverable

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1 Introduction

1.1 Project/Product Feasibility Report

1.1.1 Technical Feasibility

Our project is technically very feasible because all the main technologies and tools that are associated with the project are freely available and the technical skills required are manageable. The software development team ascertained the technical feasibility of the project and concluded that the project can be undertaken with available technology and resources. Although implementation phase might require hardware additions (mac OS for iOS users) but currently the project is technically feasible and should proceed further.

1.1.2 Operational Feasibility

Our team will go to utilize a neighborly interface that will be adaptable to comprehend and simple to utilize. Smartphone, PC or a desktop computer and a good internet connection are required for its later use by the users. Application is free to use as a tour guide for Lahore City. But if users want to book a place they have to register and login first.

1.1.3 Economic Feasibility

The project is economically feasible as it requires a computer or smartphone (for a hybrid application) that is available to everyone nowadays. It is not too much expensive because we are using Django REST API which is a free and open source web application framework written in Python.

Acquisition costs (one time)

None

Maintenance and operation costs (ongoing)

Very little.

Benefit Estimates:

None

1.1.4 Schedule Feasibility

The total time to complete this project is approximately 6-7 months. We have divided the project timeline into different sprints. Tasks are divided and given to each member of the group, and they are accountable for completing the task before the given deadline. The scope has been designed so that it can be managed by the team. And since it has a great value in our degree, we are giving it first priority.

1.1.5 Specification Feasibility

Time will be feasible in term of specifications. These requirements are clearly defined. Following are the main requirements of the system:

- Friendly user interface that users find ease to use this application.
- Users can book a room in minutes by just tapping a button.

- Travelers/tourists can find all nearest places, find all the possible routes to the nearest destinations and get authentic navigations.
- To provide real time availability and guidance of points of interest of user.

1.1.6 Information Feasibility

We have much information about this project as the idea of this project went through the great research. The key focus given is to give user a friendly application for tour guide and booking. The speed and accuracy will be maintained in proper way. Using React Native, Python, Django REST and SQLite, the software can be developed in a neat and simple manner.

1.1.7 Motivational Feasibility

This venture has high motivational consequences for our group. The team is devoted and roused to investigate new skylines and get new abilities. The team is curious about this project and has enough skills to try to do this project. The team's motivation behind the event of project is to provide a good tour guidance.

1.1.8 Legal & Ethical Feasibility

This project will support legally and ethically all users. This system will not leak out any user credentials. We will protect the private information provided by the users.

1.2 Project/Product Scope

We are looking forward to build a cross platform android and iOS application along with a website platform allowing users of every type to access the platform easily. The application shall provide important details along with contact details for each and every significant place in Lahore. The app shall facilitate users by providing a user-friendly interface making user experience go beyond excellent. The app shall offer absolute navigation facility to every pinpoint. For this purpose, Google Maps shall be used in the system. Moreover, the system shall facilitate landlords by allowing them to post their residential adds that they want to rent. This shall increase revenue for landlords. On the other hand, the app shall permit travelers looking for a place to stay to contact the landlords and book apartments via PayPal. This shall remove the barriers of communication we get while traveling to new places and looking for a perfect residence suiting our budget and type.

1.3 Project/Product Costing

1.3.1 Project Cost Estimation by Function Point Analysis

External inputs

An elementary process processing data from outside the application boundary.

1. Registration screen
2. User registration data from API.
3. Login screen.
4. Getting current location of the user.

5. Getting advertisement posting data from user.
6. Getting reviews data from user.
7. Data validation from database (login and signup)
8. Getting list of areas of Lahore from database.
9. Conversation messages in database.

External outputs:

An elementary process sending data or control information outside the application boundary.

1. Registration data to database.
2. Login data to database.
3. Advertisement data to database.
4. Reviews data to database.
5. Show advertisements to users.
6. Show information of hotels and restaurants to users.
7. Show directions to users.
8. Conversation messages to database.
9. Location search by Google API from local db.

External Interfaces

Shared databases and routines from external applications

1. Google Map APIs
2. Google signup APIs

External Inquiries

An elementary process that sends data or control information outside the application boundary as interrupts and prompts (or event responders).

1. Area selection list for looking into a particular area and all the destinations within that area.
2. Dropdown list of the categorized destinations all over the city or at a particular area.
3. Directing a specific destination using Google Maps
4. Providing message option and opening chat tabs for conversations.
5. Locating data of hotels or restaurants upon user's choice.

Internal files

Relational data stored and maintained within the application boundary (relational databases, flat files/directories).

1. User table
2. Areas table
3. Conversation table
4. Advertisement table

No. of inputs:9
No. of outputs:9
No. of inquiries:5
No. of files:4
No. of external interfaces:2

Information domain value	Simple	Average	complex	count	FP count
No. of inputs:	3 x 3	5x4	1x6	9	35
No. of outputs:	5x4	2x5	2x7	9	44
No. of inquiries:	3x3	1x4	1x6	5	19
No. of files:	1x7	2x10	1x15	4	42
No. of external interfaces:	1x5	1x7	0x10	2	12

Count total=152

Data communication	4
Data distributed processing	0
Performance	5
Heavily used configuration	4
Transaction rate	3
Online data entry	2
End user efficiency	5
On-line update	4
Complex processing	3
Reusability	5
Installation ease	5
Operational ease	4
Multiple Sites	0
Facilitate Change	4
Total Fi	**48**

Calculate Function Point:

FP est.= Count Total * [0.65 + 0.01* (Fi)]

=152 * 1.13

=171.76 p-m

For our project:

Productivity=260 LOC/p-m

Labor Rate=Rs 50,000 per p-m

For 6 months=50,000 * 6

Total Labor Rate = Rs. 300,000 per person

Cost per FP= Cost/FP=Labor Rate/Productivity

=300,000/260

=Rs. 1,153.85 per p-m

=Rs. 1,154 per p-m

Total Project Cost= FP est. * (Cost/FP)

=171.76*1,154

=Rs. 198,211.04

=Rs. 198,211

Effort=Total cost/Labor rate per p-m

=198,211/50,000

=3.96 p-m

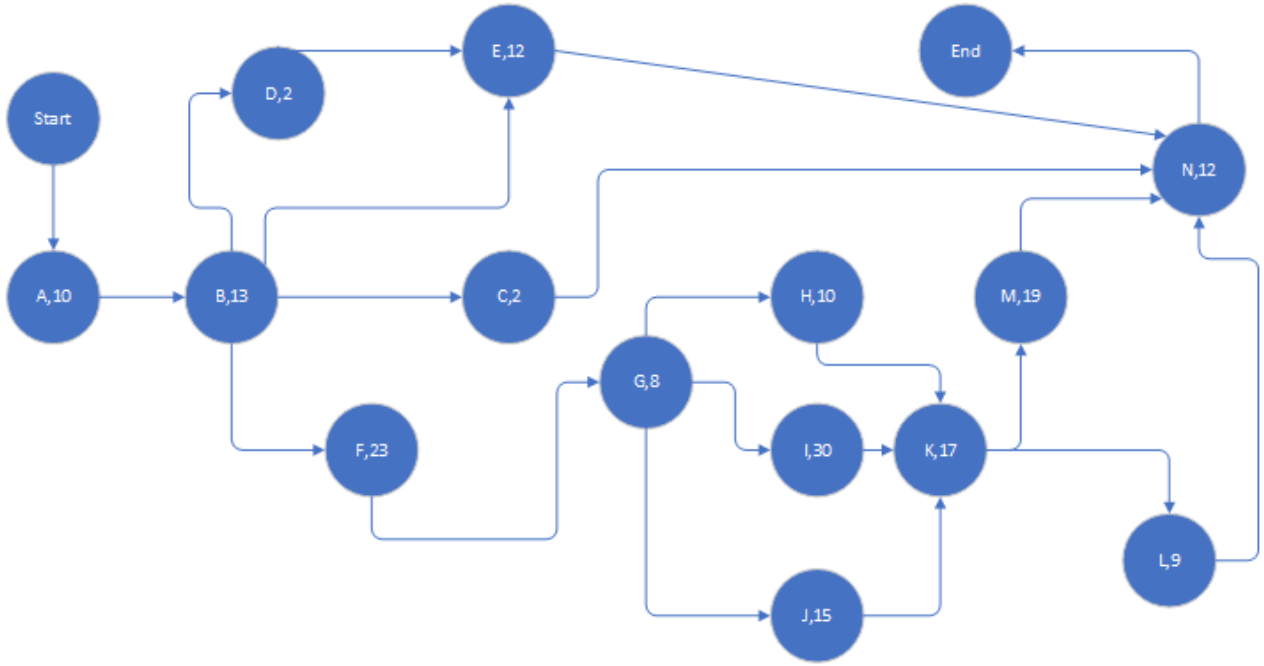
=4 p-m

1.4 CPM - Critical Path Method

Activity Sequence and Completion Time

Activity	Activity Name	Immediate predecessor	Duration(days)
A	Concept	None	10
B	Requirement Gathering	A	13
C	Cost Analysis	B	2
D	Context Level Modelling	B	2
E	Modelling	D, B	12
F	Explore Tools and Technologies	B	23
G	Design Mockups	F	8
H	Login/Signup Module	G	10
I	Destination Management Module	G	30
J	Stay management Module	G	15
K	Integration	H, I, J	17
L	Training	K	9
M	Documentation	K	19
N	Deployment	C, E, L, M	12

Network Diagram



Identify the Critical Path

Activity	Duration(days)	ES	EF	LS	LF	TS	FS
A	10	0	10	0	10	0	0
B	13	10	23	10	23	0	0
C	2	23	25	120	122	97	97
D	2	23	25	108	110	85	0
E	12	25	37	110	122	85	85
F	23	23	46	23	46	0	0
G	8	46	54	46	54	0	0
H	10	54	64	74	84	20	20
I	30	54	84	54	84	0	0
J	15	54	69	69	84	15	15
K	17	84	101	84	101	0	0
L	9	101	110	101	110	0	0
M	19	101	120	103	122	2	2
N	12	110	122	110	122	0	0

Critical Path:

A→B→F→G→I→K→L→N

1.5 Gantt chart

Software Development Plan

	Task Name	Duration	Start	Finish	Work	Resource Names
0	**Software Development Plan**	**136 days**	**Fri 09/25/20 08:00 AM**	**Mon 04/05/21 08:00 AM**	**2,896 hrs**	
1	**Concept**	**10 days**	**Fri 09/25/20 08:00 AM**	**Thu 10/08/20 05:00 PM**	**96 hrs**	
2	Determine objectives and goals	2 days	Fri 09/25/20 08:00 AM	Mon 09/28/20 05:00 PM	16 hrs	Anzala
3	Define success criteria	1 day	Tue 09/29/20 08:00 AM	Tue 09/29/20 05:00 PM	8 hrs	Bilal
4	Determine high level components	1 day	Wed 09/30/20 08:00 AM	Wed 09/30/20 05:00 PM	8 hrs	Maham
5	Application architecture	1 day	Thu 10/01/20 08:00 AM	Thu 10/01/20 05:00 PM	8 hrs	Mubarra
6	Determine tools and technologies	2 days	Fri 10/02/20 08:00 AM	Mon 10/05/20 05:00 PM	32 hrs	Bilal,Mubarra
7	Determine project feasibility	2 days	Tue 10/06/20 08:00 AM	Wed 10/07/20 05:00 PM	16 hrs	Maham
8	Determine project scope	1 day	Thu 10/08/20 08:00 AM	Thu 10/08/20 05:00 PM	8 hrs	Anzala
9	**Inception**	**39.5 days**	**Thu 10/08/20 08:00 AM**	**Wed 12/02/20 12:00 PM**	**288 hrs**	
10	Team gathering	1 day	Thu 10/08/20 08:00 AM	Thu 10/08/20 05:00 PM	8 hrs	Bilal
11	**Deliverable 1**	**17 days**	**Fri 10/09/20 08:00 AM**	**Mon 11/02/20 05:00 PM**	**176 hrs**	
12	Existing system analysis	1 day	Fri 10/09/20 08:00 AM	Fri 10/09/20 05:00 PM	8 hrs	Bilal
13	Draft preliminary software specificati	4 days	Mon 10/12/20 08:00 AM	Thu 10/15/20 05:00 PM	32 hrs	Maham
14	Identify External entities	1 day	Thu 10/15/20 08:00 AM	Thu 10/15/20 05:00 PM	8 hrs	Bilal
15	Context Level Data Flow Diagram	1 day	Fri 10/16/20 08:00 AM	Fri 10/16/20 05:00 PM	8 hrs	Anzala
16	Capture "shall" statements	3 days	Fri 10/16/20 08:00 AM	Tue 10/20/20 05:00 PM	24 hrs	Mubarra
17	Allocate requirements	3 days	Wed 10/21/20 08:00 AM	Fri 10/23/20 05:00 PM	24 hrs	Anzala
18	Prioritize requirements	2 days	Mon 10/26/20 08:00 AM	Tue 10/27/20 05:00 PM	16 hrs	Bilal
19	Requirements Trace-ability matrix	1 day	Tue 10/27/20 08:00 AM	Tue 10/27/20 05:00 PM	8 hrs	Anzala
20	Project costing (Function point analys	2 days	Wed 10/28/20 08:00 AM	Thu 10/29/20 05:00 PM	16 hrs	Bilal
21	Critical Path Method	2 days	Wed 10/28/20 08:00 AM	Thu 10/29/20 05:00 PM	16 hrs	Mubarra
22	Review software	5 hrs	Fri 10/30/20 08:00 AM	Fri 10/30/20 02:00 PM	0 hrs	
23	Incorporate feedback on software	1 day	Mon 11/02/20 08:00 AM	Mon 11/02/20 05:00 PM	8 hrs	Mubarra
24	Determine Risk List	1 day	Tue 10/27/20 08:00 AM	Tue 10/27/20 05:00 PM	8 hrs	Anzala
25	Obtain approvals to proceed	4 hrs	Fri 10/30/20 08:00 AM	Fri 10/30/20 12:00 PM	0 hrs	
26	**Deliverable 2**	**12 days**	**Fri 11/13/20 08:00 AM**	**Mon 11/30/20 05:00 PM**	**104 hrs**	
27	Use case description	2 days	Fri 11/13/20 08:00 AM	Mon 11/16/20 05:00 PM	16 hrs	Mubarra
28	Use case diagram	1 day	Tue 11/17/20 08:00 AM	Tue 11/17/20 05:00 PM	8 hrs	Bilal
29	Design Domain Model	2 days	Wed 11/18/20 08:00 AM	Thu 11/19/20 05:00 PM	16 hrs	Anzala
30	Design Sequence Diagram	1 day	Fri 11/20/20 08:00 AM	Fri 11/20/20 05:00 PM	8 hrs	Maham
31	Design Collaboration Diagram	2 days	Mon 11/23/20 08:00 AM	Tue 11/24/20 05:00 PM	16 hrs	Mubarra
32	Define Operation contracts	1 day	Wed 11/25/20 08:00 AM	Wed 11/25/20 05:00 PM	8 hrs	Anzala
33	Design Class Diagram	2 days	Thu 11/26/20 08:00 AM	Fri 11/27/20 05:00 PM	16 hrs	Maham
34	Design Data Model	2 days	Fri 11/27/20 08:00 AM	Mon 11/30/20 05:00 PM	16 hrs	Bilal
35	Obtain approvals to proceed	4 hrs	Wed 12/02/20 08:00 AM	Wed 12/02/20 12:00 PM	0 hrs	
36	**Iterations**	**67 days**	**Mon 11/02/20 08:00 AM**	**Tue 02/02/21 05:00 PM**	**2,024 hrs**	
37	**Sprint 1 (Exploring Tools and Technolog**	**23 days**	**Mon 11/02/20 08:00 AM**	**Wed 12/02/20 05:00 PM**	**736 hrs**	
38	Learn front End Technologies	1 wk	Mon 11/02/20 08:00 AM	Fri 11/06/20 05:00 PM	160 hrs	Anzala,Bilal,Maham,Mut
39	Learn app development	1 wk	Mon 11/09/20 08:00 AM	Fri 11/13/20 05:00 PM	160 hrs	Anzala,Bilal,Maham,Mut
40	Learn python	1 wk	Mon 11/16/20 08:00 AM	Fri 11/20/20 05:00 PM	160 hrs	Anzala,Bilal,Maham,Mut
41	Learn Django Rest API framework	1 wk	Mon 11/23/20 08:00 AM	Fri 11/27/20 05:00 PM	160 hrs	Anzala,Bilal,Maham,Mut
42	Build a pilot App	3 days	Mon 11/30/20 08:00 AM	Wed 12/02/20 05:00 PM	96 hrs	Anzala,Bilal,Maham,Mut
43	**Sprint 2 (Designing mockups)**	**8 days**	**Thu 12/03/20 08:00 AM**	**Mon 12/14/20 05:00 PM**	**104 hrs**	
44	Review Deliverables	1 day	Thu 12/03/20 08:00 AM	Thu 12/03/20 05:00 PM	32 hrs	Anzala,Bilal,Maham,Mut
45	Design screen mockups	4 days	Fri 12/04/20 08:00 AM	Wed 12/09/20 05:00 PM	32 hrs	Mubarra
46	Review screen mockups	1 day	Thu 12/10/20 08:00 AM	Thu 12/10/20 05:00 PM	24 hrs	Anzala,Bilal,Maham
47	Incorporate feedback in design	2 days	Fri 12/11/20 08:00 AM	Mon 12/14/20 05:00 PM	16 hrs	Mubarra
48	Obtain Approval to proceed	1 day	Tue 12/15/20 08:00 AM	Tue 12/15/20 05:00 PM	0 hrs	
49	**Sprint 3 (Login/SignUp Module)**	**10 days**	**Wed 12/16/20 08:00 AM**	**Tue 12/29/20 05:00 PM**	**160 hrs**	
50	Review screen mockup	1 day	Wed 12/16/20 08:00 AM	Wed 12/16/20 05:00 PM	16 hrs	Anzala,Bilal
51	Develop front end	3 days	Thu 12/17/20 08:00 AM	Mon 12/21/20 05:00 PM	48 hrs	Anzala,Bilal
52	Develop backend	3 days	Tue 12/22/20 08:00 AM	Thu 12/24/20 05:00 PM	48 hrs	Anzala,Bilal
53	Scrum Testing	3 days	Fri 12/25/20 08:00 AM	Tue 12/29/20 05:00 PM	48 hrs	Anzala,Bilal
54	**Sprint 4 (Destination management mo**	**30 days**	**Wed 12/16/20 08:00 AM**	**Tue 01/26/21 05:00 PM**	**240 hrs**	
55	Review screens mockups	1 day	Wed 12/16/20 08:00 AM	Wed 12/16/20 05:00 PM	16 hrs	Maham,Mubarra
56	Develop front end	1 wk	Wed 01/20/21 08:00 AM	Tue 01/26/21 05:00 PM	80 hrs	Maham,Mubarra
57	Develop backend	1 wk	Thu 12/24/20 08:00 AM	Wed 12/30/20 05:00 PM	80 hrs	Maham,Mubarra
58	Scrum Testing	4 days	Thu 12/31/20 08:00 AM	Tue 01/05/21 05:00 PM	64 hrs	Maham,Mubarra
59	**Sprint 5 (Stay management module)**	**15 days**	**Wed 12/30/20 08:00 AM**	**Tue 01/19/21 05:00 PM**	**240 hrs**	
60	Review screen mockup	1 day	Wed 12/30/20 08:00 AM	Wed 12/30/20 05:00 PM	16 hrs	Anzala,Bilal
61	Develop front end	1 wk	Thu 12/31/20 08:00 AM	Wed 01/06/21 05:00 PM	80 hrs	Anzala,Bilal
62	Develop backend	1 wk	Thu 01/07/21 08:00 AM	Wed 01/13/21 05:00 PM	80 hrs	Anzala,Bilal
63	Scrum Testing	4 days	Thu 01/14/21 08:00 AM	Tue 01/19/21 05:00 PM	64 hrs	Anzala,Bilal
64	**Sprint 6 (Integration)**	**17 days**	**Mon 01/11/21 08:00 AM**	**Tue 02/02/21 05:00 PM**	**544 hrs**	
65	Integrate modules	9 days	Mon 01/11/21 08:00 AM	Thu 01/21/21 05:00 PM	288 hrs	Anzala,Bilal,Maham,Mut
66	Test integration	2 days	Fri 01/22/21 08:00 AM	Mon 01/25/21 05:00 PM	64 hrs	Anzala,Bilal,Maham,Mut
67	Incorporate modifications in code	1 wk	Tue 01/26/21 08:00 AM	Mon 02/01/21 05:00 PM	160 hrs	Anzala,Bilal,Maham,Mut
68	Re-test code	1 day	Tue 02/02/21 08:00 AM	Tue 02/02/21 05:00 PM	32 hrs	Anzala,Bilal,Maham,Mut
69	Obtain Approval to proceed	1 day	Wed 02/03/21 08:00 AM	Wed 02/03/21 05:00 PM	0 hrs	
70	**Release**	**33.5 days**	**Thu 02/04/21 08:00 AM**	**Tue 03/23/21 12:00 PM**	**408 hrs**	
71	**Training**	**9 days**	**Thu 02/04/21 08:00 AM**	**Tue 02/16/21 05:00 PM**	**96 hrs**	
72	Develop training specifications	3 days	Thu 02/04/21 08:00 AM	Mon 02/08/21 05:00 PM	48 hrs	Maham,Mubarra
73	Identify training delivery	1 day	Tue 02/09/21 08:00 AM	Tue 02/09/21 05:00 PM	8 hrs	Maham
74	Develop training materials	1 wk	Wed 02/10/21 08:00 AM	Tue 02/16/21 05:00 PM	40 hrs	Mubarra
75	**Documentation**	**24 days**	**Wed 02/17/21 01:00 PM**	**Tue 03/23/21 12:00 PM**	**312 hrs**	
76	Develop user manuals	3 wks	Wed 02/17/21 01:00 PM	Wed 03/10/21 12:00 PM	240 hrs	Anzala,Bilal
77	Review all user documentation	2 days	Wed 03/10/21 01:00 PM	Fri 03/12/21 12:00 PM	16 hrs	Bilal
78	Incorporate user documentation feec	2 days	Fri 03/12/21 01:00 PM	Tue 03/16/21 12:00 PM	16 hrs	Anzala
79	Develop final report	5 days	Tue 03/16/21 01:00 PM	Tue 03/23/21 12:00 PM	40 hrs	Mubarra
80	**Production**	**11.5 days**	**Wed 03/17/21 08:00 AM**	**Thu 04/01/21 12:00 PM**	**80 hrs**	
81	**Pilot**	**11.5 days**	**Wed 03/17/21 08:00 AM**	**Thu 04/01/21 12:00 PM**	**72 hrs**	
82	Identify test group	1 day	Wed 03/17/21 08:00 AM	Wed 03/17/21 05:00 PM	16 hrs	Bilal,Maham
83	Install/deploy software	1 day	Tue 03/23/21 01:00 PM	Wed 03/24/21 12:00 PM	0 hrs	
84	Obtain user feedback	1 wk	Wed 03/24/21 01:00 PM	Wed 03/31/21 12:00 PM	40 hrs	Bilal
85	Evaluate testing information	1 day	Wed 03/31/21 01:00 PM	Thu 04/01/21 12:00 PM	16 hrs	Anzala,Mubarra
86	**Deployment**	**2 days**	**Tue 03/30/21 08:00 AM**	**Wed 03/31/21 05:00 PM**	**8 hrs**	
87	Develop deployment methodology	1 day	Tue 03/30/21 08:00 AM	Tue 03/30/21 05:00 PM	8 hrs	Mubarra
88	Deploy software	1 day	Wed 03/31/21 08:00 AM	Wed 03/31/21 05:00 PM	0 hrs	
89	**Retirement**	**0 days**	**Mon 04/05/21 08:00 AM**	**Mon 04/05/21 08:00 AM**	**0 hrs**	
90	Post implementation review complete	0 days	Mon 04/05/21 08:00 AM	Mon 04/05/21 08:00 AM	0 hrs	Anzala,Bilal,Maham,Mut

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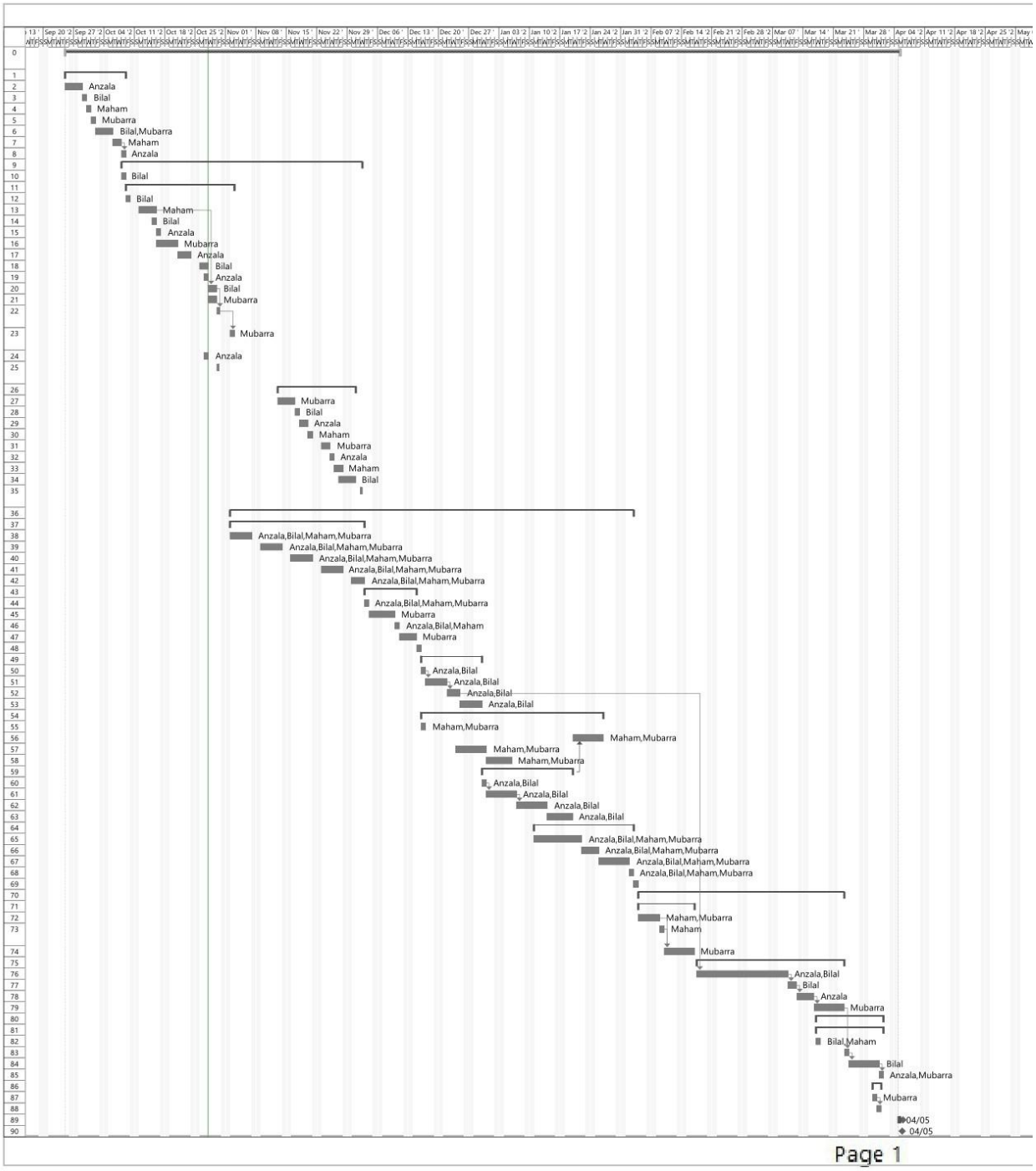


1.6 Introduction to Team member and their skill set

Team member are listed below:

1.6.1 Bilal Mubarak (Team Leader)

His technical skills related to this project include

- C#, JAVA, PYTHON, C++, React Native
- MVC, Django REST API framework
- Web Scraping and backend development

Apart from this he has leadership skills and have already led many term projects. He will be working on development, requirement engineering, testing and designing, managing the project at his best

1.6.2 Maham Mubashir (Team Member)

Her technical skills related to this project include

- C++, Java, PYTHON, C#, PHP, React Native.
- Django REST API framework, MVC, web development
- Requirement engineering

She has good analytic skills. She will be working on development, requirement engineering and designing. she has convincing powers. She will be working on development part.

1.6.3 Anzala Mohsan (Team Member)

Her technical skills related to this project include

- Java, PYTHON, C#, PHP, Angular JS, React Native
- MVC, Django REST API framework
- Analysis and Requirement Engineering

She has good analytic and testing skills. She will be working on development, requirement engineering, testing and designing.

1.6.4 Mubarra Naz (Team Member)

Her technical skills related to this project include

- C/C++, Java, C#, PYTHON, PHP, React Native
- Django REST API framework, Android Development
- Graphic Designing

She has good designing skills. She will make sure that user will have good experience using this Application. She will be working on design and development part.

1.7 Tools and Technology with reasoning

Tools and Technologies	Reasoning
MS word	For documentation, Microsoft Word is a very efficient and reliable word processor. We'll be using this tool for our documentation purposes.
MS Visio	We will be using these for creating UML and other application diagrams.
MS Project	For Gantt Chart. It's the best tool being used in the industry for project management plans and for work breakdown structure (WBS) for our project deliverables.
React Native	For front End development. It is an open-source, cross platform framework. The core is JavaScript and is easy to learn and use.
Python	Python is a dynamic, high level, free open source and interpreted programming language. It's already well recognized as a very universal, versatile, stable, and easy to learn programming language. We are using python to make our web based application secure and also for rapid development.
Django **REST framework**	Django is a framework provided by Python. It is a free and open source and also encourages rapid development. We use Django in our project as it follows MTV (Model, Template, View) design pattern, so we can split our code into different modules. We also use Django to build our application backend part.
Pycharm	Pycharm is an IDE for python programming. We are using it because it helps us to edit and improve code without putting extra time and effort. It also provides built in database facility so we don't need to install any other database server.
SQL Lite	Database. It requires no maintenance or configuration. It is cross-platform, high on performance, reverse compatible, lightweight and portable. And to fulfill our need of storing, processing and securing our database we will be using SQLite for our project. It provides a complete control and fast transaction of data on demand
Agile Development	Discovering requirements and developing solutions with collaborative effort of self-organizing, early and predictable delivery and transparency. SCRUM is used which is an agile framework for sustaining the product.It will help in team work together

1.8 Vision Document

1.8.1 Introduction

The application is made to create a network, connecting paying guests with landlords enhancing affective communication. In order to develop a website and a mobile application where users can book a room in minutes by just tapping a button. We will provide a platform where travelers/tourists can find all nearest places, find all the possible routes to the nearest destinations and get authentic navigations. And to promote tourism by making tourism concise and easier to access.

1.8.2 Existing System Business Organization

Currently there are no applications that have been built on "Lahore Tour Guide" idea. However, there is another app which is used as tour guide and separate hotels website for room allocation and no such application exist for paying guest. But this app will combine all three works for user. This is the uniqueness of our application. We will also provide users with the facility to add advertisement of their place at this platform.

1.8.3 Project Overview

Our aim is to create a user-friendly application for guiding the tourists and paying guests to learn best about the Lahore city. Our application will define, describe and direct the users to specific locations. For this purpose, we are going to integrate google maps in our application. Moreover, our system will allow the renters to quickly contact landlords. The renters can select a certain area and see the list of rooms available, public reviews and feedbacks and then book a room easily via online payment or on-site payment. By default, the app will locate the current location of the user and show the nearby areas and points of interest. These locations will be divided in several categories to help user make custom search easier.
The users can change the location and find the areas and places anywhere in the city.
On the other hand, landlords can have their profiles and post advertisements for the availability of the rooms and apartments. The renters can either book rooms in hotels or can find a room to stay as paying guest.

1.8.4 Scope of the System

The scope of the project can be divided into following phases:

1.8.4.1 Concept

Defining project goal and objectives along with the success criteria of the project. Gathering high level components and application architecture in order to estimate the extent of the system and the target audience.

1.8.4.2 Inception

The phase includes planning and requirement gathering. Moreover, it includes modelling the requirements to get accurate picture of the working system.
The scope of this document is limited to first half of this phase.

1.8.4.3 Iterations

This is the development phase of the system. At the end of each sprint, we get a working module as an output and integrating them all together in the last sprint to get a complete and correct working system.
The phase results in following working business areas

- Account maintenance
- Location guidance
- Location detailing
- Easier contact access
- Conversation facility with landlords.

1.8.4.4 Release

Phase II involves complete automation of the application. The phase involves the final documenting procedures for training the staff on how to manage and use the software along with the development of user manuals.

1.8.4.3 Production

Phase III covers a complete solution for "Lahore Tour Guide". The phase includes pilot and deployment procedures. The application is made open to the end users publicly.

1.8.5 Summary of Requirements:(Initial Requirements)

The purposed system must fulfill following requirements as follow:

1.8.5.1 GPRS Connectivity

GPS connection is necessary for navigation and location finding.

1.8.5.2 User Registration and Authentication

For advertisements and reviews user authentication is necessary.

1.8.5.3 Categorizing destinations

Destinations shall be categorized so that users can easily access similar locations at once

1.8.5.4 Destination Guidance

Everything that a user needs to know about a location should be all together. So that user does not have to search here and there for details.
Moreover, the ser should get complete navigation guidance for the destination.

1.8.5.5 Review addition/update

User should be able to add their reviews to not only amusement locations but also to the adds posted. So, others can get a public opinion regarding destinations.

1.8.5.6 Add posting

Users should be allowed to post adds for their rental apartments. They should be able to add details and pictures of place.

1.8.5.7 Add maintenance

The user doesn't have to post the adds for the same room again and again. He can just manage the availability for the room and the add will go public again.

1.8.5.7 Chat with Landlords

People looking for rental apartments or rooms shall be allowed to have chat with landlords regarding their stay and apartment.

1.8.6 Identifying External Entities or Actors

1.8.6.1 Over Specify Entities from Abstract

On the basis of the Abstract, one might identify the following entities from the Lahore Tour Guide case study.

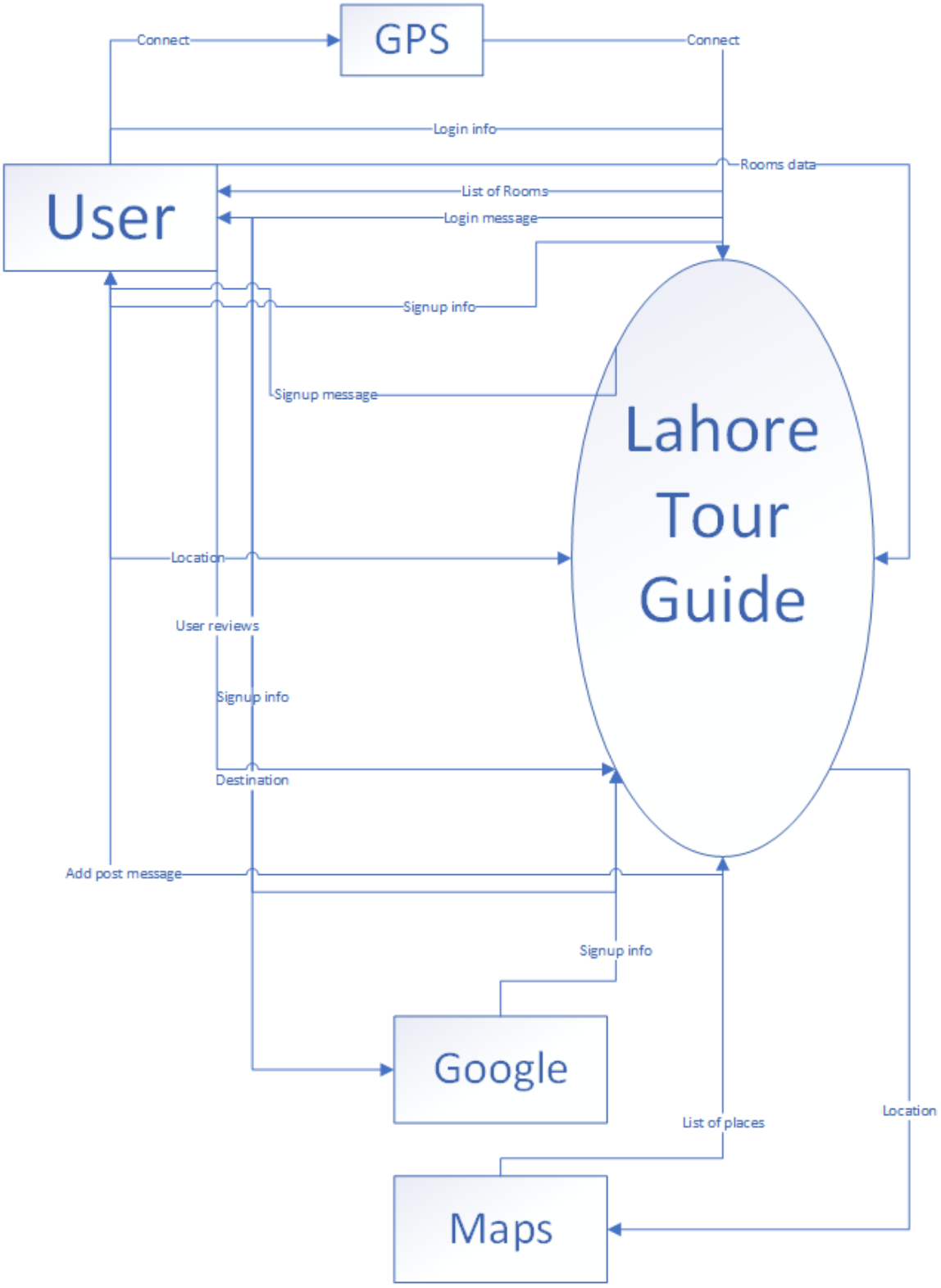
- Toursit/traveler
- Buyer
- Seller
- Notification
- Advertisement
- Post
- Review
- Account
- Credit Card
- Google maps
- Signup APIs
- Login APIs
- Google maps APIs

1.8.6.2 Perform Refinement

We found the following entities more related to our Business Logic;

- Traveler
- Owner of the rooms
- Signup and Login APIs
- Google maps APIs
- Google maps

1.8.7 Context Level Data Flow Diagram



1.8.8 Capture "shall" Statements and the external entities (Actors)

Identify “shall” statements, as they would be all functional requirements.

No	Entities	Initial Requirements
1	User	Shall download app from store
2	User	Shall create account for app
	User	The user “shall” sign in to the application.
3	User	Shall allow their location to be accessed
4	User	Shall choose an option (destinations, nearby, hotels and restaurants, rental apartments)
5	User	Shall choose destinations option
6	User	Shall choose categories from the list
7	User	Shall select the location from the list
8	System	Shall provide details and directions of the selected location
9	User	Shall select restaurant or hotel option
10	System	Shall provide details or directions of restaurant and hotel
11	User	Shall select rental apartment option
12	System	Shall provide list of available rental rooms
13	User	Shall select a room or apartment from the list
14	System	Shall provide details or directions of room or apartment
15	User	Shall request to post an add for room or apartment
16	User	Shall provide information about the add
17	System	Shall add the details to the database
18	User	Shall start a conversation with the owner of the room or apartment
19	User	Shall add reviews for the room or apartment

1.8.9 Allocate Requirements

No	Initial Requirements	Use Case Name
1	User Shall create account for app	UC_Register
2	User Shall login to account	UC_Login
3	User Shall connect GPRS	UC_Connectivity
4	User Shall choose destination	UC_ Search_Place
5	User Shall see details and contact	UC_Details
6	System shall provide location directions	UC_Get_Directions
7	User Shall upload/update/delete reviews	UC_Review_Activity
8	User shall select rental room option/ landlords can add their advertisement	UC_Rental_Ads
9	User shall chat with landlords	UC_Conversation
10	Landlord should manage their advertisement	UC_Ads_Management
11	System Shall communicate with central database to authenticate and manage data	UC_System_Communication
12	System Shall delete advertisements on basis of reviews	UC_System_Control

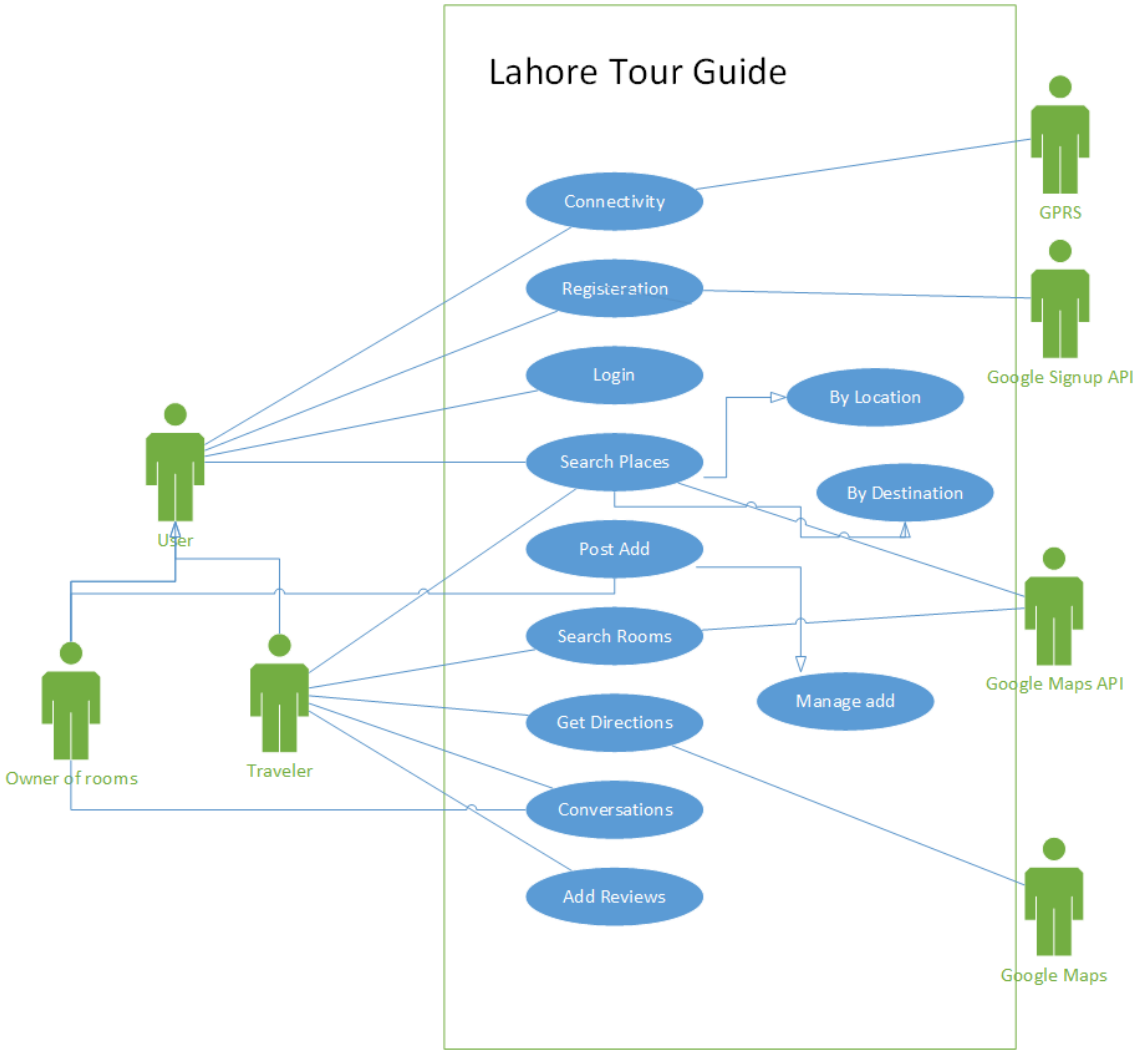
1.8.10 Priorities Requirements

No	Rank	Initial Requirements	Use Case Id	Use Case Name
1	High	User Shall create account for app	UC_1	UC_Register
2	High	User shall login to account	UC_2	UC_Login
3	medium	User Shall choose destination	UC_4	UC_Search Place
4	Low	User Shall add/delete reviews	UC_7	UC_Review_Activity
5	High	User Shall connect with internet/GPRS	UC_3	UC_Connectivity
6	medium	Landlord shall manage ads	UC_10	UC_Ads_Management
7	medium	Landlord Shall upload/update/delete its advertisement	UC_8	UC_Rental_Ads
8	High	System shall provide location directions	UC_6	UC_Get_Directions
9	medium	User shall see details	UC_5	UC_ Details
10	Low	System Shall provide chat option	UC_9	UC_Conversations
11	medium	System Shall communicate with central database to authenticate and manage data	UC_11	UC_System_Communication
12	Low	System Shall delete advertisements automatically on basis of reviews	UC_12	UC_System_Control

1.8.12 Requirements Traceability Matrix

No	Build	Initial Requirements	Category	Use Case Name
1	B1	User Shall create account for app	Functional	UC_Register
2	B1	User Shall login account for app	Functional	UC_Login
3	B1	User Shall connect with internet/GPRS	Functional	UC_Connectivity
4	B1	System shall provide location directions	Functional	UC_Get_Directions
5	B2	User Shall choose destination	Functional	UC_Search_Place
6	B2	Landlord Shall upload/ delete its advertisement	Business	UC_Rental_Ads
7	B2	Landlord shall manage ads	Business	UC_Manage_Ads
8	B2	User shall see details	Functional	UC_Details
9	B2	System Shall communicate with central database to authenticate and manage data	Functional	UC_ System_Communication
10	B3	User Shall add/delete reviews	Business	UC_Review_Activity
11	B3	System Shall provide chat option	Functional	UC_Converstaions
12	B3	System Shall delete advertisements automatically on basis of reviews	Business	UC_System_Control
13	B3	System Shall notify the user to activate his GPRS for the starting of app	Functional	UC_System_Notification

1.9 High Level Usecase Diagram



1.9 Risk List

Following are the risks in the development of the proposed application.

1.9.1 Risk related to the Requirement Engineering

- The rate of change of requirement is unpredictable.
- The change in requirements changes the scope of the application.

1.9.2 Risk related to the Scope Management

- The scope of the project is not clearly understood by any of the project management office, supervisory staff or developing team.
- The scope of the project is scattered due to the dropped requirements or the requirement change.

- The scope of the product mention in the proposal is not attainable in normal circumstances.

1.9.3 Risk related to the team

- Supervisory staff is either not available or is unable to render the facility on any basis.
- The scope of the project moves out from the specialization of the supervisor.
- The resource person in the team is not available due to any reason.
- Lack of team Management Corporation can be a high risk.

1.9.4 Risk related to the System

- Estimated size may varies from actual size.
- Security risk.
- Tools & requirements are incompatible.
- Development tools do not provide planned productivity.

1.9.5 Risk related to the Estimation

- The time required to develop the software is underestimated.
- Cost estimated is low.