|  |  |
| --- | --- |
| Project Description | It is asystem that builds on two things ,the first is application that determines the nearest plase to park your car ,the second is the buiding in which you will be parked and also allow drivers to book for a parking slot before reaching the parking area. area. The reservation will be for a certain period of time of which if the driver does not reach the parking area, their reservation will be expired |
| The problem | Crowded streets, the vandalism and takes the larges space possible. |
| The solution | (park the car) is an application that controls the parking of car in the place you are going to |

* budget allocated for **Software part**: 250.000 L.E
* cost of building is : 5.200.000 L E

High System maintenase costs

Customer will not accept the software as delivered even though it meets all specification

Loss of key personnel

Server crashes

* **Project resources**
* Staff : Two mechanical engineers and two electrical engineers and workers to construct the building
* Hardware : 5 laptops , 2 server
* Equipment :chassis ,powerful motor ,elevator some equipment that will be used for the building s electricity
* **Business case**
* **This system will be used by the university, mall and any parking area around. The main purpose of this project is to develop a system that will ease the parking process around malls The system will help control the parking slot availability and also allow drivers to book for a parking slot before reaching the parking area. The reservation will be for a certain period of time of which if the driver does not reach the parking area, their reservation will be expired. The android application will help people book and see available parking slots. While the website, which can be accessed anywhere around will be used to see the available slot and also renew the reservation when they are expired.**

**Deliverables :**

1-**Aprototype of the application that is used to reserve a place For you in the building to park your car**

**2-aprototype of the building system that we will receive from electrical and mechanical engineers**

**3- Create android application to be in user phones in order to book the car,s place. and for Financial transactions in with users**

**4- A web application to be in order to book the car,s place. and for Financial transactions in with users .**

Scope of project

|  |  |
| --- | --- |
| Objectives | The aim of the project is to create  A prototype of a parking ,android  Application and a web application  Know as smart parking system . |
| Deliverables | 1-Create a suitable building for parking car  2-System application for building to move the cars  3-Create application to be in user phones in order to book the car,s place.  4 system application for Financial transactions  in with users |
| Milestones | **that is used to reserve a place For you in the building to park your car will start in 1 /1/2022**  **And will end in after 3 month**  **2-aprototype of the building system that we will receive from electrical and mechanical engineers will start in 1 /1/2022**  **And will end in after 2 month**  **3- Create android application to be in user phones in order to book the car,s place. and for Financial transactions will start in 1 /1/2022**  **And will end in after 2 month**  **4- A web application to be in order to book the car,s place. and for Financial transactions in with users . will start in 1 /1/2022**  **And will end in after 2month** |
| Technical requirements | -An application be written in java.  -the building made in iron , steel and elevator to up the car  - it will be used in android and Ios |
| Limits | In real work the work start at 8 am  And end 4 pm  -In the maintenance work the start at 8 pm and will end 5 am |
| Out of the scope | -It is not found everywhere, only in malls and universities  -It does not work throughout the day, only the specified working hours for maintenance times |

WBS:

First level: App for building :

1-Design Hardware

2-software for building

Second level: **Aprototype of the building system**

1-Feasibility study **building**

2-Planning **building**

3-Design **building**

Third level: . **android application**

1 -front end for **android** app

2 -Back end for **android** app

Fourth level: **- A web application**

1 -front end for **A web** app

2 -Back end for A web app

|  |  |  |  |
| --- | --- | --- | --- |
| Parking cars project | | | |
| Activity | Description | Preceding Activity | Activity Time (Weeks) |
| A | Define Requirements | None | 2 |
| B | Feasibility study **building** | A | 2 |
| C | front end for **android** app | A | 3 |
| D | Back end for **android** app | A | 4 |
| E | Design Hardware | A | 3 |
| F | Planning **building** | B | 4 |
| G | front end for **android** app | C | 4 |
| H | Back end for A web app | D | 4 |
| K | software for building | E | 3 |
| L | Design **building** | F | 2 |
| M | Test of project  And reviwe | G,H,K,L | 2 |

|  |  |  |
| --- | --- | --- |
| 2 | B | 4 |
| 0 | Feasibility study **building** | |
| 2 | 2 | 4 |

|  |  |  |
| --- | --- | --- |
| 4 | F | 8 |
| 0 | Planning **building** | |
| 4 | 4 | 8 |

|  |  |  |
| --- | --- | --- |
| 8 | L | 10 |
| 0 | Design **building** | |
| 8 | 2 | 10 |

|  |  |  |
| --- | --- | --- |
| 2 | D | 6 |
| 0 | Back end for **android** app | |
| 2 | 4 | 6 |

|  |  |  |
| --- | --- | --- |
| 5 | G | 9 |
| 1 | front end for **android** app | |
| 6 | 4 | 10 |

|  |  |  |
| --- | --- | --- |
| 2 | C | 5 |
| 1 | front end for **android** app | |
| 3 | 3 | 6 |

|  |  |  |
| --- | --- | --- |
| 0 | A | 2 |
| 0 | Define Requirements | |
| 0 | 2 | 2 |

|  |  |  |
| --- | --- | --- |
| 6 | H | 10 |
| 1 | Back end for A web app | |
| 6 | 4 | 10 |

|  |  |  |
| --- | --- | --- |
| 10 | M | 12 |
| 0 | Test of project  And reviwe | |
| 10 | 2 | 12 |

|  |  |  |
| --- | --- | --- |
| 2 | E | 5 |
| 2 | Design Hardware | |
| 4 | 3 | 7 |

|  |  |  |
| --- | --- | --- |
| 5 | K | 8 |
| 2 | software for building | |
| 7 | 3 | 10 |

Resource Constrained project

0 1 2 3 4 5 6 7 8 9 10 11 12

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | RES | DUR | ES | LF | SL | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| A | 2 | 2 | 0 | 2 | 0 | 2 | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| B | 2 | 2 | 2 | 4 | 0 |  |  | 2 | 2 |  |  |  |  |  |  |  |  |  |  |
| C | 1 | 3 | 2 | 6 | 1 |  |  | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |
| D | 2 | 4 | 2 | 6 | 0 |  |  | 2 | 2 | 2 | 2 |  |  |  |  |  |  |  |  |
| E | 1 | 3 | 2 | 7 | 2 |  |  | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |
| F | 1 | 4 | 4 | 8 | 0 |  |  |  |  | 1 | 1 | 1 | 1 |  |  |  |  |  |  |
| G | 2 | 4 | 5 | 10 | 1 |  |  |  |  |  | 2 | 2 | 2 | 2 |  |  |  |  |  |
| H | 1 | 4 | 6 | 10 | 1 |  |  |  |  |  |  | 1 | 1 | 1 | 1 |  |  |  |  |
| K | 1 | 3 | 5 | 10 | 2 |  |  |  |  |  | 1 | 1 | 1 |  |  |  |  |  |  |
| L | 1 | 2 | 8 | 10 | 0 |  |  |  |  |  |  |  |  | 1 | 1 | ……… |  |  |  |
| M | 2 | 2 | 10 | 12 | 0 |  |  |  |  |  |  |  |  |  |  | 2 | 2 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Resources scheduled** | 2 | 2 | 6 | 6 | 5 | 6 | 5 | 5 | 4 | 2 | 2 | 2 |  |  |
| **Resources available** | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |

**Baseline Budget**

|  |  |
| --- | --- |
| ID | **Cost** |
| -Feasibility study **building** | 1000,0 |
| -Planning **building** | 1000,0 |
| -Design **building** | 5000,0 |
| -Design Hardware | 1000,000 |
| 2-software for building | 250,0000 |
| -front end for **android** app | 20,0000 |
| Back end for **android** app | 60,0000 |
| front end for **A web** app | 120,000 |
| Back end for A web app | 120,000 |
| Test of project And review | 4,000,0 |

Responsibility matrix

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Mina | May | Noga |
| -Feasibility study **building** | R | S |  |
| -Planning **building** | S | R |  |
| -Design **building** | S |  | S |
| -Design Hardware | S | R |  |
| software for building | R | S | R |
| -front end for **android** app | R |  | S |
| 2 -Back end for **android** app | R | R |  |
| front end for **A web** app | S |  | S |
| Back end for A web app | R |  | R |
| Test of project | R | S |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Activity\day | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| A | X | X |  |  |  |  |  |  |  |  |  |  |  |
| B |  |  | X | X |  |  |  |  |  |  |  |  |  |
| C |  |  | X | X | X |  |  |  |  |  |  |  |  |
| D |  |  | X | X | X | X |  |  |  |  |  |  |  |
| E |  |  | X | X | X |  |  |  |  |  |  |  |  |
| F |  |  |  |  | X | X | X | X |  |  |  |  |  |
| G |  |  |  |  |  | X | X | X | X |  |  |  |  |
| H |  |  |  |  | X | X | X | X |  |  |  |  |  |
| K |  |  |  |  |  | X | X | X |  |  |  |  |  |
| L |  |  |  |  |  |  |  |  | X | X |  |  |  |
| M |  |  |  |  |  |  |  |  |  |  | X | X |  |

Time phase budget

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **DUR** | **Tasks** | **Budget** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** |
| A | **2** | Define Requirements | 8 | 4 | 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| B | **2** | Feasibility study **building** | 5 |  |  | 2 | 1 | 2 |  |  |  |  |  |  |  |  |  |
| C | **3** | front end for **android** app | 6 |  |  | 3 |  |  |  | 3 |  |  |  |  |  |  |  |
| D | **4** | Back end for **android** app | 10 |  |  |  |  | 2 | 2 | 2 | 2 | 2 |  |  |  |  |  |
| E | **3** | Design Hardware | 5 |  |  | 2 | 1 | 2 |  |  |  |  |  |  |  |  |  |
| F | **4** | Planning **building** | 4 |  |  |  |  |  |  |  |  | 3 |  |  | 1 |  |  |
| G | **4** | front end for **android** app | 5 |  |  |  | 2 | 1 |  |  |  |  |  | 2 |  |  |  |
| H | **4** | Back end for A web app | 3 |  |  |  |  |  |  | 1 | 1 | 1 |  |  |  |  |  |
| K | **3** | software for building | 10 |  |  |  |  | 5 |  | 2 |  |  |  | 3 |  |  |  |
| L | **2** | Design **building** | 4 |  |  | 2 |  |  |  |  |  | 2 |  |  |  |  |  |
| M | **2** | Test of project  And reviwe | 10 |  |  | 3 |  |  | 3 |  | 3 |  |  | 1 |  |  |  |
| **Total** | **30** |  | 70 | 4 | 4 | 12 | 4 | 12 | 5 | 8 | 6 | 9 | 0 | 5 | 1 |  |  |
| **Commutative** | |  |  | 4 | 8 | 20 | 24 | 36 | 41 | 49 | 55 | 64 | 64 | 69 | 70 |  |  |

Risks

1- Loss of key personnel.

2- Lack of good electrical and mechanical engineers.

3- Not designing the building in the correct way.

4 - Creations that are created with the founders.

5-Maybe some problem in Design Hardware and software .