|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parking assistant** | | | | **Project name** |
| **Abd-Elaziz Elsayed Mohamed** | **Project manager** | **Orascom development** | | **Project sponsor** |
| **15th May 2021** | **Last revision date** | **15th Nov 2021** | | **Project approval date** |
| **To introduce a solution for the parking spaces problem by building a lot of parking both in multiple floors or underground ,creating an app that helps people find an empty parking spaces ,and pay attention to the streets and infrastructure of crowded cities.** | | | | **Project description** |
| **World is constantly increasing so finding a parking lot is no longer so easy.**  **We faced this problem by our project that will help drivers to find a parking easily and we will finish this project in one year.** | | | | **Business case** |
| **195 Workdays** | | | Time | **Costraints**  **(in priority time)** |
| **Architect, civil engineer, software engineer,and a guard.** | | | budget |
| **The software engineering team will create an app that helps drivers to get a parking easily.**  **The application will be available for both android and IOS systems. The drivers can easily use the application and it will give them recommendation for a free parking spaces.** | | | | **Project deliverables** |
| **building a lot of parking both in multiple floors or underground that will increase the parking spaces.**  **creating an app that helps people find an empty car park easily.**  **paying attention to the streets and infrastructure of crowded cities.** | | | | **Benefits**  **(measurable results)** |
| **Designing the building in the way to provide many parking spaces.** | | | Architect | **Project team members** |
| **Responsible for building according to the design specified by the architect.** | | | Civil engineer |
| **Responsible for creating the application.** | | | Software engineering team |
| **1- Problems with the geographical location.**  **2- Lack of drivers who have the ability to use the application.**  **3- Hacking the system by unethical hacker.**  **4- Sudden failure or fracture of any sensor.** | | | | **Risks** |

**-Project scope:**

**\* Parking assistant:**

-The project helps drivers to get an easy parking.

**\* Constraints:**

-The project should be available in one year of the project intiation.

-The cost is only 1.53 million dollars.

-We have just 3 teams for the project: Architect ,civil engineering team ,and software

engineering team.

**\* The Project in general:**

-The project provides an easy and safe parking for drivers by an application that is connected with a sensors in the building which detected the free parking spaces in the building.

- The drivers can deal with the application easily.

**\* Project exclusions:**

-The driver is not able to reserve a parking space.

- WBS:

**Parking assistant**

**Application**

**Building**

**System**

**- Designing the Building.**

**- Importing the IR sensors and security cams**

**From the IR factory.**

**- Drawing the parking spaces in each floor.**

**- Placing the IR sensors in specific places.**

**- Connecting the application with the building**

**- Launching the application to the public.**

**- Designing the application.**

**- Encoding the application.**

- Responsibility matrix:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tasks | Abdelaziz | Arwaa | Aysel | Rawan | Gaser | Ahmed | Omar | Oday | Rana | Selim |
| Project planning | R I | A | C | R I | C | C | A | C | C | A |
| Prepare techn,Documention | A I | C | R C | I | C |  |  |  |  |  |
| Meeting protocols | C | R | A | I | C |  |  |  |  |  |
| Design the building |  |  |  |  | C |  |  |  |  | R |
| Importing IR sensors and security cams. |  |  |  |  | C | R | A | I | I |  |
| Drawing Parking Spaces. |  |  |  |  | C |  |  |  | R |  |
| Placing the sensors in their places. |  |  |  |  | C |  |  |  | R |  |
| Designing the application. |  |  |  |  | C | R | A | I | I |  |
| Encoding the application. |  |  |  |  | C | R | A | I | I |  |
| Connecting the app with the Building. |  |  | C | A | C | R | A | I | I |  |
| Launching the app. |  |  | C | A | C | R | A | I | I |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 30 | **A** | 0 | |
| Project planning | | | 0 |
| 30 | 30 | **0** | |

- Project network:

|  |  |  |
| --- | --- | --- |
| 45 | **B** | 30 |
| Building design | | 0 |
| 45 | **15** | 30 |

|  |  |  |
| --- | --- | --- |
| 90 | **C** | 45 |
| Importing IR sensors and cams. | | 0 |
| 90 | 45 | 45 |

|  |  |  |
| --- | --- | --- |
| 75 | **F** | 45 |
| Designing the app | | 30 |
| 105 | 30 | 75 |

|  |  |  |
| --- | --- | --- |
| 105 | **D** | 90 |
| Drawing the parking spaces. | | 0 |
| 105 | 15 | 90 |

|  |
| --- |
|  |

|  |  |  |
| --- | --- | --- |
| 105 | **G** | 75 |
| Encoding the app | | 30 |
| 135 | 30 | 105 |

|  |  |  |
| --- | --- | --- |
| 135 | **E** | 105 |
| Placing IR sensors. | | 0 |
| 135 | 30 | 105 |

|  |  |  |
| --- | --- | --- |
| 180 | **H** | 135 |
| Connecting the Building with the app | | 0 |
| 180 | 45 | 135 |

|  |  |  |
| --- | --- | --- |
| 195 | **I** | 180 |
| Launching the app | | 0 |
| 195 | 15 | 180 |

- Critical path:

A, B, C, D, E, H, I

- Gantt chart:

ID

**A**

**B**

**C**

**D**

**E**

**F**

**G**

**H**

**I**

015 30 45 60 75 90 105 120 135 150 165 180 195 210

Days

- Resource-constrained schedule:

**0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 6.5**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  | **SL** | **DUR** | **LF** | **ES** | **RES** | **ID** |
|  |  |  |  |  |  |  |  |  |  |  | **10** | **10** | **0** | **30** | **30** | **0** | **10** | **A** |
|  |  |  |  |  |  |  |  |  |  | **2** |  |  | **0** | **15** | **45** | **30** | **2** | **B** |
|  |  |  |  |  |  |  | **5** | **5** | **5** |  |  |  | **0** | **45** | **90** | **45** | **5** | **C** |
|  |  |  |  |  |  | **2** |  |  |  |  |  |  | **0** | **15** | **105** | **90** | **2** | **D** |
|  |  |  |  | **2** | **2** |  |  |  |  |  |  |  | **0** | **30** | **135** | **105** | **2** | **E** |
|  |  |  |  |  |  |  |  | **5** | **5** |  |  |  | **30** | **30** | **105** | **45** | **5** | **F** |
|  |  |  |  |  |  | **5** | **5** |  |  |  |  |  | **30** | **30** | **135** | **75** | **5** | **G** |
|  | **7** | **7** | **7** |  |  |  |  |  |  |  |  |  | **0** | **45** | **180** | **135** | **7** | **H** |
| **7** |  |  |  |  |  |  |  |  |  |  |  |  | **0** | **15** | **195**  **Reference** | **180** | **7** | **I** |
| **7** | **7** | **7** | **7** | **2** | **2** | **7** | **10** | **10** | **10** | **2** | **10** | **10**  **Total resources** |
| **10** | **10** | **10** | **10** | **10** | **10** | **10** | **10** | **10** | **10** | **10** | **10** | **10** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  | **Budget** | **DUR** | **Activity** | **ID** |
|  |  |  |  |  |  |  |  |  |  |  | **200** | **200** | **400** | **30** | **Project plan** | **A** |
|  |  |  |  |  |  |  |  |  |  | **500** |  |  | **500** | **15** | **Building design** | **B** |
|  |  |  |  |  |  |  | **10** | **10** | **10** |  |  |  | **30** | **45** | **Importing resources** | **C** |
|  |  |  |  |  |  | **30** |  |  |  |  |  |  | **30** | **15** | **Drawing spaces** | **D** |
|  |  |  |  | **40** | **30** |  |  |  |  |  |  |  | **70** | **30** | **Placing resources** | **E** |
|  |  |  |  |  |  |  |  | **150** | **150** |  |  |  | **300** | **30** | **Application design** | **F** |
|  |  |  |  |  |  | **50** | **50** |  |  |  |  |  | **100** | **30** | **Application encoding** | **G** |
|  | **80** |  |  |  |  |  |  |  |  |  |  |  | **80** | **45** | **Connecting the building with**  **The application** | **H** |
| **20** |  |  |  |  |  |  |  |  |  |  |  |  | **20** | **15**  **Half-month total** | **Launching the app** | **I** |
| **20** | **80** | **0** | **0** | **40** | **30** | **80** | **60** | **160** | **160** | **500** | **200** | **200**  **1530** |
| **1530** | **1510** | **1430** | **1430** | **1430** | **1390** | **1360** | **1280** | **1220** | **1060** | **900** | **400** | **200**  **Cumulative** |

- Time phased budget: ($000000)

Cumulative baseline budget

**0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 6.5**

Month

Budget ($000000)

**- Risks:**

-Here are some potential risks and how to deal with them:

1- A problems with the geographical location:

\* There may be a problem with the geographical location, to

avoid it, the site must be examined by the architect before

completing the building design.

2- Lack of drivers who have the ability to use the application:

\* In order to face this problem, we have allocated a month to

train the drivers to understand how to use the application.

Any driver can subscribe during this month and within a three

days he will be able to use the application well.

3- Hacking the system by unethical hacker:

\* This would be a big trouble, so we assigned a software engineer

who is responsible for securing the system and making it safe

against hacking.

4- Sudden failure or fracture of any sensor:

\* To solve this problem, we contact the company sponsoring

the project to provide us with a responsible person to solve

this problems with sensors.