CHAPTER – 2

SYSTEM ANALYSIS & SPECIFICATION

2.1 User characteristics

2.2 Feasibility study

2.1 User Characteristics:-

The user or citizens of the city plays his/her role as a client and they get the services from the microcontroller and database using an internet connection.

Citizens:

The citizens of the city can observe the details of the parking slots online through website as well as the on the LCD screen located outside the parking area.

The citizen can check the water level and status of the water pump online through website. He cannot change the water pump status remotely.

Admin:

The admin of water distribution system can observe the level of water tank online using the website as well as through the LED indicator on the board. And he can also control the motor/water pump of the water tank.

The admin of the dumping station can observe the status of all dustbin of the area via the website and according to that, he can take proper action while on time. He can also receive the notification of dustbins with the help of website

2.2 Feasibility Study

Once scope has been identified, it is reasonable to ask whether we can build the system that meets this scope. Is this project feasible?

2.2.1. Technical feasibility

- The user of this system shouldn't require high technical skills to operate it, but yes, he/she needs basic knowledge of the electronic component used.
- Arduino is a very popular and easy to use microcontroller, so we can easily develop our project using it.
- Arduino programming is comfortable and different sensors can easily be managed using Arduino microcontroller.
- Smart city is an IOT project and it will be created using some micro-controllers, some electronic sensors to observe the environment around them and some cloud database to store sensors' data which is used to program micro-controller to do some specific well defined task as well as it gives real time updates to the application and website.

2.2.2. Economic feasibility

- As we building this project for whole city, and most of the modules of our project is fully or partially related to government departments.
- The Arduino Microcontroller, Arduino Shields and NodeMCU microcontroller are very cheaper electronic devices.
- Despite using more tools, we can make projects in a lower budget.
- There is a high chance of develop our project in cost effective manner.
- Automation brings cost saving with AI based and IOT technologies automating city resources such as water, electricity, and saving significant amount of money by doing so.
- A sustainable ecosystem with reduced emission and cleaner city, greatly increase the standards of living, happiness and leads to economic growth.
- Smart Cities are great investment that can impact the economy in a positive way.

2.2.3. Social Impact

- The Smart City project will give Quality life to the people of city and make their life easier and more convenient.
- Using this project people can save their time, water, electricity and also make their city clean which helps to provide core infrastructure and gives decent quality of life to its citizens, a clean and sustainable environment.