SMART PARKING SYSTEM

1ABSTRACT

1.1 OBJECTIVE

This system aims at replacing the conventional parking system with an IoT-based smart parking system by using RFID (radio-frequency identification). The users will be provided an entry card for getting access to the parking slot. The users will also be provided with an android based mobile application, using which they can know about the availability of the parking slot on their mobile phones. The users will need to maintain a minimum amount of balance in their entry card for getting access through the parking system, otherwise, the system will deny the access to enter. IN this way, this smart parking system will help reduce human effort & time by using automation technology.

1.2 SMART PARKING SYSTEM PRINCIPLE

The user first checks the availability of parking slots online. The microcontroller reads the sensor values of parking slots and then transfers this information online over IOT through WIFI. The iot server is used to translate this information. The rfid scanner is used to scan for user card and transmit the data to microcontroller, the microcontroller transmits the data over iot server to check if the card is valid and if it holds sufficient balance. If the card is invalid or doesn't hold sufficient balance, the entry to the vehicle is denied. If the card holds sufficient balance it is provided entry and then the sensor which is blocked by the car parking indicates which slot the car is parked in..

1.3 FEATURES OF THE SYSTEM

*Used in Theater.
*Used in mall parking lot.
*Used in Airport and Bus station parking lot.
*Used in Railway station. Used in super markets

1.4 SWOT ANALYSIS

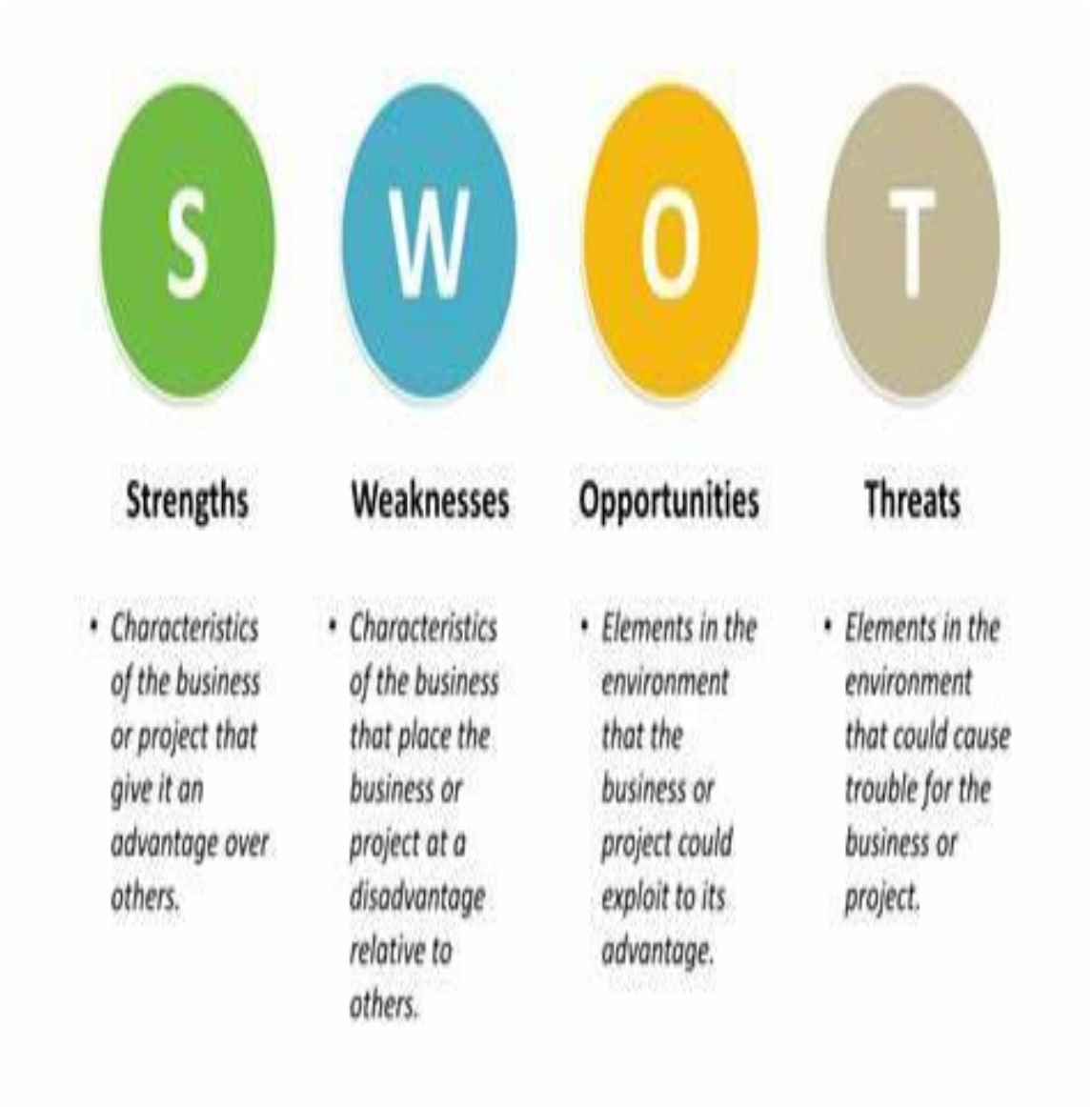
SWOT ANALYSIS

S-STRENGTH

- This project involves availability
- It reduces the manual work
- Easy to use

W-WEAKNESS

- It requires good network connection
- It requires proper information



O-OPPORTUNITIES

- Mobile applications can be developed

T-THREATS

- User authentication

1.5 4 W & 1 H ANALYSIS

- WHAT - smart parking system is used to know the vacancies and park the vehicle
- WHERE - wide application in school ,college, business organization, offices where parking is required accurately with time.

- WHEN – can be used whenever required in order to park the vehicle.

- WHY – smart parking is capable of park the vehicles without any manual need and hence vehicle is parked.

- HOW – by building the perfect system, testing and executing it.

2 REQUIREMENTS

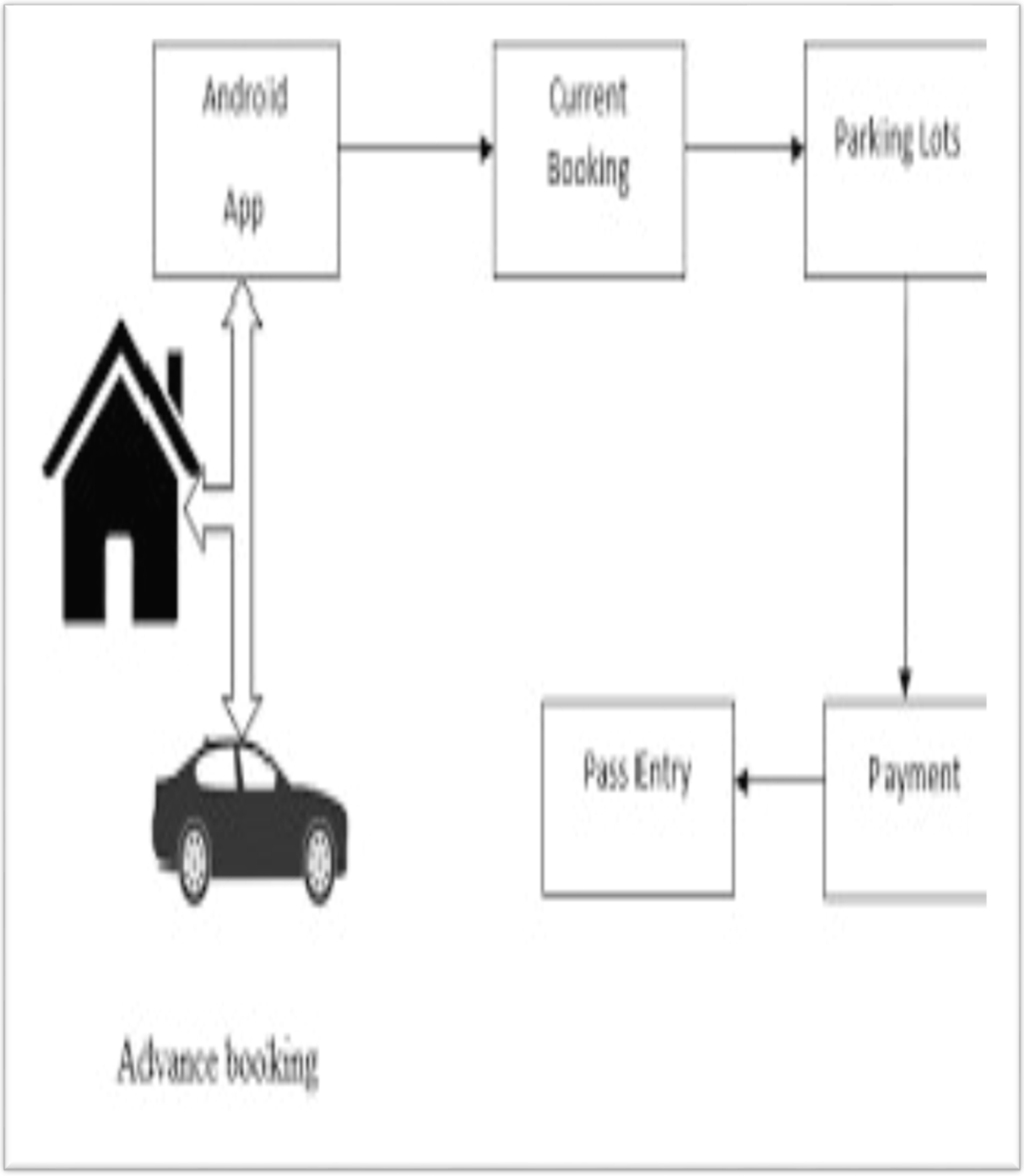
2.1 HIGH LEVEL REQUIREMENTS

ID	DESCRIPTION	CATEGORY	STATUS
HR01	User should be able to register his/hermobile	Technical	Upheld
HR02	System should be able to match inputuser id	Technical	Upheld
HR03	System should be able to say the availability with accurate date and time	Technical	Upheld
HR04	System should have human interface	Technical	Upheld
HR05	System stored and register number	Technical	Upheld

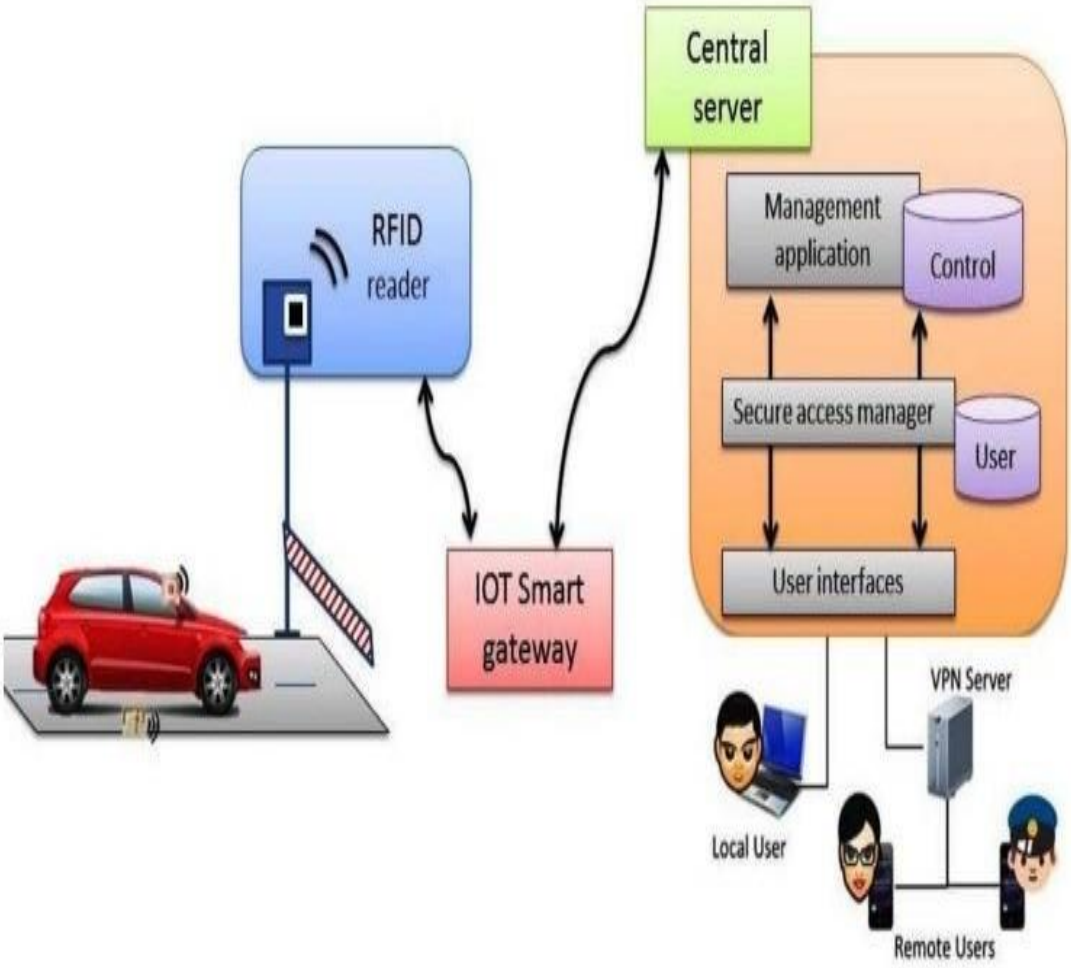
2.2 LOW LEVEL REQUIREMENTS

ID	DESCRIPTION	HLR ID	STATUS
LR01	System should have rfid scanner	HR01	Upheld
LR02	System should have minimum balance	HR02	Upheld
LR03	System must have wi-fi module to transmit data	HR03	Upheld
LR04	System will decline as low balance	HR04	Upheld
LR05	System should have think speak app	HR05	Upheld

3 FLOW DIAGRAM:



4 BEHAVARIAL DIAGRAM:



5 BLOCK DIAGRAM: