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INFORMATICS PRACTICES PROJECT

**PROJECT NAME –** **“**[**PARKING MANAGEMENT SYSTEM**](http://www.cppforschool.com/projects.html)**”**

**SUBMITTED BY :**

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**CERTIFICATE**

This is to certify that the project work **“**[**PARKING MANAGEMENT SYSTEM**](http://www.cppforschool.com/projects.html)**”** is a bonafide record of work done by **Bhavya,Sunidhi,Ritika** under the guidance and supervision of Mr.Navneet Sadh,Informatics Practices *teacher,KV Churu*

*It is also certified that this work is done by the student in original and by their own conscious effort*

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*External examiner Internal examiner*

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STUDENTNAME :Bhavya,Sunidhi&Ritika

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**Introduction**

Parking management system for managing the records of the incoming and outgoing vehicles in an parking house

It’s an easy for Admin to retrieve the data if the vehicle has been visited through number he can get that data **.**

Now days in many public places such as malls, multiplex system, hospitals, offices, market areas there is a crucial problem of vehicle parking. The vehicle parking area has many lanes/slots for car parking. So to park a vehicle one has to look for all the lanes. Moreover this involves a lot of manual labour and investment. Instead of vehicle caught in towing the vehicle can park on safe and security with low cost.

Parking control system has been generated in such a way that it is filled with many secure devices such as, parking control gates, toll gates, time and attendance machine, car counting system etc. These features are hereby very necessary nowadays to secure your car and also to evaluate the fee structure for every vehicles entry and exit

The objective of this project is to build a Vehicle Parking management system that enables the time management and control of vehicles using number plate recognition. The system that will track the entry and exit of cars, maintain a listing of cars within the parking lot, and determine if the parking lot is full or not. It will determine the cost of per vehicle according to their time consumption.

**2.1 Objectives :**

We can park our vehicle in our own slot by paying.

* Because of that there is no towing problems.
* And our vehicle has been parked as a secure condition.
* There is no risk for vehicle owner for parking the car.
* In case of any damages and problem of vehicle that will claim by parking management.
* As the world is facing many threads daily, robberies are done easily with no track to trace, bomb blasts occur with the use of vehicle, so if a proper system is adopted each and every record can be saved and anyone can be track easily therefore mainly is to make a better and fast software, most important user-friendly
* Maintain records in short time of period.
* Determines the parking area is full or not.
* Enhances the visitor’s experience.

PROJECT REQUIREMENT AND ANALYSIS :

Requirement analysis is usually the first phase of large scale software development process. The purpose of this phase is to identify the correct requirements of the user. The main purpose of this phase is to understand current system, current problem, expected solutions and functionalities. It is responsible for defining the functional and non- functional requirements for the proposed system. It identifies the constraints on the system operations and development.

1. **Modules**

1.add\_record():

This module add records in table .It records information about parking .it has following columns: vid

pname

vname

level1

freespace1

vehicleno1

nod1

vehtype

perdaycharge

dateofpark

payment1

mobile\_no

Along with this it also makes parking receipt.

1. parking\_table\_view()

To view or to see the exiting record we have to give a search criteria that are available for users under this module. Some search criterias are: vehicle no,parking no,parking id,parking level,parking date.

3.checkout()

In this module ,when the owner of vehicle come to take his vehicle back then a final receipt is prepared by giving parking id of the respective owner.The receipt include payment alongwith penality .

4.remove()

To remove a record this module is created. It simply takes any criteria like parking id ,owner name to delete a row from record.

1. **User Requirement**

* Need for an application that makes communicating easy and comfortable.
* An application that enables user to park a vehicle with safe and secure.
* Need for an application that is easy to use and widely available and hence a web application
* Handling all functions done with organization in a computerized manner.
* Allowing the user to park the vehicle directly.

1. **Functional Requirement**

* Admin need to insert all details about customer and vehicle.
* Admin need to delete all the details of customer and vehicle.
* Admin can retrieve the details of customer.
* Admin must generate a report for payment.

1. **Non-functional Requirement**

* Usability: These website has appropriate user interface and adequate information to guide the user in order to use the website.
* Portability: The website is portable as it is online website running across the net
* Flexibility: It is very flexible
* Security: This website provide user and authentication so that only the legitimate user are allowed to use the website
* Maintainability: These website is capable to secure the data and easily retrieve the data.
* Scalability: These system can further modified in future.

Scalability Requirements:

The data that is stored in the database should be updated carefully with new update, if available.

Python :

Python is widely used general purpose, high level programming languague. It was initially designed by guido van russom in 1991 and developed by python software foundation. It was developed mainly for emphasis on code readability and its syntax allows programmers to express concepts in fewer line of codes. Python is a programming languague that lets you work quickly and integrate system more efficiently.

**Features:**

* **Easy to use –** Due to simple syntax rule.
* **Interpreted language –** Code execution and interpretation line by line.
* **Cross-platform language –** It can run on windows,linux,macinetosh etc. equally.
* **Expressive language –** Less code to be written as it itself express the purpose of the code.
* **Completeness –** Support wide rage of library

Sqlite3 :

Sqlite is a self contained , high realibility , embedded , full featured, public domain, sql database engine. It is the most used database engine in the world. It is an process library and its code is publicly available. It is free for use of any purpose, commercial or private. It is basically an embedded sql database engine. It was designed by

D.Richard Hipp for the purpose of no administration required for operating a program.

**Features:**

* Designed to make it relatively easy to add other storage engines.
* Uses a very fast thread-based memory allocation system.
* Executes very fast joins using an optimized nested-loop join.
* Implements SQL functions using a highly optimized class library that should be as fast as possible. Usually there is no memory allocation at all after query initialization.

Use Case Diagram:

A use case diagram is a representation of a user's interaction with the system where relationship is shown between the user and the different use cases in which the user is involved.

Elements in the use case:

1. **Actor:** An actor represents a role that an outsider takes on when interacting with the business system.
2. **Association:** It is relationship between an actor and a business use case association.
3. **Use Case:** It describes the interaction between an actor and a business system.



**DESIGN OF THE PROJECT**

**Project Design & Architecture:**

The aim is to develop an application is to facilitate a user friendly environment for all users and reduce the manual efforts. My Project of includes various frames:

**Libraries Used in Code:**

import sqlite3

import os

import platform

from datetime import date

import site

import sys

**Requirements & Comparisons**

Hardware requirements:

Our project requires following hardware requirements to work to its full potential :-

Computer system :

|  |  |
| --- | --- |
| SYSTEM RAM | 1.00GB and Above |
| INPUT DEVICE | BASIC KEYBOARD AND TOUCH PAD |
| OUTPUT DEVICE | STANDARD COLOR MONITOR |
| OPERATING SYSTEM | WINDOWS 10 |
| FRONT END | PYTHON3 |
| BACK END | SQL SERVER |

Software Requirements:

**For Development Purpose:-**

1. IDE:Jupyter notebook

2. Database: SQLite3

3. Platform :Python

4. Graphics:draw.io (Usecase)

**Station:**

1. PC

Testing

It is integral part of any system’s development life cycle without which the system

dissatisfaction and downfall of reputation.

System testing is the stage of implementation, which aims at ensuring that the system works accurately and efficiently before actual operation commences. No program or system design is perfect, communication between the user and the designer is not always complete or clear. All this can result in errors.

Another reason for system testing is its utility as a user oriented vehicle before implementation. The application system is worthless if does not meet user needs, thus the system should be tested to see whether it meets the user requirements.

Testing here is conducted in bottom up approach as follows:

* Module testing: Here testing is done at each module level. Each case has been throughly tested to discover pitfalls.
* System testing: Here testing is done after all the modules have been integrated.

**Conclusion**

This Project is minimizing the task of parking a vehicle by paying and saying some details about customer and vehicle to save data .In this the vehicle is parked as a safe and secure. This project is done as Efficient as possible

I also conclude that this project has helped us gain more knowledge about the topic that we are indulged ourselves into “ Visual Studio ”. I would be glad to enhance and promote this project if given chance and help ourselves and society in the near future

The developed application is tested with sample inputs and outputs obtained in according to the requirement. Even though I have tried our level best to make it a dream project. Due to time constraints I could not add more facilities to it.

The efficiency of the developed system can be enhanced with some minor modifications. Future development can be made in proposed system by integration more services like:

* It can be implemented through web pages.
* New effectives modules can be added time to time
* **BIBLIOGRAPHY**

BOOKS:

Sumita Arora-Informatics Practices

Web-Pages:

* SQLite Query
* database connectivity (Youtube Channel)
* Report Generation by Reportlab (Youtube Channel)