SYNOPSIS

ON

DIGI PARK

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1. INTRODUCTION

Parking management system is designed for managing the records of the incoming and outgoing vehicles in a parking area.

In now days many public places such as malls, multiplex system, hospitals, offices, market areas there is a crucial problem of vehicle parking. The workers of parking area have to look for vacant slots available for parking they also have to generate bill manually as it consumes much time and wastes a lot of energy.

So this parking system will reduce wastage of time and energy by helping workers of parking area by maintain record of vacant slots in parking area and generating bill digitally workers just have to operate this parking system correctly which consumes less time.

This parking system is capable of generating fair without any mistake it is capable for maintaing record of parked vehicles and will show the details about vacant slot.

2. PROBLEM DEFINITION

Parking managers manually count automobiles, which takes time. In this case, a physical examination of the vehicle's condition and handwritten tickets are necessary.

In this instance, a manual technique produces 50% entry errors, which have a major negative impact on the bottom line. For record keeping, manual systems need a lot of time and paper, and the records are also not kept in good condition.

The demand for parking in Indian metros is seeing no signs of stopping. Because land resources are limited, it isn't possible to conveniently plan parking spaces according to demand. Instead of increasing available parking spaces, an effective technology-based solution must be employed to optimize the use of available spaces.

3. OBJECTIVES

The major goal of the parking system is to manage the information regarding time, vehicles, parking spaces, patrons, and parking payments. It manages all information regarding time, kind, and parking costs. Since the project was entirely developed on the administrative side, only the administrative is assured access.

The project's goal is to create an application software that will lessen the amount of human effort required to manage parking spaces, vehicle types, and length. It keeps track of all the information regarding parking spaces, clients, and parking payments. Principal goals are:

•   Maintain records in short time of period.

•   Determines the parking area is full or not.

•   Manage the information of duration.

•   Calculates parking fare.

4. TECHNOLGY USED

4.1 FRONT END:-

Fig. 4.1

4.1.1 Python version 3.10.5

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together.

Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse.

The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed

4.1.2 Pyqt 5

Fig. 4.2

Qt is set of cross-platform C++ libraries that implement high-level APIs for accessing many aspects of modern desktop and mobile systems. These include location and positioning services, multimedia, NFC and Bluetooth connectivity, a Chromium based web browser, as well as traditional UI development.

PyQt5 is a comprehensive set of Python bindings for Qt v5. It is implemented as more than 35 extension modules and enables Python to be used as an alternative application development language to C++ on all supported platforms including iOS and Android.

4.1.3 Tikenter

Tkinter is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit,[1] and is Python's de facto standard GUI.[2] Tkinter is included with standard Linux, Microsoft Windows and macOS installs of Python.

The name Tkinter comes from Tk interface. Tkinter was written by Steen Lumholt and Guido van Rossum,[3] then later revised by Fredrik Lundh.

4.2 BACK END

4.2.1 My sql

Fig. 4.2

MySQL is an Oracle-backed open source relational database management system (RDBMS) based on Structured Query Language (SQL). MySQL runs on virtually all platforms, including Linux, UNIX and Windows. Although it can be used in a wide range of applications, MySQL is most often associated with web applications and online publishing.

MySQL is an important component of an open source enterprise stack called LAMP. LAMP is a web development platform that uses Linux as the operating system, Apache as the web server, MySQL as the relational database management system and PHP as the object-oriented scripting language. (Sometimes Perl or Python is used instead of PHP.)

Originally conceived by the Swedish company MySQL AB, MySQL was acquired by Sun Microsystems in 2008 and then by Oracle when it bought Sun in 2010. Developers can use MySQL under the GNU General Public License (GPL), but enterprises must obtain a commercial license from Oracle.

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5. SYSTEM REQUIREMENTS

5.1 HARDWARE REQUIREMENTS

• RAM –   2/4GB -DDR3/DDR4.

• System –   Can run on any system (operating system) windows 7, 8, 8.1,10 & 11 single Language (32/64

  BIT).

• I3 / I5 Processor– 2.4GHz CPU.

• Hard drive space – Minimum required- 10 GB internal.

5.2 SOFTWARE REQUIREMENTS

I.   Idle python 3.10.5

II.   Pyqt 5

III.   Python database connectivity

6.METHODOLGY

The systems development life cycle (SDLC) is a conceptual model used in project management that describes the stages involved in an information system development project, from an initial feasibility study through maintenance of the completed application. SDLC can apply to technical and non-technical systems.

6.1 Why do we use it?

If you are thinking why you should use this approach for the project success, then read the below points and know how SDLC could contribute to your project's success:

1. A better plan of SDLC will give a whole picture of the work that is needed to be done throughout the Project. This will help in having control over the various phases and activities. The entire project can be managed very efficiently with SDLC project planning.

2. This will add more transparency and visibility to the tasks at hand and will help in the timely completion of the project.

3. This plan when well versed with the team will help in making sure that risk management is done effectively. The project will be kept on track and the timely delivery along with the cost as well as the resources management can be done in a precise way.

4. This will help in having all the requirements in the open and will keep everyone in the team on the same page throughout the project.

5. With the help of the SDLC plan, the idea of the project can be brought into action and the functions can be started. It will help in delivering a better user experience, along with better change management as well as process development.

6. It is nonetheless to say that it is going to increase the quality of code written and deliver better efficiency in the project. This can be a way to reduce cost as it can have a better approach to solve problems and gather requirements

6.2 Requirements

When the proposal is given by the customer and the idea behind is discussed thoroughly, the time to know about the resources, time, and other things needed to deliver that proposal comes into the picture. This phase is very much important as here all the details are discussed about the time and resources and all the resources are accumulated. In this phase, various documents are written which can be referred back whenever needed in the future. This could be considered as the planning stage before the team is put into any action for the work needed to be done.

6.3 Analysis

During this phase, the specific details are being gathered and there are various details to the existing or the new prototypes being discussed. Doing this, the developers create SRS with all the details of the software, the hardware needed, and network requirements for the project to be completed. During this, the analysis is one on what kind of system will be used, along with the costs of solutions for the project proposal. You can learn about management and complete this phase by going for PMP online training.

6.4 Design

With this stage, we can say that visualization plays a major role. In the design stage, which is a precursor to the actual development stage, the developers foresee the overall application and gather various things including the system interface, different network requirements, user interfaces, and databases required. This is an important fact as with this stage the theoretical phases are going to have tangible phases and the work is going to happen in the project.

6.5 Development

The part where the developers are responsible for writing the code as a part of the software development comes under this. The code is based on all the discussions that were part of the previous stages and based on those outlines and specifications, the code is built by the team.

There is a team of front-end as well as back-end developers in the team which will work for the better writing of the code and deliver it to the next stage of the cycle. In SDLC project planning, all these things are taken care of with proper planning.

6.6 Testing

We all know that writing code is not going to help to develop software. There is rigorous testing involved whenever there is software development. Quality assurance is very much needed whenever we are going to make the development in the project. The bugs along with defects are being raised, fixed, and then retested again. This process continues till the time we have fine working software in the end. The time needed for this phase depends on the developer's efficiency, the complex nature of the project, as well as the end-users requirements. This can be a very short period or could go for longer periods as well.

6.7 Deployment

This is one of the best stages as most of the work is completed. The code is written; the software is developed and tested successfully. Now it is time to roll over the new development work to the production. Here the software or the new code is ready for the end-users to use. The released product can be used by the users in the business environment or can be downloaded by them for use.

6.8 Maintenance

Even after the software is being rolled to the production environment, it needs to be maintained and effective to be used for a better user experience. The changes should be relevant to the business requirements and this may need time to time maintenance. So this phase will make sure that all the things are working in a fine manner.

6.9 Final Words

The management of the projects is one of the crucial tasks and going for SDLC can be very beneficial. Now we have seen that SDLC holds the best outcome for the projects and also SDLC

makes sure that the projects are completed on time with maximum efficiency. This is the reason that more and more companies are going for this approach. There are varieties of models which you can choose as per your project requirements. You should make sure that each phase of SDLC is being implemented with its proper function. This will make sure that the project is going to work in a smooth way and have better results for the team and the business as well.

7. FEASIBILITY

7.1 Types of Feasibility Study

A feasibility analysis evaluates the project's potential for success; therefore, perceived objectivity is an essential factor in the credibility of the study for potential investors and lending institutions. There are five types of feasibility study—separate areas that a feasibility study examines, described below.

1. Technical Feasibility

This assessment focuses on the technical resources available to the organization. It helps organizations determine whether the technical resources meet capacity and whether the technical team is capable of converting the ideas into working systems. Technical feasibility also involves the evaluation of the hardware, software, and other technical requirements of the proposed system. As an exaggerated example, an organization wouldn't want to try to put Star Trek's transporters in their building—currently, this project is not technically feasible.

2. Economic Feasibility

This assessment typically involves a cost/ benefits analysis of the project, helping organizations determine the viability, cost, and benefits associated with a project before financial resources are allocated. It also serves as an independent project assessment and enhances project credibility— helping decision-makers determine the positive economic benefits to the organization that the proposed project will provide.

3. Legal Feasibility

This assessment investigates whether any aspect of the proposed project conflicts with legal requirements like zoning laws, data protection acts or social media laws. Let's say an organization wants to construct a new office building in a specific location. A feasibility study might reveal the organization's ideal location isn't zoned for that type of business. That organization has just saved considerable time and effort by learning that their project was not feasible right from the beginning.

4. Operational Feasibility

This assessment involves undertaking a study to analyze and determine whether—and how well— the organization's needs can be met by completing the project. Operational feasibility studies also examine how a project plan satisfies the requirements identified in the requirements analysis phase of system development.

5. Scheduling Feasibility

This assessment is the most important for project success; after all, a project will fail if not completed on time. In scheduling feasibility, an organization estimates how much time the project will take to complete.

When these areas have all been examined, the feasibility analysis helps identify any constraints the proposed project may face, including