MINI PROJECT REPORT

**On**

**CLOUD BASED BUSS PASS SYSTEM**

**SUBMITTED BY-**

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**SYNOPSIS**

**Student Information:**

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**Project Information:**

|  |  |
| --- | --- |
| Title Of Project | Cloud Based Bus Pass System |
| Role & Responsibility | Create a personal cloud, Storage of huge data, have a backup,  Reliable for passengers |
| Technical Details | Hardware required: Personal computer with minimum 4GB  RAM, Hard Disk 50GB,  Processor Intel CORE i3  Software required: OS – Windows 10, IDE – AWS  Front end – html, CSS, php  Back end – Cloud Shell |
| Project Implementation Details | Fully Implemented |
| Project Duration | V Semester |
| Supervised by | Mr. Vivek Sharma |

**Summary of the Project Work:**

|  |
| --- |
| Customer can buy the bus ticket over the Internet, 24 hours a day, this solves the issue of ticket being misplaced or stolen. Users can recharge through cc or debit car.  The site may get overloaded due to huge number of users visiting at once. Thus this system is built up using cloud infrastructure for improved performance.  • Using this website we can check all details related Bus pass and instruction like how to renew pass how to update it, and also provide details of student discount.  • This website keeps all information of all Bus passes.  • Passengers first need to verify themselves the system using various through registration. Once verified the system allows them to book passes for any route online.  • Users can recharge through cc debit cards. |

**ACKNOWLEDGEMENT**

The success and final outcome of this project required a lot of guidance and assistance from many people and we are extremely privileged to have got this all along the completion of my project. All that we have done is only due to such supervision and assistance and we would not forget to thank them.

 We respect and thank **Mr. Vivek Sharma** for providing me an opportunity to do the project work and giving us all support and guidance which made us complete the project duly. We are extremely thankful to him for providing such a nice support and guidance, although he had busy schedule managing the corporate affairs. We owe our deep gratitude to our project guide **Mr. Vivek Sharma** who took keen interest on my project work and guided us all along, till the completion of our project work by providing all the necessary information for developing a good project. After doing this project we can confidently say that this experience has not only enriched me with technical knowledge but also has unparsed the maturity of thought and vision. The attributes required in being a successful professional

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**Declaration**

I hereby declare that the work which is being presented in the Mini Project “**Cloud Based Buss Pass System”,** in partial fulfilment of the requirements for Mini Project viva voice, is an authentic record of our own work carried under the supervision of **Mr. Vivek Sharma.**

Signature of Candidates:

Name of Candidates: Aayushi Rai (171510003)

Pranjul Singhal (171510040)

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Course: B.Tech (CCV)

Year: III

Semester: V

**ABSTRACT**

Using Cloud we have Built a Bus pass system through which Customer can buy the bus ticket over the Internet, 24 hours a day, this solves the issue of ticket being misplaced or stolen. Users can recharge through cc or debit car.

The site may get overloaded due to huge number of users visiting at once. Thus this system is built up using cloud infrastructure for improved performance.

• Using this website we can check all details related Bus pass and instruction like how to renew pass how to update it, and also provide details of student discount.

• This website keeps all information of all Bus passes.

• Passengers first need to verify themselves the system using various through registration. Once verified the system allows them to book passes for any route online.

• Users can recharge through cc or debit cards.

Contents

1. Introduction ……………………………………………………………………….. 1
2. Technology Review…………………………………………………………….. 2
   1. HTML…………………………………………………………………2
   2. CSS……………………………………………………………………2
   3. PHP……………………………………………………………………2
   4. JAVA Script…………………………………………………………...2
   5. Amazon Web Services…………………………………………………………2
3. Technology.……………………………………………………………….... 3
   1. Software Requirements…………………………………………………3

3.1.a Front End: HTML, CSS………………………………………3

3.1.b Back End: Cloud Shell………………………………………3

3.1.c Operating System: Windows 10………………………………..3

* 1. Hardware Requirements…………………………………………………3

3.2.a Processor: intel CORE i5………………………………………3

3.2.b Hard Disk: 64 bits………………………………………3

3.2.c RAM: 8 GB………………………………..3

1. Data Modelling Diagram………………………………………………….... 3
   1. Context Level DFD…………………………………………………3
   2. Use Case Diagram………………………………………3
   3. Sequence Diagram………………………………………3
   4. Activity Diagram………………………………..3
   5. E-R Diagram………………………………………………3
2. Data Dictionary ….………………………………………………....18
3. Glimpse Of Project ……………………………………………………......20
4. Conclusion ………………………………………………………………...21
5. Bibliography…………………………………………………………………….30

**CHAPTER-1**

**INTRODUCTION**

This project is created to provide “safe, reliable, saving, efficient and affordable” services for user. This idea would help the user in a better way. As per the previous system the user had to do each and every process manually, but this system helps user to make the work bit faster. The user can then take print out of this bus pass from their mail id and use them.

The bus pass will be differ for different types of users. In this bus pass, all the required details such as person name, address, date of birth, mail id, validity period, amount paid and photo copy of the person are provided. Working organization details will be provided in employees bus pass. The renewal process can be done either monthly or yearly as per user wish. Based on that renewal period amount will be deducted.

• Using this website we can check all details related Bus pass and instruction like how to renew pass how to update it, and also provide details of student discount.

• This website keeps all information of all Bus passes.

• Passengers first need to verify themselves the system using various through registration. Once verified the system allows them to book passes for any route online.

• Users can recharge through cc or debit cards.

**CHAPTER-2**

**TECHNOLOGY REVIEW**

**List of Symbols/Notation**

Notation of Dataflow Diagram:

ONLINE BUS PASS SYSTEM
v
LIST OF SYMBOLS/NOTATION
Notations for Dataflow Diagram:
Graphical Notation Name
Process
Flow of ...

Notation for Use Case Diagram:

ONLINE BUS PASS SYSTEM
v
LIST OF SYMBOLS/NOTATION
Notations for Dataflow Diagram:
Graphical Notation Name
Process
Flow of ...

**CHAPTER-2**

**INTRODUCTION TO PYTHON**

**List of Symbols/Notation**

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**Chapter- 2**

**TECHNOLOGY REVIEW**

**2.1 HTML**

**HTML** stands for **Hyper Text Markup Language**, which is the most widely used language on Web to develop web pages. **HTML** was created by Berners-Lee in late 1991.

**HTML** is a MUST for students and working professionals to become a great Software Engineer specially when they are working in Web Development Domain. I will list down some of the key advantages of learning HTML:

* You can create a website or customize an existing web template if you know HTML well.
* If you want to start a career as a professional web designer, HTML and CSS designing is a must skill.
* If you want to optimize your website, to boost its speed and performance, it is good to know HTML to yield best results.
* Once you understands the basic of HTML then other related technologies like javascript, php, or angular are become easier to understand.

**2.2 CSS**

Number stores numeric values. For example;

a = 3, b = 5

Python supports 4 types of numeric data.

1. int (signed integers like 10, 2, 29, etc.)

2. long (long integers used for a higher range of values like 908090800L, -0x1929292L, etc.)

3. float (float is used to store floating point numbers like 1.9, 9.902, 15.2, etc.)

4. complex (complex numbers like 2.14j, 2.0 + 2.3j, etc.)

A complex number contains an ordered pair, i.e., x + iy where x and y denote the real and imaginary parts respectively.

**2. String**

The string can be defined as the sequence of characters represented in the quotation marks. In python, we can use single, double, or triple quotes to define a string.

String handling in python is a straightforward task since there are various inbuilt functions and operators provided.

In String, the operator + is used to concatenate and \* is used as repetition operator.

**For Example -**

str1 = 'hello'

str2 = ' how are you'

print (str1[0:2])

print (str1[4])

print (str1\*2)

print (str1 + str2)

**Output:**

he

o

hellohello

hello how are you

**3. List**

Lists can contain data of different types. The items stored in the list are separated with a comma (,) and enclosed within square brackets [].

We can use slice [:] operators to access the data of the list. The concatenation operator (+) and repetition operator (\*) works with the list in the same way as they were working with the strings.

Consider the following example.

la = [1, "hi", "python", 2]

print (la[3:]);

print (la[0:2]);

print (la);

print (la + l);

print (la \* 3);

**Output:**

[2]

[1, 'hi']

[1, 'hi', 'python', 2]

[1, 'hi', 'python', 2, 1, 'hi', 'python', 2]

[1, 'hi', 'python', 2, 1, 'hi', 'python', 2, 1, 'hi', 'python', 2]

**4. Tuple**

A tuple is similar to the list in many ways. Like lists, tuples also contain the collection of the items of different data types. The items of the tuple are separated with a comma (,) and enclosed in parentheses ().

A tuple is a read-only data structure as we can't modify the size and value of the items of a tuple.

**Example -**

t = ("hi", "python", 2)

print (t[1:]);

print (t[0:1]);

print (t);

print (t + t);

print (t \* 3);

t[2] = "hi";

Output:

('python', 2)

('hi',)

('hi', 'python', 2)

('hi', 'python', 2, 'hi', 'python', 2)

('hi', 'python', 2, 'hi', 'python', 2, 'hi', 'python', 2)

Traceback (most recent call last):

File "main.py", line 8, in <module>

t[2] = "hi";

TypeError: 'tuple' object does not support item assignment

**5. Dictionary**

Dictionary is an ordered set of a key-value pair of items. Key can hold any primitive data type whereas value is an arbitrary Python object.

The items in the dictionary are separated with the comma and enclosed in the curly braces{}.

Consider the following example.

1. d = {1:'Jimmy', 2:'Alex', 3:'john', 4:'mike'};

2. print("1st name is "+d[1]);

3. print("2nd name is "+ d[4]);

4. print (d);

5. print (d.keys());

6. print (d.values());

**Output:**

1st name is Jimmy

2nd name is mike

{1: 'Jimmy', 2: 'Alex', 3: 'john', 4: 'mike'}

[1, 2, 3, 4]

['Jimmy', 'Alex', 'john', 'mike']

**Chapter-4**

**PYTHON OOP’s CONCEPT**

Like other general purpose languages, python is also an object-oriented language since its beginning. Python is an object-oriented programming language. It allows us to develop applications using an Object Oriented approach. In Python, we can easily create and use classes and objects.

Major principles of object-oriented programming system are given below.

o Object

o Class

o Method

o Inheritance

o Polymorphism

o Data Abstraction

o Encapsulation

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**Object**

The object is an entity that has state and behaviour. It may be any real-world object like the mouse, keyboard, chair, table, pen, etc.

Everything in Python is an object, and almost everything has attributes and methods. All functions have a built-in attribute.

**Class**

The class can be defined as a collection of objects. It is a logical entity that has some specific attributes and methods. For example: if you have an employee class then it should contain an attribute and method, i.e. an email id, name, age, salary, etc

Syntax

1. class ClassName:

2. <statement-1>

3. .

4. .

5. <statement-N>

**Method**

The method is a function that is associated with an object. In Python, a method is not unique to class instances. Any object type can have methods.

**Inheritance**

Inheritance is the most important aspect of object-oriented programming which simulates the real world concept of inheritance. It specifies that the child object acquires all the properties and behaviours of the parent object.

By using inheritance, we can create a class which uses all the properties and behaviour of another class. The new class is known as a derived class or child class, and the one whose properties are acquired is known as a base class or parent class.

It provides re-usability of the code.

**Polymorphism**

Polymorphism contains two words "poly" and "morphs". Poly means many and Morphs means form, shape. By polymorphism, we understand that one task can be performed in different ways.

For example: You have a class animal, and all animals speak. But they speak differently. Here, the "speak" behaviour is polymorphic in the sense and depends on the animal. So, the abstract "animal" concept does not actually "speak", but specific animals (like dogs and cats) have a concrete implementation of the action "speak".

**Encapsulation**

Encapsulation is also an important aspect of object-oriented programming. It is used to restrict access to methods and variables. In encapsulation, code and data are wrapped together within a single unit from being modified by accident.

Data Abstraction

Data abstraction and encapsulation both are often used as synonyms. Both are nearly synonym because data abstraction is achieved through encapsulation.

Abstraction is used to hide internal details and show only functionalities. Abstracting something means to give names to things so that the name captures the core of what a function or a whole program does.

## Chapter-5

## PYTHON APPLICATIONS

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#### 1) Web Applications

We can use Python to develop web applications. It provides libraries to handle internet protocols such as HTML, Email processing request, etc. It also provides Frameworks such as Django, Pyramid, Flask, etc to design and develop web based applications.

#### 2) Desktop GUI Applications

Python provides Tk GUI library to develop user interface in python based application. Some other useful toolkits like wx widgets, etc that are usable on several platforms.

#### 3) Software Development

Python is helpful for software development process. It works as a support language and can be used for build control and management, testing etc.

**Chapter-6**

**INTRODUCTION TO TKINTER WITH PYTHON**

**6.1 Designing User Interfaces**

User interfaces are what allows end users to interact with an application. An application can be excellent, but without a good user interface, it becomes more difficult to use, and less enjoyable. It is thus very important to design good user interfaces. Designing user interface takes place at two different levels: the graphical level and the event level. Graphical elements of a user interface are called widgets. Widgets are basic components like buttons, scrollbars, etc. But user interfaces involve more than a collection of widgets placed in a window. The application must be able to respond to mouse clicks, keyboard actions or system events such as minimizing the window. For this to happen, events must be associated to some pieces of code. This process is called binding. The next two chapters will cover each level in more details, but this chapter will present an overview of Tkinter and explain why it has become the leading GUI toolkit for the Python language.

**6.2 What is Tkinter?**

Tkinter is an open source, portable graphical user interface (GUI) library designed for use in Python scripts. Tkinter relies on the Tk library, the GUI library used by Tcl/Tk. Thus, Tkinter is implemented using multiple layers. Several competing GUI toolkits are available to use with the Python language, namely:

**wxPython :** A wrapper extension for wxWindows, a portable GUI library originally developed for the C++ language. It is the second most popular GUI toolkit for Python since it is considered excellent for complex interface design.

**JPython (Jython) :** Since it is implemented in java, JPython has access to Java GUI libraries, namely SWING and AWT. Recently, JTkinter has been implemented and provides a Tkinter port to JPython using the Java Native

**6.3 Why Tkinter?**

With all the competing GUI toolkits available for the Python language, what makes Tkinter stand out of the rest? Why is it the most popular toolkit for use interface design?

To find the answer, one must look at the advantages that it offers.

1. **Layered design** The layered approach used in designing Tkinter gives Tkinter all of the advantages of the TK library. Therefore, at the time of creation, Tkinter inherited from the benefits of a GUI toolkit that had been given time to mature. This makes early versions of Tkinter a lot more stable and reliable than if it had been rewritten from scratch. Moreover, the conversion from Tcl/Tk to Tkinter is really trivial, so that Tk programmers can learn to use Tkinter very easily.

2. **Accessibility Learning** Tkinter is very intuitive, and therefore quick and painless. The Tkinter implementation hides the detailed and complicated calls in simple, intuitive methods. This is a continuation of the Python way of thinking, since the language excels at quickly building prototypes.

**6.4 Fundamentals Of Tkinter**

Consider the following diagram, it shows how an application actually executes in Tkinter:



**CHAPTER-7**

**SOURCE CODE**







**CHAPTER-8**

**USE CASE DIAGRAM & OUTPUT**



Fig 8.1: Use Case Diagram for Calculator

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**Fig 8.2: Look of my Calculator**

**CHAPTER-9**

**CONCLUSION**

**9.1 CONCLUSION**

Bus pass Registration and Renewal System Project is a real time project which is useful for the people who are facing problems with the current manual work of bus pass Registration and renewal. It also increases the validity period, frequently Warns to the student before completion of his validity period by website. His / Her Renewal or Registration can be done using a voucher or even by a credit card. This online bus pass registration application will help students save their time and renewal bus passes without standing in a line for hours near counters. Initially people need to register with the application by submitting details of photo, address proof, and required details and submit through online. They will verify your details and if they are satisfied they will approve bus pass. You can even renewal using credit card or other wire transfer methods.

**Chapter-10**

**BIBLIOGRAPHY**

**10.1 BIBLIOGRAPHY**

* [**www.w3schools.com**](http://www.w3schools.com)
* [**https://www.geeksforgeeks.org**](https://www.geeksforgeeks.org/)
* [**https://www.tutorialspoint.com**](https://www.tutorialspoint.com/)
* [**www.quora.com**](http://www.quora.com)