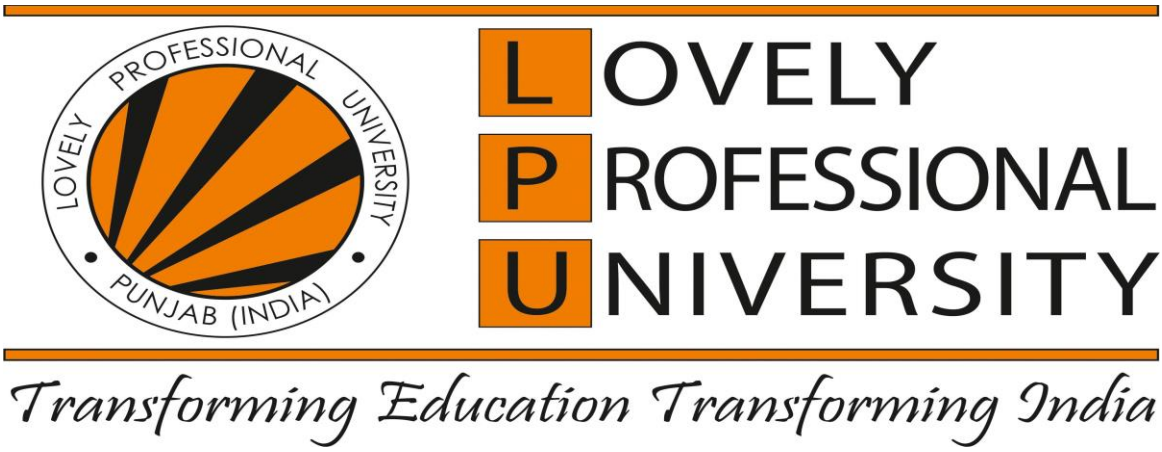


SIX WEEKS SUMMER TRAINING REPORT

On

Python Programming

Submitted by

Adarsh Kumar Singamsetty

Registration No: - 11902462

Program Name: - Object Oriented Programming in Python

Uder the Guidance of Code Tantra

School of Computer Science & Engineering

Lovely Professional University, Phagwara

June-July,2021

DECLARATION

I hereby declare that I have completed my six weeks summer training at Code Tantra from 01-06-2021 to 10-07-2021 under the guidance of Code Tantra coordinator. I have worked with full dedication during these six weeks of training and my learning outcomes fulfill the requirements of degree of Computer sciences, Lovely Professional University, Phagwara.

Name of Student: - Adarsh Kumar Singamsetty

Registration Number: - 11902462

DATE: - 28 July, 2021

ACKNOWLEDGEMENT

I would like to express my special thanks to our faculty who taught us very nicely and helped us in making different types of python programs. It was a course with substantial coding exercises, understandable and self-learning content that helped me a lot to improve my knowledge about programming languages and python coding skills.

Adarsh Kumar Singamsetty

Summer Training Certificate:

Table of Contents:

1. Introduction

Python is a widely used general-purpose, high level programming language. It was created by Guido Van Rossum in 1991 and further it was developed by the Python Software Foundation. It was designed with an emphasis of code readability, and its syntax allows programmers to express their concepts in fewer lines of code.

Python is a programming language that lets you work quickly and integrate systems more efficiently. Python works on different platforms such as windows, Mac, Linux etc. Python has a simple syntax like English language.

The most recent major version of Python is Python 3. However, Python 2, although not being updated with anything other than security updates, is still quite popular.

2. Technology Learnt: -

There were many technologies learnt using python.

All the topics in Python is covered and learnt using this course.

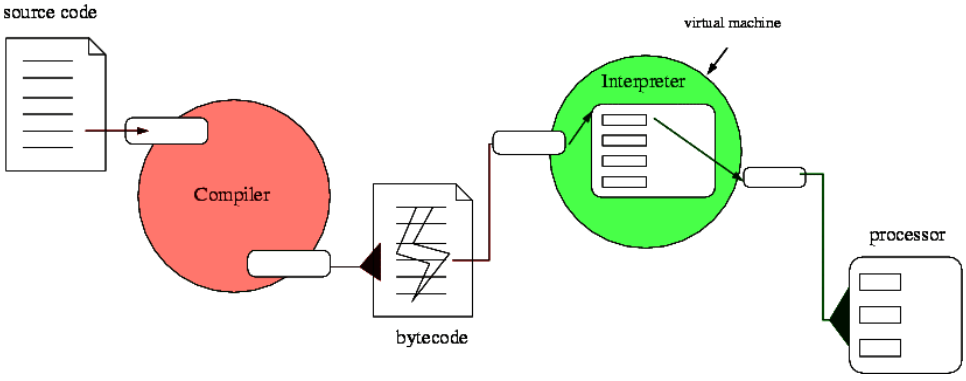
- Variables Expressions and Statements, Functions and Recursion
- Strings, Lists, NumPy Arrays and Tuples
- Pandas, Files and Exception
- Classes and Objects
- Data Visualization
- Dynamic Programming
- Constructors

Scope of work: -

The main Aim of this course is to learn about python programming. This language also helps students in further interviews, Examinations etc. This course includes different types of codes, programs and topics which is useful to the students in future life.

3. **Characteristics of Python: -**

Interpreted Language: Python is processed at runtime by Python Interpreter.



- **Easy to read**: Python source-code is clearly defined and visible to the eyes.
- **Portable**: Python codes can be run on a wide variety of hardware platforms having the same interface.
- **Extendable**: Users can add low level-modules to Python interpreter.
- **Scalable**: Python provides an improved structure for supporting large programs than shell-scripts.
- **Object-Oriented-Language**: It supports object-oriented features and techniques of programming.
- **Interactive Programming Language:** Users can interact with the python interpreter directly for writing programs.
- **Easy language:** Python is easy to learn language especially for beginners.
- **Straight forward Syntax:** The formation of python syntax is simple and straightforward which also makes it popular.

4. **Reasons for choosing this Technology: -**

Software developers have more than hundreds of languages to go ahead with that makes it difficult to come to the best options. However, the developers understand the importance of choosing the right programming language that can affect the outcome of software. While choosing the programming language, developers consider the scalability, place of work, complexity, and type of application followed by a maintenance cycle.

Here are a few reasons that make software developers opt for the Python programming language.

No budget
Python is an open-source and free programming language that makes it easier for programmers to get supporting libraries and modules along with other tools. The programming language is affordable for developers and for businesses of all sizes that want to kickstart their operations.

Trendy
Python programming language allows developers to get fast and easy applications that makes it a trendy language. It can be used by veterans and beginners easily because of simple syntax and clear code.

Easy to use
Python is extremely easy to use with extensive support and easy to integrate features. The programming language is easy to understand and read, making it easier for beginners to start their coding career.

5. **Profile of the problem: -**

Python programming helps us to create many kinds of projects, helps to solve programming which is very easy and understandable.

6. **Existing System: -**

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.

Often, programmers fall in love with Python because of the increased productivity it provides. Since there is no compilation step, the edit-test-debug cycle is incredibly fast. Debugging Python programs is easy: a bug or bad input will never cause a segmentation fault. Instead, when the interpreter discovers an error, it raises an exception. When the program doesn't catch the exception, the interpreter prints a stack trace. A source level debugger allows inspection of local and global variables, evaluation of arbitrary expressions, setting breakpoints, stepping through the code a line at a time, and so on. The debugger is written in Python itself, testifying to Python's introspective power.

A simple program to print “Hello World”

JAVA CODE	PYTHON CODE
Public class HelloWorld	Print (“Hello World”)
{	
Public static void main (String args [])	
{	
System.out.printin (“Hello World!)	
}	
}	

7. **Course Content: -**

- Introduction to Python
- Data Types
- Operators in python
- Algorithmic Problem Solving
- Control Statements
- Numbers
- Strings
- Lists
- Tuples
- Dictionaries
- Sets
- Comprehensions
- Functions
- Modules
- Python Packages

- File Handling
- Object Oriented Programming in Python Classes
- Exception Handling
- Standard Library
- Data Structures
- GUI Programming

8. Software Requirement Analysis: -

1. **Functional requirements** These are statements of services the system should provide, how the system should react to inputs, and how the system should behave in situations. In some cases, the functional requirements may also explicitly state what the system should not do.

- **REGISTRATION:**

  The User must register in the app giving his/her details.

- **LOGIN:**

  The system allows users to login using username and password.

  The system should allow the user to create a new account.

- **HOMEPAGE:**

  The system allows users to enter the homepage.

  The system displays different types of portals to users such as User details, Book cab, My bookings.

- **BOOKING PAGE**:

  The system allows the users to enter into the booking page.

- **CARS:**

  The system should allow the user to register cars.

  The system shows different types of cars.

  The system allows users to book cars or cabs.

2. **Non-functional requirements** These are constraints on the services or functions offered by the system. They include timing constraints, constraints on the development process, and constraints imposed by standards. Non-functional requirements often apply to the system rather than individual system features or services.

The distinction between different types of requirements is not as clear-cut as these simple definitions suggest. A user requirement concerned with security, such as a statement limiting access to authorized users, may appear to be a non-functional requirement. However, when developed in more detail, this requirement may generate other requirements that are clearly functional, such as the need to include user authentication facilities in the system.

This shows that requirements are not independent, and that one requirement often generates or constrains other requirements. The system requirements therefore do not just specify the services or the features of the system that are required; they also specify the necessary functionality to ensure that these services/features are delivered effectively.

Usability:

The system provides a help and support menu in all the interfaces for the user to interact with the system. The user can use the system by reading help and support.

Security:

The system provides username and password to prevent the system from being unauthorized Access. The subsystem should provide a high level of security and integrity of the data held by the system, and only users with valid password and username can login to the webpage.

Availability:

The system is always available in access for 24 hours, 7 days a week. Also, In the occurrence of any major malfunctioning, the system should be available in 1 to 2 working days. So that the business process is not severely affected.

Easy to Use:

Considering the level of knowledge possessed by the users of this system, a simple with quality user interface should be developed to make it easy and to understand and require less training.

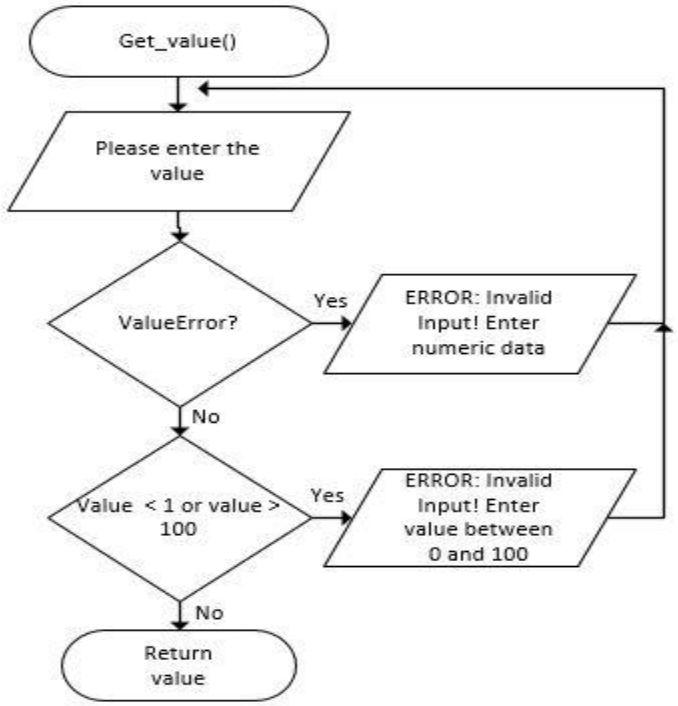
9. Design: -

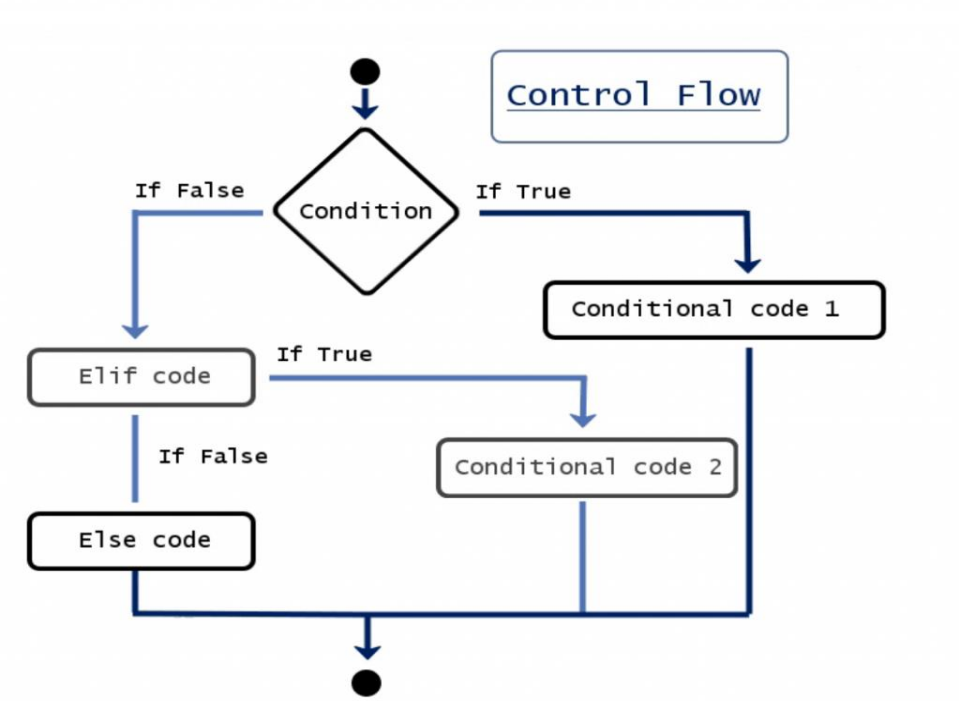
Basic tables program: -

```
Import plotly.graph objects as gofig = go
Figure (data= [go.Table(header=dict(values= ['A Scores', 'B Scores']),
        cells=dict(values= [[100, 90, 80, 90], [95, 85, 75, 95]]))])
fig.show()
```

A Scores	B Scores
100	95
90	85
80	75
90	95

Flow Charts: -





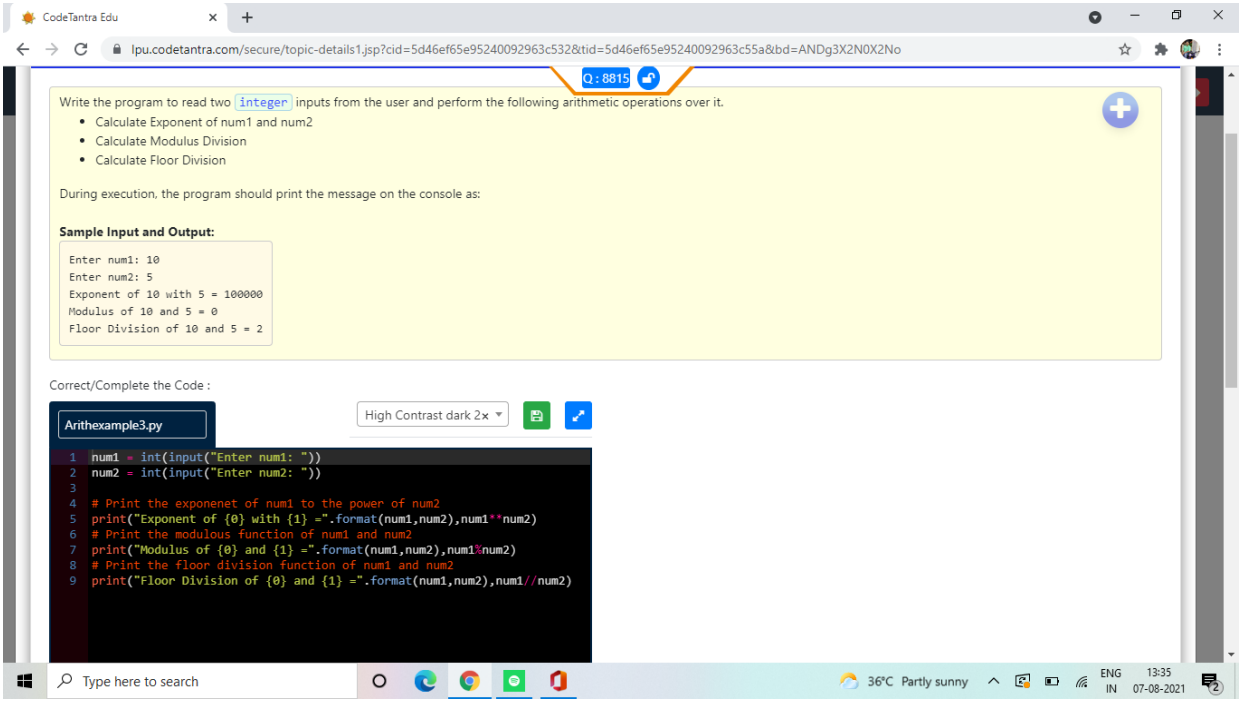
Some Codes Screenshots implemented using python: -

Program to perform addition of two matrixes:

Correct/Complete the Code :

Lab11b.py

```
def makematrix(m,n):
    l=[]
    for i in range(m):
        a=[]
        for j in range(n):
            a.append(int(input("Entry in row: {} column: {}\n".format(i+1,j+1))))
        l.append(a)
    return l
m=int(input("Number of rows for matrix - A, m = "))
n=int(input("Number of columns for matrix - A, n = "))
p=int(input("Number of rows for matrix - B, p = "))
q=int(input("Number of columns for matrix - B, q = "))
if m==p and n==q:
    print("Enter values for matrix - A")
    A = makematrix(m,n)
    print("Enter values for matrix - B")
    B =makematrix(p,q)
    c=[]
    for i in range(m):
        a=[]
        for i in range(q):
            a.append(0)
        c.append(a)
        for i in range(len(c)):
            for j in range(len(c[0])):
                c[i][j]=A[i][j]+B[i][j]
    print("Matrix a =",A)
    print("Matrix b =",B)
    print("Addition of two matrices =",c)
else:
    print("Addition is not possible")
```


CodeTantra Edu
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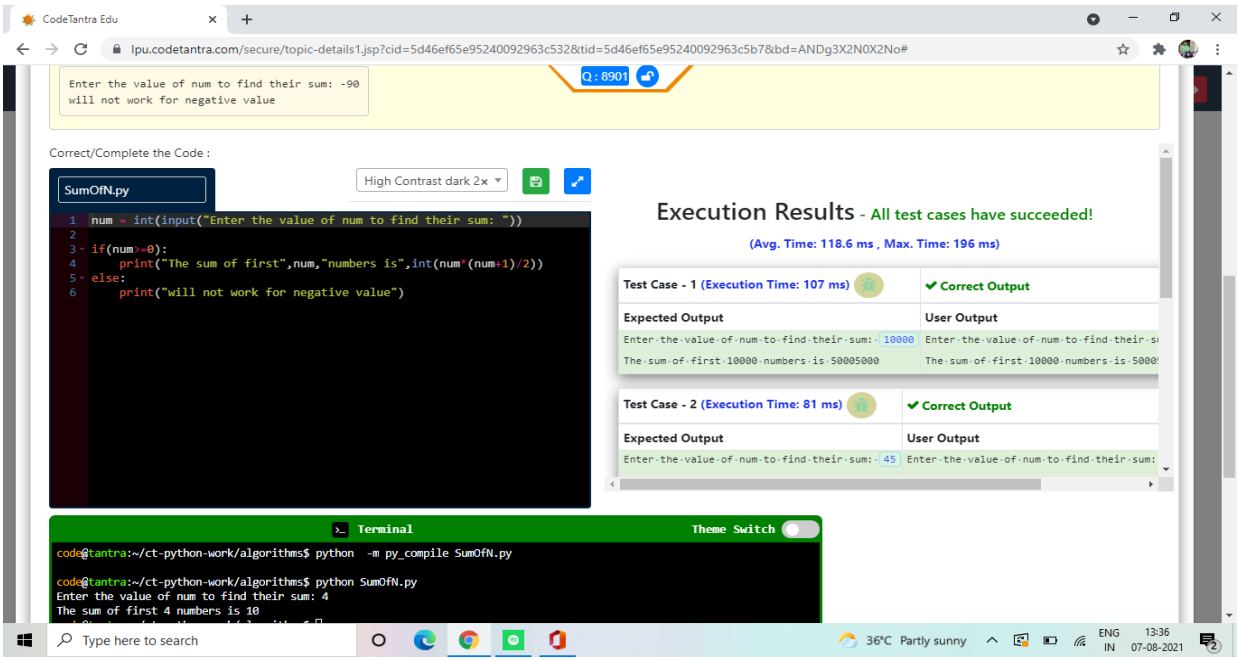
Q : 8815
Write the program to read two integer inputs from the user and perform the following arithmetic operations over it.
Calculate Exponent of num1 and num2
Calculate Modulus Division
Calculate Floor Division
During execution, the program should print the message on the console as:
Sample Input and Output:
Enter num1: 10
Enter num2: 5
Exponent of 10 with 5 = 100000
Modulus of 10 and 5 = 0
Floor Division of 10 and 5 = 2
Correct/Complete the Code :
Arithexample3.py
High Contrast dark 2x
num1 = int(input("Enter num1: "))
num2 = int(input("Enter num2: "))
# Print the exponenet of num1 to the power of num2
print("Exponent of {0} with {1} =".format(num1,num2),num1**num2)
# Print the modulous function of num1 and num2
print("Modulus of {0} and {1} =".format(num1,num2),num1%num2)
# Print the floor division function of num1 and num2
print("Floor Division of {0} and {1} =".format(num1,num2),num1//num2)
Type here to search
36°C Partly sunny
ENG
IN
13:35
07-08-2021



IMPLEMENTATION

The main theme of this work is to create a webpage. It consists of login portal, Booking portal and payment portal. On a total of 2-3 weeks the project is completed.

The primary objective of this project is to implement what we've learnt throughout our course of python programming and use that to develop a Graphical User Interface (GUI) for Online Cab Booking. This project also aims at providing a user-friendly interface to the users to let them easily use the online cab system so that the lack of knowledge in online booking will be achieved. This project will also help in spreading awareness regarding online booking for people around will be aware of different criteria that are included in online booking.

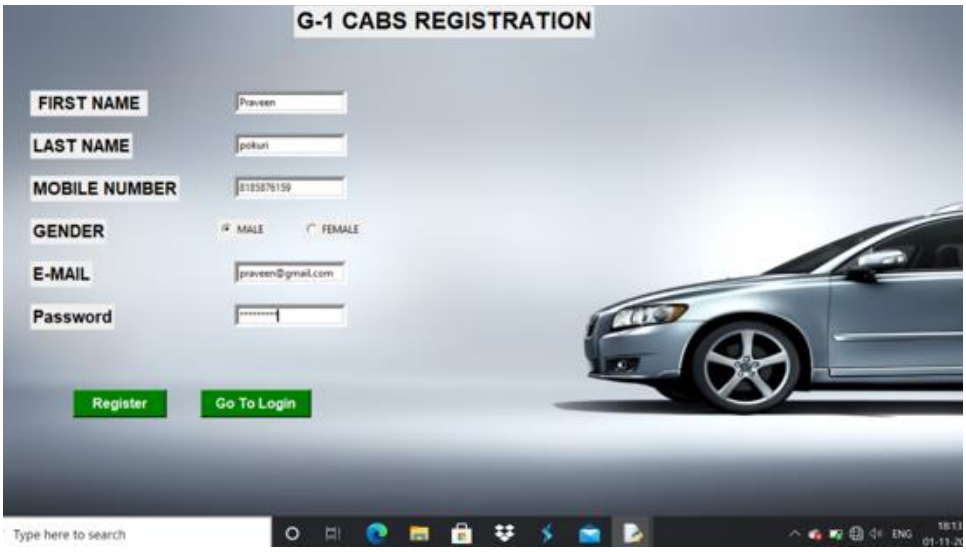
This Online Cab Booking helps people to book the cabs by using their mobiles. They can also pay an amount online also. Now a days most people are booking their cabs on websites such as OLA, UBER, TAPZO etc.

In India, most taxicabs, especially those in Delhi and Mumbai, have distinctive black and yellow liveries with the bottom half painted black and upper half painted yellow. In Kolkata, most taxis are painted yellow with a blue strip in the middle. Private companies operating taxis can have their own liveries but need to get them approved by the government. Now drivers don't need to pay commission.

Screenshots:

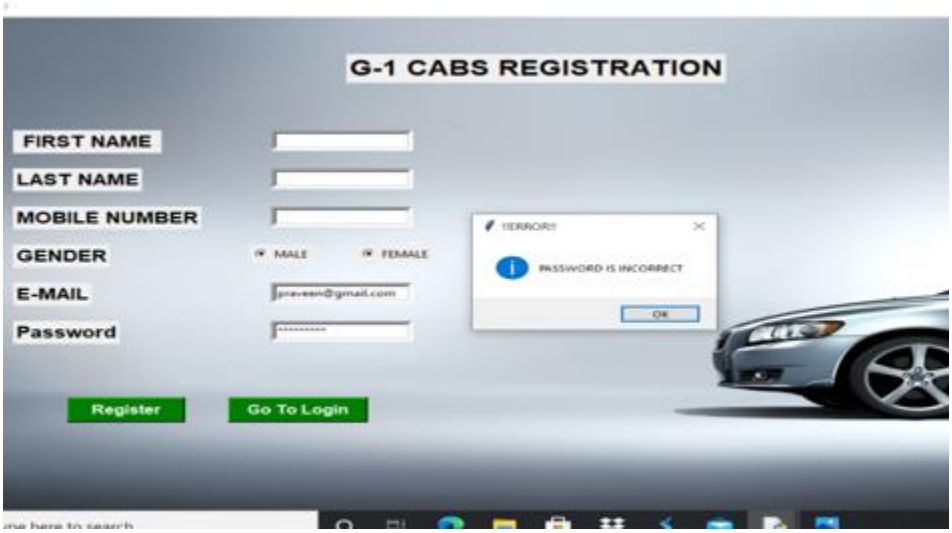
In this page the new users enter their details and password to create their account to book the cab.

This page has fields like first name, last name, mobile number, gender, email, password. Then After registering click on “go to login” button on the registration page which opens a new window for login.



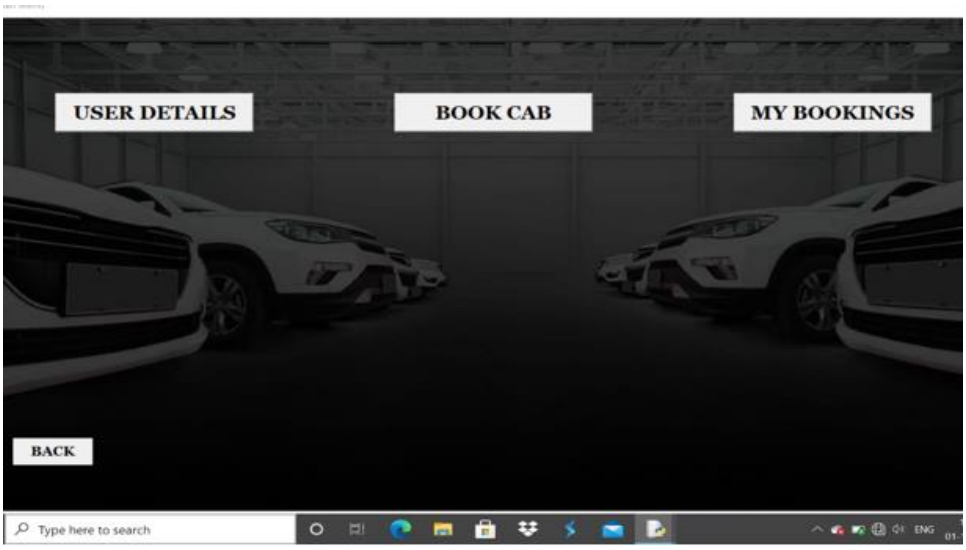
In this page users are supposed to login using their registered email and password correctly. Once they enter correct details and click on login, they are directed to the home page of the cab booking system. user fills these and clicks on register to get enrolled.

If we enter the wrong password, it shows a message or notice written as password is Incorrect.



Booking Page:

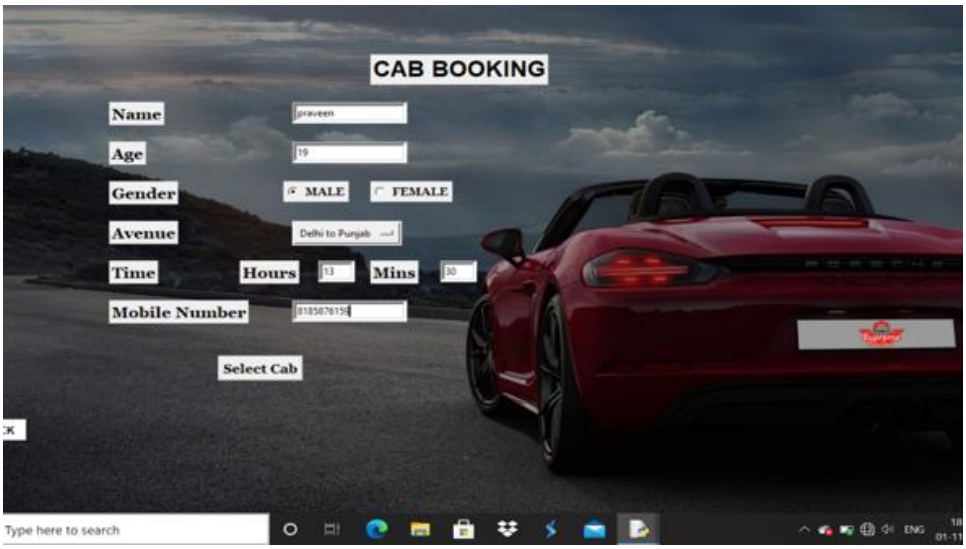
This performs three main operations with the help of buttons one is booking of cab, the second is checking the user details, third is checking the booking details after booking.



This page allows the user to enter the details of the traveler like name, age, gender, avenue, time (with hours and minutes), mobile number.

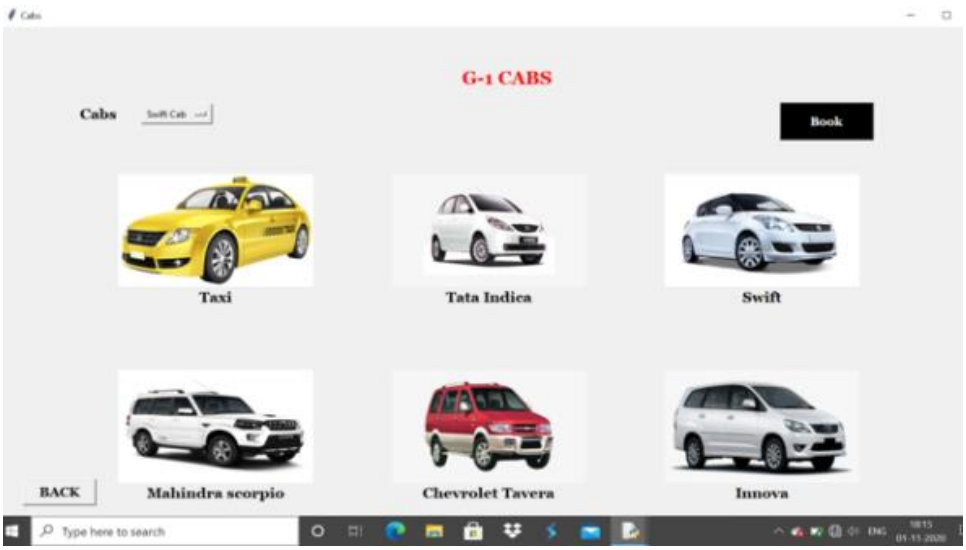
And a button named select cab to go to next window for selecting your required cab and then click on book which makes his booking successful.

The back button destroys the present window and shows the previous window.



Select Cab:

This page contains some of the cabs' names with their images which makes the customer to select the cab easily, so customers need to select on cab and click on book.



Learning Outcomes:

From this course I have learnt how to do coding using Python. And I also learnt how to create a Webpage using Python concepts. Also learnt about the importance of python in future happenings. This course is designed to provide Basic knowledge of Python.

Gantt Chart:

	EK 1	EK 2	EK 3	EK 4	EK 5	EK 6
ables, ement, ctions						
gs, Lists, les						
s, ses, cts,						
ption, Gui, rs						
dard ary, File dling						

Project Legacy:

It is basically a website or an app which is created using python learnings. This app helps to book a Cab for our travel. It contains Login page, Booking Pannel and payment portal. User needs to login into the app with username and password. User can book the car for his Travel according to his choice. There are different kinds of cabs with different types of prices. Users can pay the amount in debit, Upi, credit etc.

Bibliography:

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www.geeksforgeeks.org/python-language-introduction/