Mini Project Report

# Car Booking System using Python Tkinter

## 1. Introduction

### 1.1 Problem Statement

Manual car booking systems are inefficient, error-prone, and time-consuming. This project aims to automate the car booking process using a simple and user-friendly GUI built with Python's Tkinter library.

### 1.2 Objectives

- To design a GUI application for car booking.  
- To capture customer details and car preferences.  
- To validate input and confirm bookings with a summary.

### 1.3 Scope of the Project

This project is suitable for small rental agencies or demo purposes. It covers essential car booking features including data entry, dropdown car selection, date input, and summary confirmation.

## 2. Technology Stack Used

### 2.1 Programming Languages

Python

### 2.2 Libraries/Frameworks

Tkinter (for GUI), tkinter.ttk (for advanced widgets), tkinter.messagebox

### 2.3 Tools and Platforms

Jupyter Notebook, Anaconda, Windows OS

## 3. System Architecture

### 3.1 Architecture Diagram

User Input → GUI Form → Data Validation → Summary Display → Save to File

### 3.2 Module Description

- Input Module: Captures user data.  
- Validation Module: Ensures all fields are filled.  
- Output Module: Shows confirmation and saves data.

## 4. Dataset Description

### 4.1 Source of Data

Data is collected via the user input in the GUI (Customer name, phone number, car model, pickup and return dates).

### 4.2 Data Preprocessing Steps

Basic validation for empty fields. No external dataset or preprocessing required.

## 5. Implementation

### 5.1 Code Flow Description

1. Create and configure GUI window.  
2. Add labels and input fields.  
3. Handle button click to confirm booking.  
4. Validate inputs.  
5. Show confirmation using messagebox and save data to a text file.

### 5.2 Screenshots of Execution

Refer to the screenshots attached in the previous document.

## 6. Results and Analysis

### 6.1 Output Samples

The application successfully takes inputs, validates them, displays a summary, and saves it to a text file.

### 6.2 Performance Evaluation

The application is responsive and functions correctly under normal usage. No crashes or bugs encountered during tests.

## 7. Challenges Faced and Solutions

- Challenge: Input validation.  
Solution: Used conditional checks before confirming bookings.  
- Challenge: Dropdown menu implementation.  
Solution: Used ttk.Combobox from tkinter.ttk.

## 8. Conclusion

The Car Booking System built with Tkinter provides a user-friendly solution for managing car rentals. It simplifies data entry, ensures completeness, and confirms bookings efficiently.

## 9. References

- https://docs.python.org/3/library/tkinter.html  
- https://www.geeksforgeeks.org/python-gui-tkinter/