

# Lovely Professional University



## INT213 (Python Programming) Project Report

**Project:** Mobile Recommender

**Description:** To make a GUI based Mobile Recommender application which recommends smartphones based on choosen specifications.

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# **Acknowledgement**

I would like to express my special thanks of gratitude to my professor Dr. Sukhvir Kaur who gave me the golden opportunity to do this wonderful project on the topic “Mobile Recommender,” which also helped me in doing a lot of research and I came to know about so many new things. This improved my understanding of the Python.

Secondly, I would also like to thank my parents who supported me everytime. Without their support and encouragement, it wouldn't have been possible.

# **1. Introduction**

Mobile Recommender is GUI based application written in Python which lets end user choose the specifications which he/she wants to have in a smartphone and recommend smartphones that come in those choosen specifications.

The application which is GUI based is developed using Python's Tkinter library which is used to develop GUIs using Python. It is the most popular GUI library currently in use with Python and considered as Python's de facto standard GUI.

The application contains more than 50 smartphone data as a list of dictionaries. As the application does not have any separate database and it is designed to work without a internet connection, the data is limited and restricted to current state of list used. It is specifically a frontend demo of what could be called as complete full stack application.

## **2. Modules and Functions**

### **2.1. Modules**

Mobile Recommender is comprised of a single module namely “mobile\_recommender.py” which imports and make use of specifically two python libraries which has been further explained in section 2.1.1 and 2.1.2.

#### **2.1.1. Tkinter**

Tkinter, which has been briefed already in Introduction to the application, is a standard library in python used for creating Graphical User Interface (GUI) for desktop applications. It is very simple to create GUI applications with the help of Tkinter.

I, for one, have used the Tkinter library extensively throught the program. Some of the widely used widget classes and functions of the libraries are Frame, Menu, Label, pack manager, grid manager, etc.

#### **2.1.2. functools**

I have made extensive use of functools library specifically “partial” function.

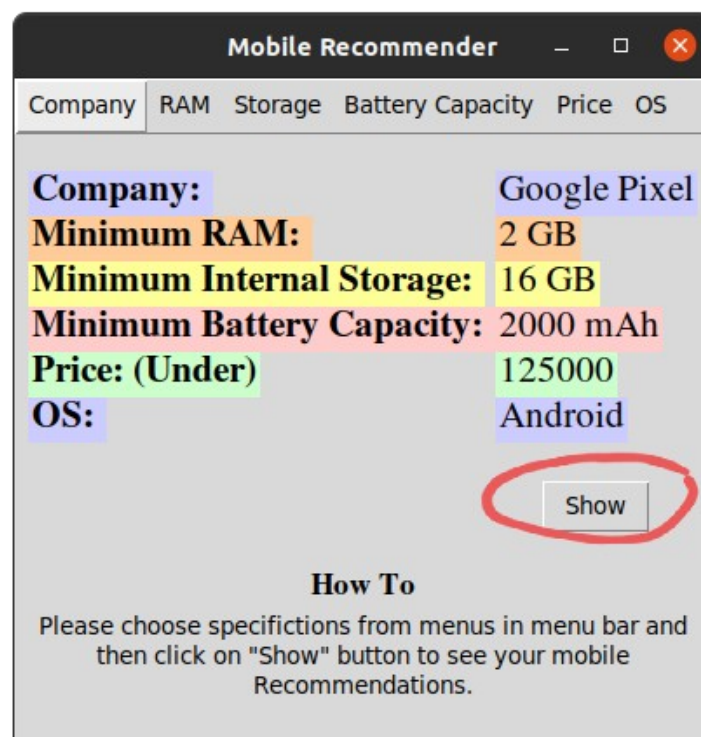
I have used partial function to pass an argument to a “Menu” bound function.

## 2.2. Functions

The essence of whole program lies in three basic functions:

### 2.2.1. “createNewWindow” Function

I have defined this function to create a new scrollable window to show the results on when end user chooses some combinations of specifications. When the end user clicks on the “Show” button as show in the figure 2.1, a new window opens to show results.



**Figure 2.1: Show button in the main interface**

### **2.2.2. Setter Functions**

These are the functions which are bound to Menu commands and execute when the user clicks on one of the Menu commands.

When the user clicks on one of the Menu commands, an argument is passed to the function and the function assigns those arguments to “MobileRecommender” class’s instance variables. Some of the setter functions (methods in this case) are setRam, setCompany, setStorage, setOS, etc.

### **2.2.3. “getSpecification” Function**

I have created this function to filter out those dictionary elements in the list which are chosen as the specification combinations by the end user.

## **3. User Interface (UI)**

Mobile recommender has a simple and user friendly user interface which lets end user conveniently choose the specification and show them results in clear and beautiful design. The whole program is demonstrated using mainly two interfaces.

### **3.1. Main Interface**

The main interface of the application contains a menu bar which contains six drop-down menu cascades. Further, it contains labels to show details on what user has selected. Furthermore, it contains a “Show” button which show the result in a new window and a “How To:” note to instruct how to use the program. It is show in figure 3.1.

### **3.2. Results**

It is the secondary interface which gets on to work when the user clicks “Show” button on main interface. It simply shows filtered out results of smartphones based on the user specification combinations. It is shown in figure 3.2.



Mobile Recommender

Company

RAM

Storage

Battery Capacity

Price

OS

Company:

Google Pixel

Minimum RAM:

2 GB

Minimum Internal Storage:

16 GB

Minimum Battery Capacity:

2000 mAh

Price: (Under)

125000

OS:

Android

Show

How To

Please choose specifications from menus in menu bar and then click on "Show" button to see your mobile Recommendations.

Figure 3.1: Main Interface

Mobile Recommendations	
Model Name:	Google Pixel 4A
Company:	Google Pixel
RAM:	6 GB
Internal Storage:	128 GB
Battery Capacity:	2140 mAh
Price:	Rs. 31999
OS:	Android
Model Name:	Google Pixel 3A
Company:	Google Pixel
RAM:	4 GB
Internal Storage:	64 GB
Battery Capacity:	3000 mAh
Price:	Rs. 30999
OS:	Android

Figure 3.2: Results

## **4. Conclusion**

In conclusion, Mobile Recommender is a great demo of implementation of GUI programming.

It is essential for us to create Graphical User Interface in order to make applications widely available and to make so that they can be used by people who are not so technical. Libraries like Tkinter are great tools to start learning GUI programming.

## 5. References

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