Solent University

Faculty of Business, Law and Digital Technologies

**Making choice based**

**on PhoneDB data**

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Table of Contents

[1. Overview 4](#_Toc152880393)

[2. Project Implementation 6](#_Toc152880394)

[2.1 Project structure 6](#_Toc152880395)

[2.2 Modules/ Functions 7](#_Toc152880396)

[2.2.1 Self-created Module/ function name 7](#_Toc152880397)

[2.2.2 Self-created Module/ function name 7](#_Toc152880398)

[2.2.3 Self-created Module/ function name 7](#_Toc152880399)

[2.2.4 … 7](#_Toc152880400)

[3. GitHub Repository Evidence 8](#_Toc152880401)

Table of Figures

Figure 1 Sample of Project Structure (Andritsch, J., 2022) 6

Figure 2 Code to perform size checks on entities 7

Figure 3 Github commit 8

Index of Tables

Table 1: Requirement Completion 4

# 1. Overview

The aim of the project to aid users in finding the most suitable mobile device. The project allows to process, manage, and analyse device features extracted from the PhoneDB website in the form of a CSV file. PhoneDB website provides technical data for smartphones, tablets, PDAs, and mobile.

The input text file contains 48 columns. Each row in the file represents a device released in 2020-2022 years. Data is represented as text (string dadatype), numbers (xxx datype) and date (xxx datetype) divided by comma. The file has mostly technical specifications such as weight, display or dimensions, and a few marketing data: selling prices in different currencies and regions where device is distributed.

The extracting data from the PhoneDB, analysing it and visualization allows users to save time, money and make the better decisions after revealing existing trends and patterns.

Below is a table summarising what requirement have been achieved.

Table 1: Requirement Completion

|  |  |
| --- | --- |
| **Requirement** | **Status** |
| Load the data from a CSV file into memory using the csv reader function. The path to the file will be specified by the user | Completed |
| Retrieve the model name, manufacturer, weight, price, and price currency for the device(s) based on the oem\_id. | Completed |
| Retrieve the brand, model name, RAM capacity, market regions, and the date when the information was added for device(s) associated with a specified code name. | Completed |
| Retrieve the oem\_id, release date, announcement date, dimensions, and device category of the device(s) based on a specified RAM capacity. | Completed |
| Load data from a CSV file into memory using the pandas module. | Completed |
| Identify the top 5 regions where a specific brand of devices was sold. | Completed |
| Analyse the average price of devices within a specific brand, all in the same currency. | Completed |
| Analyse the average mass for each manufacturer and display the list of average mass for all manufacturers. | Completed |
| Load data from a CSV file into memory. | Completed |
| Create a chart to visually represent the proportion of RAM types for devices in the current market. | Completed |
| Create a chart to visually compare the number of devices for each USB connector type | Completed |
| Create separate charts illustrating the monthly average price trends (in GBP) for devices released in each year from 2020 to 2023. Each chart should focus on a specific year. | Completed |
| Create a visualisation of your selection to showcase information related to device | Completed |

**Status options:** Completed/ Partially Completed/ Not Attempted

*In this section, you should explain the aim and objectives of the project. You should provide a discussion of dataset such as features of the data, data type of each feature etc. You should also detail any interesting observations regarding the data set.*

# 2. Project Implementation

Dataset is loaded by using of CSV reader or pandas module. The path of dataset was provided by the user. CSV reader is used for retrieving device names, while pandas module is used for analytics like top regions or average prices. Matplotlib module is used to visualize the data and reveal trends and patterns.

*A heading should not be followed directly by another heading. There should be some connecting text. Thus, you should briefly describe the structure of this section here. Then, you can explain the detail in the individual section below. Your explanation should be clear, concise and justified.*

#### 2.1 Project structure

The diagram below illustrates the project structure

*Explain the structure of your project. Your explanations should include appropriate detail and terminology.*

*It would be useful to include a diagram showing your project structure. The diagram can be included in this section as a figure or, if it is large, in the appendices and cited in this section.*

*You should ensure that any figures or tables are appropriately label following suitable conventions. Generally, the figure or table is centred, and figure captions are placed below a figure and table captions are placed above a table.*

*The example below shows a figure with a caption.*

|  |
| --- |
| Diagram  Description automatically generated |

Figure 1 Sample of Project Structure (Andritsch, J., 2022)

The example of a figure caption above includes a reference. If an image is taken without any modifications from another source, then it should include a reference as shown in the example above. If the image has been adapted then this should be stated in the caption e.g., Figure 1 – Software Project (adapted from Andritsch, J., 2022)

#### 2.2 Modules/ Functions

Explain the implementation of each **self-created** module/function in your project. You can present each module/function using sub-section topic. More complicated modules/functions should have greater detail whilst smaller and similar functions can be grouped together in your explanation. You may wish to include relevant code snippets to support your explanations. However, you should ensure that you do not simply restate or summarise what is shown in the code but explain how it works (what, how and why).

You should include code snippets as figures with appropriate captions. An example of a code snippet is shown below:

|  |
| --- |
|  |

Figure 2 Code to perform size checks on entities

The code snippet should be short, concise and appropriate formatted. If the code snippet is from another source, then you should also include a suitable reference.

##### 2.2.1 Self-created Module/ function name

Explain the functionality implemented in this module/function. Relevant guidelines mentioned in the previous sections should also be followed here.

##### 2.2.2 Self-created Module/ function name

Explain the functionality implemented in this module/function. Relevant guidelines mentioned in the previous sections should also be followed here.

##### 2.2.3 Self-created Module/ function name

Explain the functionality implemented in this module/function. Relevant guidelines mentioned in the previous section should also be followed here.

##### 2.2.4 …

Explain the functionality implemented in this module/function. Relevant guidelines mentioned in the previous sections should also be followed here.

When you explain in a detail for each module/function a proper example or justification should present. For example, if you implemented your project using main module to control the logical work of your project and utilises the other modules, it may be useful to include an example or two of how the main module utilises the other modules to deliver a function. You may, for example, present this as a diagram or a series of annotated function calls or if you explain your implementation for visualisation, you can discuss how you have derived with specific selection of your own choice for visualisation (what and why). You should include suitable screenshots of the final visualisations.

# 3. GitHub Repository Evidence

A screen shot of your private Git repository. The screen shot need to **clearly show your history of your commit of your project implementation**. You need to click on the clock symbol on the right conner of your repo.

Graphical user interface, text, application, email

Description automatically generated

Figure 3 Github commit

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Sample screen shot of your commit history:

A screenshot of a computer

Description automatically generated