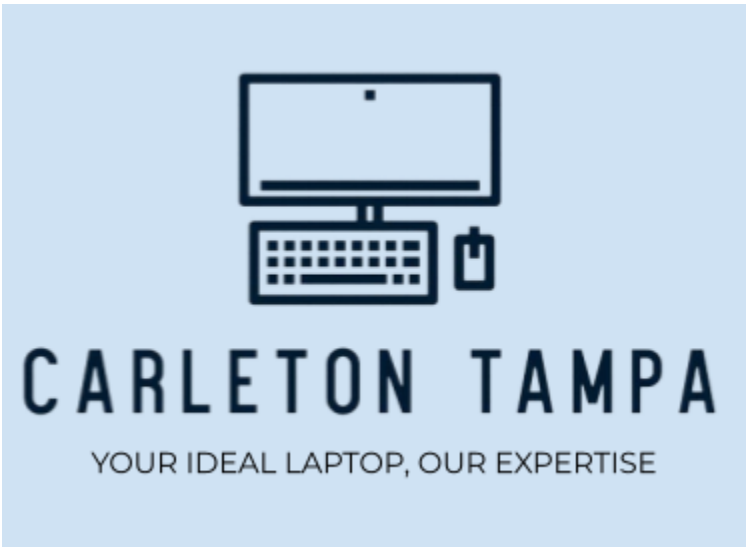
Carleton

Carleton Tampa



Documentation

Carleton College

Authors: Randy Ariza
Jared Arroyo
Mason Moses
Conrado Peña Lemes
Joshua Thompson

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Finishing date: 06/03/2024

Project abstract:

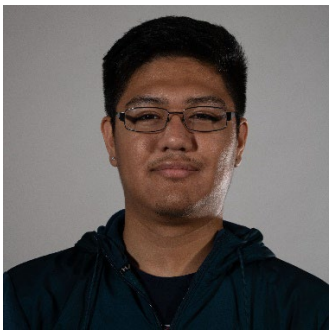
The idea for our project surges from researching datasets, we thought that working with one about laptops would be the most interesting. The reason for this is that the dataset is extensive enough that we would be able to create a website where one would be able to compare and contrast different laptops by means of certain criteria, for example by brand, ram or storage size.

To do this we used an array of different programming languages in order to create a website to achieve what we established before. These languages were Python, CSS and JavaScript and the markup language HTML, in addition to PostgreSQL which we used to create the database where we store all the laptops and where we point our queries to. These queries are meant to return laptops with the terms that the user gives, so for example if the user wants to look for a laptop that has 8GB of RAM, is made by Apple and has a disk space of 256GB, then we create a query with those conditions and send it to the database. Additionally, we used JSON.

Lastly it is important to mention that in order to make the development streamlined we decided to use GitHub to store the entire project, the link for it can be found here.

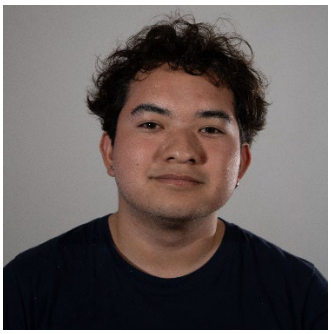
CARLETON TAMPA
YOUR IDEAL LAPTOP, OUR EXPERTISE

Group Participants



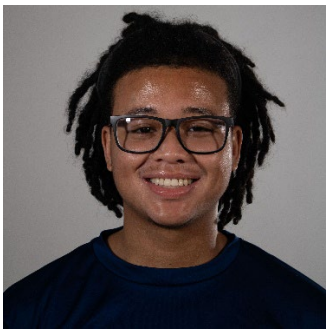
Randy Ariza

Class of ’27



Jared Arroyo

Class of ’26

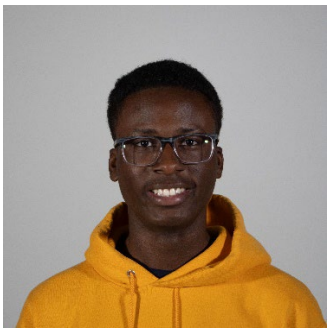


Mason Moses

Class of ‘27

Conrado Peña Lemes

Class of ‘27



Joshua Thompson

Class of ‘27

Information about the dataset chosen:

We've decided to use the following dataset:

- Brand Laptops Dataset
- This is a comprehensive dataset detailing various laptop attributes such as screen size, CPU, RAM, memory, GPU, operating system, weight, and price. There is a limitation to it however, it is the fact that some of these prices are inaccurate as the prices had to be converted from Indian Rupees to US dollars.

User stories:

This is meant to explain the type of user that we expect would want to use our website, to do this we detailed possible users as well as questions that would be answered by our website.

- **User Story #1**: My name is Joseph Smith, and I want to buy a new laptop, but I have a budget. I want to find out which laptops I can buy but also meet my spec requirements.
- **User Story #2**: My name is Inigo Montoya. I am a wealthy aristocrat and need a new computer. Money is not an issue, so I want the best of the best. I want to be able to see which computer has the best parts, no matter the price.
- **User Story #3**: My name is Roberto Ramiréz Martínez de los Rosales. I am looking to buy a computer eventually, but I want to look around at what is available and what could be good to buy. I'm unsure which computers are good, so I want to look at a guide to see which parts suit my needs.
- **User Story #4:** My name is Pablo Martinez and I want to gain insight into how these specifications influence the pricing trends of laptops from different brands and types, specifically in an attempt to discover correlations between hardware features and their impact on the market value of portable computing devices.

User Roles:

In choosing the following dataset, we have two user personas in mind - a user in the market for a laptop and a user curious about how various laptop attributes affect its price.

- **Market User**: The following user will utilize the interface in order to find the 'perfect' laptop for their needs. With our interface, the user can specify the price range and other laptop attributes they may be interested in.

- **Curious User**: We identify the following user as a curious user. This user is pictured as someone curious to see how different aspects of a laptop affect its overall price.

User Questions:

1. What is the "perfect" laptop for me?
2. How does increasing/decreasing RAM affect the price of a laptop?
3. How does the brand or model also affect the price (for computers with very similar specifications)

Website structure breakdown

First and foremost, to visualise the website, go into the folder named "Main-Website", once there run the Python file named "mainWeb.py." The website has 3 main sections the home page which displays the possible laptop specifications that the user can choose from.

There is also an "About us" section which can be accessed by pressing the corresponding button in the header, this takes the user to a page which has our headshots as well as our class year.

Lastly there is the search bar, which allows the user to input whatever search term they choose to use and if there is a laptop (or multiple) that matches that input, it will be displayed.

Folder structure breakdown

The Project has a set of folders that were used to maintain cohesiveness while we were creating the project. Below is a breakdown of what these folders are meant to store.

Root

Here we store the folders "Main-Website" and "Tables" as well as this file, in pdf format, and the .docx version of this file which is meant to make it easy for us to edit it while we are writing it, additionally the README.md file and the CodeReviewTakeaways.md. The README.md file is meant to provide a basic introduction to the whole project and push the reader of it to come to this file if they want more information. CodeReviewTakeaways.md stores the main comments that we got when we did a code review with professor Matthew Lepinski on 05/21/2024.

Main-Website

This is meant to hold all of the functional files for our project that are most in use.

- static: This holds most of the files, as it has both, the many JavaScript and CSS files we run in order to make the website look good and be functional; and the diverse images that we use throughout the website, the logo, the laptops and our headshots.
- templates: this holds all of the HTML files that are needed in order to run the website.
- Additionally, here we hold the file “mainWeb.py” (and a backup of it) which is the file that is used to run our website.

Tables

This stores mainly stores the file (”newCreateTables.sql”) we used to create the PostgreSQL database, additionally it stores an array of tests that were created throughout development to make sure that when we used them in “mainWeb.py” through a Python library called psycopg2, they would work.