Files:

Amenitites_Version2.csv: This file shows which amenities are offered across four specific apartments in College Park, Maryland: Terrapin Row, University View, The Varsity, and South Campus Commons. Each apartment offers a different variety of amenities, so the purpose of this file is to have it all in one place so we can access it when the user is inputting which amenities they would like. In our file we represented an apartment having a specific amenity by using the number 1 as its indicator. For example Terrapin Row has a 1 under the pool amenity, which means the apartment offers a pool for their residents to use.

CP Apartments_Version3.csv: This file contains the room information for every single room in all four of the apartments. The file contains the apartment name, the apartment number, the location, the floor plan, the number of rooms available, and the room code. The purpose of the apartment name column is so that we can distinguish which rooms data belongs to their respective apartment. The apartment number column's purpose is so that after the user filters through the amenities and budget methods they can choose which room number entices them. The purpose of the location and the floor plan is for the user to further filter through the amenities list to eventually see which apartment is best for the user. The purpose of the room code is just another piece of information the user will be able to see when they pick their ideal apartment unit. The overall purpose of the file is so the user can pick their ideal apartment.

Final_project.py: This is our main code, which contains all our classes and methods.

Major Historical Data_Version3.csv: The purpose of this file is so we can implement a seaborn plot, which shows a visual representation of where people typically choose to live based on their major.

Command-line instructions:

1. First start by running the code using python3 final_project.py for Mac or python final_project.py for Windows.

2. It then prints out some information regarding their location about the four apartment buildings in College Park that we focused on. After the information it asks you to enter your name. For example: “Please enter your full name: Lebron James”.
3. It will then show this message “Hi Lebron James! In order to proceed with the rest of the College Park Apartment Portal, we have to check if you meet all the eligibility requirements.” In order for the program to check your eligibility it will ask you whether you contain proof of income and proof of identity. If you answer “yes” to both you will be considered eligible and will allow you to proceed with the questions.
4. It will now ask which major you would fall under. Depending on which major you select, the program will then tell you which two apartments are closest to your major’s buildings. It will then pop up with the historical data for that major in a Seaborn plot.
5. Now is when you will type 1 for yes and 0 for no for a group of questions regarding the user’s amenities preferences. After entering in your preference for each amenity it will tell which of the two apartments contain the amenity.
6. Now it will ask the user to input their ideal budget and based on what they input it will tell them if they can afford the two apartments.
7. Now is when the user has to select which of the apartments they would prefer based on the preferences and filtering they just went through.
8. It is now going to ask the user if they are moving in with other tenants. If selected, yes it will automatically be promoted to a question asking how many other tenants are moving in with you.
9. A filtered version of CP Apartments_Version3.csv will be shown to the user where they can now select a specific apartment, which best fits their needs.
10. After picking a specific apartment unit this is when you will be able to submit an application to sign the lease for the apartment unit you choose. You will be asked to enter your username, your full name, email address, and phone number. If all that is

inputted is valid then they will be promoted with this message, “Thank you, Shish, for submitting your application to University View. We will contact you soon. Once you join our apartment you can make reservations for the amenities we offer.”. If the information is invalid it will ask the user to reinput their answers.

11. After submitting your application you will be asked which of the following amenities, Pool, Study Rooms, or Game Lounge, you would like to reserve. After choosing your amenity you will be told you reserved this amenity for the apartment.

Instructions on how to use program and how to interpret the output of the program:

The overall purpose of our program is to find the ideal apartment based on our user’s preferences in amenities, location, and budget. They will be prompted with a series of questions where they find their filter through preferences in amenities, location, and budget. After given their preferences they will be allowed to apply for a lease and eventually reserve rooms for their chosen apartment. The eventual output of the program is the specific apartment unit the user has selected after going through all the filtering questions and any amenities the user would like reserved.

Attribution Table:

Method/function	**Primary author**	**Techniques demonstrated**
__init__ method	Avi Suri	Sequence unpacking
amenityCheck method	Philip Samuel	Filtering operation on Pandas DataFrames
userBudget method	Shishir Poreddy	Use of a key function with min()

check_eligibility method	Jhemel Atkinson	Conditional Expression
userInput method	Philip Samuel	visualizing data with seaborn
Find_shared_group_apartment method	Jhemel Atkinson	F-strings containing expressions
amenities _rsvp method	Shishir Poreddy	Optional Parameters
submitApplication method	Avi Suri	Regular Expressions