**Psuedocode**

**Property.Java**

Declare instance variable for string property name;

Declare instance variable for string city;

Declare instance variable for double rentalAmount;

Declare instance variable for string owner;

Create a toString method that returns Property object;

Getter method for property name;

Setter method for property name;

Getter method for owner;

Setter method for owner

Getter method for city

Setter method for city;

Getter method for rentalAmount;

Setter method for rentalAmount;

Create a parameterized constructor that takes in property name, city, rent amount, owner, x and y location of property’s plot, width and depth.

Create a second constructor that takes in property name, city, rent amount, owner, default x and y location of property’s plot, width and depth.

**Plot.java**

Declare int for x;

Declare int for y;

Declare int for depth;

Declare int for width;

Create a toString method that returns Plot object;

Create a No-arg Constructor, creates a default Plot with args x=0, y=0, width=1, depth=1

Create a Copy Constructor, creates a new object using the information of the object passed to it.

Create a Parameterized Constructor that takes in values for x, y, depth, width

Create method overlaps that returns true if overlap or false if not

Create variables for plot1 and plot2

Create variables for plot1 x + width and depth

Create variables for plot1 y + width and depth

Create variables for plot2 x + width and depth

Create variables for plot2 y + width and depth

For loop to iterate through plot1 and 2

If plot2 x > plot1 x && plot2 y > plot2 x

Return true;

If plot2 x < plot 1 x && plot 2 y < plot 2 x

Return false;

Create method encompasses that returns true if encompass or false if not

Create variables for plot1 and plot2

Create variables for plot1 x + width and depth

Create variables for plot1 y + width and depth

Create variables for plot2 x + width and depth

Create variables for plot2 y + width and depth

For loop to iterate through plot1 and 2

If plot2 x >= plot1 x && plot2 y >= plot2 x

Return true;

else

Return false;

**ManagementCompany.java**

Create instance variable for int MAX\_PROPERTY;

Create instance variable for int MGMT\_WIDTH;

Create instance variable for int MGMT\_DEPTH;

Create instance variable for double mgmFee;

Create instance variable for string name;

Create instance variable for string tax ID;

Create a  No-Arg Constructor that creates a ManagementCompany object using empty strings and the plot set to a Plot with x, y set to 0 , width and depth set to 10.  
properties array is initialized here as well.

Create a constructor that creates a ManagementCompany object using the passed information.  
plot is set to a Plot with x, y set to 0 , width and depth set to 10  
properties array is initialized here as well

Create a constructor that creates a ManagementCompany object using the passed information.

Create a Copy Constructor that creates a ManagementCompany object from another ManagementCompany object

Create addProperty method 1 that takes in a property object as a parameter

Return a copy of property;

Use for loop to iterate through

Return index where property added

Return -1 if array full

Return -2 if property null

Return -3 if plot is not encompassed

Return -4 if not overlapped

Create add property method 2 that takes in propertyName, city, rent, and ownerName

Use for loop to iterate through

Return index where property added

Return -1 if array full

Return -2 if property null

Return -3 if plot is not encompassed

Return -4 if not overlapped

Create add property method 3 that takes in propertyName, city, rent, and ownerName, x, y, width, depth

Use for loop to iterate through

Return index where property added

Return -1 if array full

Return -2 if property null

Return -3 if plot is not encompassed

Return -4 if not overlapped

Create method header totalRent

Use for loop to iterate through each property and get rentAmount

Add together and return total

Create method header maxRentPropertyIndex

For loop to iterate through each property and compare to find biggest amount

Return biggest amount index

Create method header maxRentPro

For loop to iterate through each property and compare to find biggest amount

Return biggest amount

Create toString method

Return all properties of property in array,

**UML Diagram**

*Diagram

Description automatically generated*

**Screenshot for PlotGFATest**

Graphical user interface, application

Description automatically generated

**Screenshot for PlotTest**

Graphical user interface, text, application

Description automatically generated

**Screenshot for ManagementCompanyGFATest**

Graphical user interface, text, application

Description automatically generated

**Screenshot for ManagementCompanyTest**

Graphical user interface, text, application

Description automatically generated

**\*\*Screenshot for GUI is missing because JavaFX was not able to be added my macbook even after getting help from the tech center.\*\***

**Lessons Learned**

Assignment 4 in CMSC203 was very informational and taught me how to build a management company in Java. I was able to write three different classes that are used including a Property class, Plot class, and ManagementCompany class. I was able to practice with constructors and write different parameters and return values for each method. Overall the plot and property class were crucial to the success of the managementCompany class. I learned a lot during this project and I am glad I was successful. The only thing missing is the GUI since my JavaFX does not work on Macbook.

**Github Screenshot**

**Graphical user interface, text, application

Description automatically generated**

**Checklist**

**Table

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