# Assignment #4 Design Doc – Max Chiu

## Pseudocode

<variable> denotes the value of the variable whose name is in the brackets.

### Property

Fields:

1. City
2. Owner
3. Property name
4. Rent amount
5. Plot

Constructors:

1. No-arg
   1. Sets 0 for rent amt
   2. Creates a default Plot
2. Copy
   1. Copy over all primitives
   2. Create new Plot object with copy constructor
3. Paramterized Constructor, no Plot information provided
   1. Set all values except for plot
   2. Create a default Plot for plot
4. Parameterized Constructor with Plot information
   1. Set all values
   2. Create a Plot with specified values for a plot

Methods:

1. Getters
   1. City
   2. Owner
   3. Property name
   4. Rent amount
2. Setters
   1. Plot
   2. City
   3. Owner
   4. Property name
   5. Rent amount
3. To string
   1. Prints out:
      1. Property Name: <name>
      2. Located in <city>
      3. Belonging to: <owner>
      4. Rent Amount: <rentAmount>

### Plot

Fields:

1. X
2. Y
3. Width
4. Depth

Constructors:

1. No-arg
   1. Sets x and y to 0
   2. Sets width and depth to 1
2. Copy
   1. Copies all the primitives
3. Parameterized Constructor
   1. Sets all values to what was passed in

Methods:

1. Overlaps
   1. The input rectangle will be referenced as p and the other rectangle will be referenced as a
   2. P’s left side must be to the left of a’s right side
   3. P’s right side must be to the right of a’s left side
   4. P’s top side must be above a’s bottom side
   5. P’s bottom side must be below a’s top side
   6. If all of those not true at the same time, then it does not overlap
2. Encompasses
   1. The input rectangle will be referenced as p and the encompassing rectangle (outside rectangle) will be referenced as a
   2. P’s left side must be to the right of a’s left side
   3. P’s right side must be to the left of a’s right side
   4. P’s top side must be below a’s top side
   5. P’s bottom side must be above a’s bottom side
   6. If all of those are not true at the same time, then it is not encompassing
3. Setters
   1. X
   2. Y
   3. Width
   4. depth
4. Getters
   1. X
   2. Y
   3. Width
   4. depth
5. To string
   1. Prints out:
      1. Upper left: (<x>,<y>); Width: <width> Depth: <depth>

### PropertyManager

Fields:

1. MAX\_PROPERTY
2. mgmFeePer
3. name
4. properties
5. taxID
6. MGMT\_WIDTH
7. MGMT\_DEPTH
8. Plot

Constructors:

1. No-arg
   1. Intializes strings to empty strings
   2. Sets a plot with x and y = 0, width and depth = 10
2. Copy
   1. Copies all primitives and strings
   2. Creates new Plot objects with copy constructor
3. Parameterized Constructor
   1. Sets all values to what was passed in
   2. Creates a plot with x and y =0, width and depth = 10
4. Parameterized Constructor /w Plot parameters
   1. Sets all values to what was passed in
   2. Creates a plot with what was passed in

Methods:

For add property,

* Return -1 if array is full
* Return -2 if the property object passed in is null
* Return -3 if the management company does not encompass the property plot
* Return -4 if property plot overlaps ANY property in array
* Otherwise return the index of the array where the property was added.

1. addProperty – property
   1. copies the property that was passed and adds the copy to properties
2. addProperty – property values
   1. creates a new property with values and a default plot passed in and adds it to properties
3. addProperty – property values /w plot values
   1. creates a new property with values and adds it to properties
4. displayPropertyAtIndex
5. getters
   1. MAX\_PROPERTY
6. maxRentProp
   1. loop through properties array
      1. keep track of property with maximum rent amount
   2. Return property with maximum rent amount
7. maxRentPropertyIndex
   1. loop through properties array
      1. keep track of property with maximum rent amount
   2. Return index of property with maximum rent amount
8. totalRent
   1. loop through properties array
      1. keep a sum of the rent amount
   2. Return sum
9. to string
   1. Displays the toString of all the properties in properties