COW – Classes with Arrays

Level 1

Complete the following methods in the class called Group:

Name: Group (constructor)
Input: Variables – Person [] people
Output: none
Action: takes in and sets the initial variable values

Name: getPeople
Input: none
Output: Person []
Action: returns the array of people in the group

Name: printList
Input: none
Output: none
Action: prints out all the info on each person in the Group by using the toString method of each Person object in the array

Name: toString
Input: none
Output: String
Action: prints out the names of everyone in the group by calling the toString method on each Name object stored in each person object in the array. Then returns a String that contains the names of everyone in the group separated by a carriage return (“\n“) with a carriage return at the end included

Complete the following methods in the class called Polygon:

Name: Polygon
Input: Point [] thePoints, Color theColor
Output: nothing
Action: a constructor that takes in the initial values of the class variable

Name: getPoints
Input: nothing
Output: Point[] thePoints
Action: returns thePoints

Name: paint
Input: Graphics
Output: nothing
Action: draws the polygon to the screen by having each point draw itself.

Level 2

Complete the following methods in the class called Group:

Name: printAllWithSurname
Input: String lastName
Output: String
Action: prints out the full name of everyone with the specified last name. Then returns a String that contains the names of everyone with that last name separated by a carriage return (“\n“) with a carriage return at the end included

Name: printAllWithFirstName
Input: String firstName
Output: String
Action: prints out the full name of everyone with the specified first name. Then returns a String that contains the names of everyone with that first name separated by a carriage return (“\n“) with a carriage return at the end included

Name: printThoseOnStreet
Input: String streetName
Output: String
Action: prints out the full name of everyone who lives on the specified Street. Then returns a String that contains the names of everyone that live on that street separated by a carriage return (“\n“) with a carriage return at the end included

Complete the following methods in the class called Polygon:

Name: moveRight
Input: int amount
Output: nothing
Action: moves the polygon to the right by the specified amount

Name: moveLeft
Input: int amount
Output: nothing
Action: moves the polygon to the left by the specified amount

Name: moveUp
Input: int amount
Output: nothing
Action: moves the polygon up by the specified amount

Name: moveDown
Input: int amount
Output: nothing
Action: moves the polygon down by the specified amount

Level 3

Complete the following methods in the class called Group:

Name: printThoseInState
Input: String state
Output: String
Action: prints out the full name of everyone who lives on the specified state. Then returns a String that contains the names of everyone with that live in that state separated by a carriage return ("\n") with a carriage return at the end included

Name: printThoseBornInYear
Input: int year
Output: String
Action: prints out the full name of everyone who was born in the specified year. Then returns a String that contains the names of everyone born in that year separated by a carriage return ("\n") with a carriage return at the end included

Name: printThoseBornInMonthOf
Input: String birthMonth
Output: none
Action: prints out the name of everyone born in the specified month. Keep in mind that month is stored as an int in Date and a String description is passed in

Complete the following methods in the class called Polygon:

Modify the paint method of the Polygon class so it does the following:

Name: paint
Input: Graphics
Output: nothing
Action: draws the polygon to the screen by having each point draw itself **as well as** drawing lines between each successive point. Hint – you will have to cast the x and y values as ints when you pass them to drawLine.

Name: getPerimeter
Input: nothing
Output: double perimeter
Action: calculates the distance of the perimeter of the polygon.

Level 4

Complete the following methods in the class called Group:

Name: compareTo
Input: Group other
Output: integer
Action: Compares this group with the other group passed in based on size. If both groups have the same number of people, then a zero is returned. If this group has more people, then a positive number is returned. If the other group has more people, then a negative number is returned.

Name: isInGroup
Input: Person them
Output: boolean
Action: returns whether or not the person is in the group

Complete the following methods in the class called Polygon:

Name: reflectAcrossX
Input: int x
Output: nothing
Action: reflects the Polygon across the vertical line that goes through x.

Name: reflectAcrossY
Input: int y
Output: nothing
Action: reflects the Polygon across the horizontal line that goes through y.

Name: reflectAcrossYequalX
Input: nothing
Output: nothing
Action: reflects the Polygon across the diagonal line y=x.

Level 5

Complete the following methods in the class called Group:

Name: printThoseWithAnInterestIn
Input: String interest
Output: String
Action: prints out the name of everyone who has the interest passed in the interest passed in. Then returns a String that contains the names of everyone who has that interest separated by a carriage return (“\n“) with a carriage return at the end included

Name: equals
Input: Group other
Output: boolean
Action: returns whether or not the same people are in each group. You may assume that the people are in alphabetical order

Complete the following methods in the class called Polygon:

Name: stretchHorizontally
Input: double multiplier
Output: nothing
Action: dilates the Polygon horizontally so that it becomes wider by the given multiplier (ie – multiply all x values by multiplier)

Name: stretchVertically
Input: double multiplier
Output: nothing
Action: dilates the Polygon vertically so that it becomes taller by the given multiplier (ie – multiply all y values by multiplier)

Name: dilate
Input: int x, int y, double multiplier
Output: nothing
Action: dilates the Polygon around (x, y) by the given multiplier. Hint – when you stretched vertically and horizontally, you dilatated around (0, 0)

Level 6

Complete the following methods in the class called Group:

Name: printInZipCode
Input: 5 digit zip code
Output: none
Action: prints out the name of everyone who lives in the given 5 digit zip code. Then returns a String that contains the names of everyone in that zip code separated by a carriage return (“\n“) with a carriage return at the end included.

Name: printAllOlderThan
Input: int numYears, MyDate currentDate
Output: none
Action: prints out the name of everyone who is older than the numYears passed in given the current MyDate. Then returns a String that contains the names of everyone older than that date separated by a carriage return (“\n“) with a carriage return at the end included.

Complete the following methods in the class called Polygon:

Name: rotate
Input: int x, int y, double angle
Output: nothing
Action: rotates the Polygon around (x, y) by the given angle