Due date: Apr 28, 11:59 PM

Project 2 Phase 3

Implement following requirement for the phase 3 of project 2.

Part 12, Write a function call CreateDynamicShapeArray(filename), which takes a filename contains information of Shape. Then return dynamic array of Shape. (Write in the main.cpp)

The input file format is as follows:

```
3
Triangle 2 3 (1,2) 60
Rectangle (4,4) 6 7
Circle (6,7) 5
```

a. The first line contains the total number of shapes in the file.
b. The first word of each following line is the name of the shape.
c. If the shape is a triangle, the edge lengths of the two sides (a and b), the vertex point d. between the two edges, and the angle between the two edges are provided in that order.
e. If the shape is a rectangle, the vertex point, length, and width are provided in that order.
f. If the shape is a circle, the center point and radius are provided in that order.

Please use the given shape.txt file to test your code before submission. I will use multiple files with the same format to test your program as well.

Part 13, Write a function call MaxArea(DynamicArray), which takes a DynamicArray, and return the maximum area of shape in given DynamicArray. (Write in the main.cpp)

Part 14. Write Your own test main function, and implement following.

a. Keep user enter name of file, and create DynamicShapeArray use CreateDynamicShapeArray() function.

b, Print every shape detail in the newly created dynamic shape Array, and find the Max area shape from the dynamic shape Array, then print it out.

c, Repeat step a and b until user enter “stop”.

Part 15: Implement separate compilation for phase 1, create a makefile for the phase 2.

Final file list:

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```
Shape.h
Shape.cpp
Triangle.h
Triangle.cpp
Rectangle.h
Rectangle.cpp
Circle.h
Circle.cpp
Point.h
Point.cpp
Edge.h
Edge.cpp
DynamicArray.h
DynamicArray.cpp
Main.cpp
makefile
```

Every team member have to attend project interview, and Project credit will be earned if and only if the student passes the interview.

Point distribution:

```
Phase 3: 25 pt
Interview: 25 pt
```