CS1428 Lab 8: Fall 2020

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Lab Section: L 17

Type your name at the top of this sheet. Answer the following questions and turn in this sheet before the due date. You may use the pre-lab, your book, or internet resources to assist you.

If you need more help, you can attend a tutoring session. Visit the following link: https://cs.txstate.edu/resources/labs/tutoring/

Visit https://userweb.cs.txstate.edu/~js236/cs1428/c-ides-for-cs1428.html for instruction on setting up a Development Environment (like CodeBlocks) to be able to complete the coding portion.

1. (8 pts) Identify the following items and write them in the appropriate spaces provided below. Use the choices provided below:

a) Function call **b**) Return Statement **c**) Function Prototype **d**) Function Definition

```
float add(float,float);   1) [c]
int main() {
  float a,b,c;
  a = 2;
  b=4;
  c = add(a, b);    2) [a]
  return 0;
}

float add(float g, float h) 3) [d] {
  return g + h;     4) [b]
}
```

2. (12 pts) What is the output of the following snippet?

```
void doubleEven(int value){
  cout << value << " " << (value * 2) << endl;
}

void tripleOdd(int value){
  cout << value << " " << (value * 3) << endl;
}

int main(){
  int num;
  for (num = 1; num < 7; num++){
    if(num % 2 == 1)
      tripleOdd(num);
    else
      doubleEven(num);
  }
  return 0;
}
```

Output:

value 3
value 4
value 9
value 8
value 15
value 12

3. (50 pts) A main function is provided for you on TRACS. Modify the program to create a rectangle simulator by adding the following **four functions**:

- **int getArea(int, int) -** Takes width and height as parameters and computes the area of the user's rectangle and returns the result.
- **int getPerimeter(int, int)** – Takes width and height as parameters and computes the perimeter of the user's rectangle and returns the result.
- **void printPicture(int, int, char)** – Takes width, height and the symbol the user entered as parameters and draws the user's rectangle using the user's symbol.
- **bool isValidSideLength(int)** – Takes an integer as a parameter representing the width or height. Returns true if the number is between 1 and 10, false otherwise.
- Do not modify the main function. Write the functions such that they work in the code provided

Sample Output:

Please enter the following
Width: 10
Height: 3
Desired symbol for picture: #
Perimeter: 26
Area: 30
Picture of your rectangle:
##########
##########
##########
Would you like to print another picture? (Y or N): y
Please enter the following
Width: 12
ERROR: Sides must be between 1 and 10.
Enter the width: 9
Height: 2
Desired symbol for picture: *
Perimeter: 28
Area: 45
Picture of your rectangle:
****
****
Would you like to print another picture? (Y or N): n

WRITE your name in the authorship comments at the top of your program.
UPLOAD this pdf with your answers filled in and your source code as lab8.cpp to Canvas.