CS163/164 – Classes, Objects, Methods, Loops in Class Activity

Name(s): _____

1. Analyze the classes presented below to answer the following questions:
   1.1. Does the class MessagesAndMenu store any data/has instance variables?
   1.2. What does the method MessagesAndMenu do?
   1.3. What does the method end do?
   1.4. What does the method menu do?
   1.5. What does the method read do?
   1.6. What does the TestLoopMessages class do?
   1.7. Where the MessagesAndMenu class is used? What is the name of the object created?
   1.8. What this line of code does: int op = obj.menu();?
2. Implement the method oddNumbers.
3. Implement the method exponentbyMultiplication.

```
import java.util.Scanner;
public class MessagesAndMenu {
    private Scanner scn;

    public MessagesAndMenu() {
        scn = new Scanner(System.in);
    }
    public void end(){
        System.out.println("Good bye!");
    }
    public int menu(){
         System.out.println("Choose one of those options:");
         System.out.println("(0) Exit");
         System.out.println("(1) Generate 100 first even numbers");
         System.out.println("(2) Generate 100 first odd numbers");
         System.out.println("(3) Exponent by Multiplication");
         System.out.println("Select your choice: ");
         return scn.nextInt();
    }
    public int read(){
        System.out.println("Enter a number: ");
        return scn.nextInt();
    }
}

public class TestLoopMessages {
    public static void main(String args[]){
        MessagesAndMenu obj = new MessagesAndMenu();
        int op = obj.menu(); //1
        while(op!= 0){ //condition
            if(op == 1){
                String msg = evenNumbers();
                System.out.println(msg);
            }
            else if(op == 2){
                //call oddNumbers method
                String msg2 = oddNumbers();
                System.out.println(msg2);
            }
            else{
                //call exponentByMultiplication method
```

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```
            }
            op = obj.menu();
        }
        obj.end();
    }

    public static String evenNumbers(){
        String msg = "";
        for(int i = 0; i < 200; i+=2){
            msg += i + " ";
        }
        return msg;
    }
    /*
    Method oddNumbers
    Generates the 100 first odd numbers
    @return String with the 100 first odd numbers
            separated by a space
     */

    public static String oddNumbers(){
        String msg = "";
        //generate the 100 first even numbers




        return msg;
    }

    /*
    Method exponentByMultiplication
    Calcutes the exponent by doing multiplications
    For example, when 2 is multiplied thrice by itself,
    it is expressed as 2 × 2 × 2 = 8. Here, 2 is the base,
    and 3 is the power or exponent.
    @param base
    @param exponent
    @return a value which is the base in the power of exponent
     */
    public static int exponentByMultiplication(int base, int exponent){
        //generates the base in the power of exponent
        //using multiplication







        return 0;
    }
}
```