Summer Assignment 2021 - 2022 · AP Computer Science A

Website: https://codehs.com/go/3E180
Section Code: 3E180

Welcome to AP Computer Science A. I am looking forward to an exciting school year of teaching Computer Science with every single one of you. As a college level course, AP Computer Science A is both challenging and rewarding. To get ready for the course, students are asked to complete the following assignments from the website before the first day of school. All work will be checked. We will be checking your work throughout the summer and reviewing the material throughout the year for use in our final project. There will also be a class survey when you come back so I can gauge what skills you bring to our course. Come to class the first day of school with your assignment completed and ready with any questions. I am excited to be working with all of you in the upcoming school year.

Please only complete Unit 1 (Intro to Programming with Karel the Dog). This unit will introduce you to the basic concepts of Java using the codehs website. You have the option of programming using drag and drop blocks or switching into text mode for pure Java for some lessons.

At the end of this unit you are challenged to complete the following (make sure you use an online java compiler such as https://www.tutorialspoint.com/compile_java_online.php but there are many options you can choose from).

1. Type in the following program. Compile and run the program. When the program opens, press the Print Scrn button on your keyboard. This will take a "snapshot" of what is on your screen at the moment (think of it as a copy the screen, like you would press copy when you highlight text in Word.) Paste the image into a word document and print out the display.
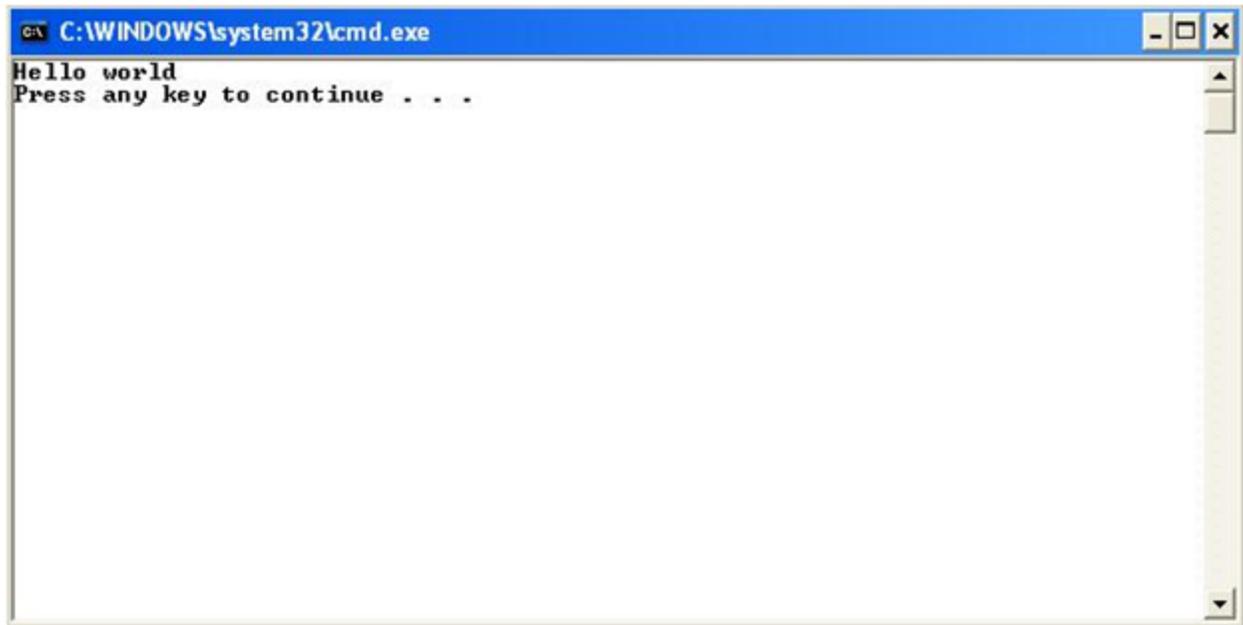
```
public class SummerAssignmentProgram1
{

public SummerAssignmentProgram1()
{
System.out.println("Hello world");
}

public static void main(String args[])

{
SummerAssignmentProgram1 app=new SummerAssignmentProgram1();
}
}
```

When finished, your code should look like the following:

```
C:\WINDOWS\system32\cmd.exe                                        _ □ ×
Hello world
Press any key to continue . . .
```
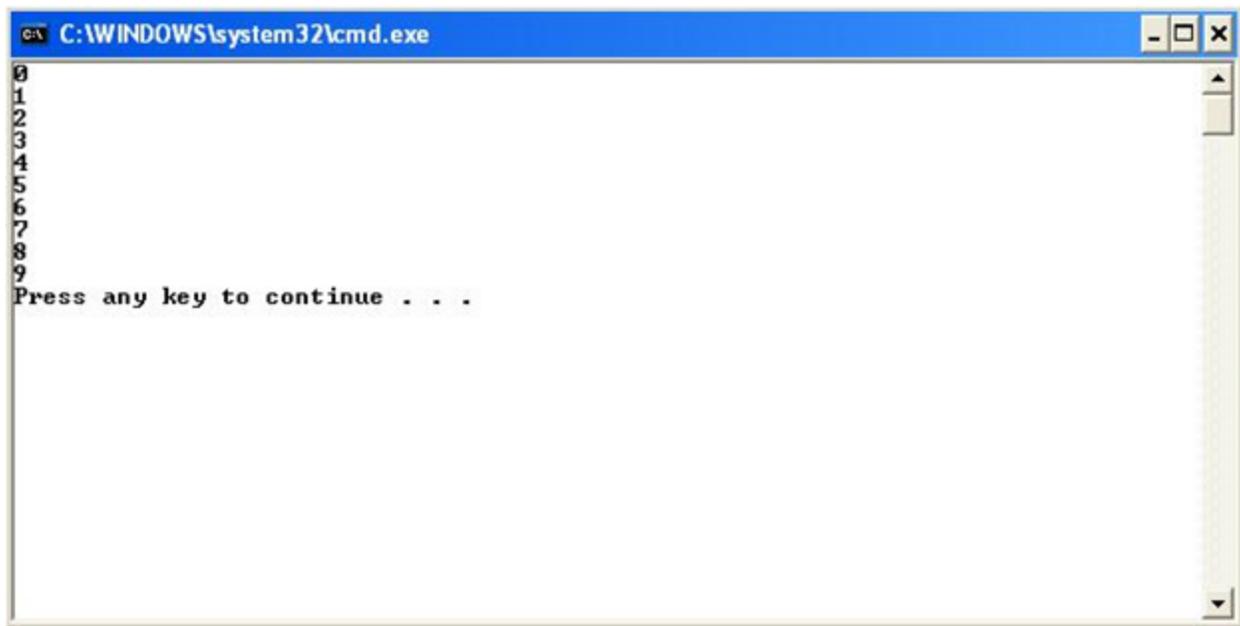
2. public class SummerAssignmentProgram2
{
public SummerAssignmentProgram2()
{
for(int x=0;x<10;x++)
System.out.println(x);
}

public static void main(String args[])

{
SummerAssignmentProgram2 app=new SummerAssignmentProgram2();

}
}

When finished, your code should look like the following:

```
C:\WINDOWS\system32\cmd.exe                              - □ ×
0
1
2
3
4
5
6
7
8
9
Press any key to continue . . .
```

3. Using the code from above as a template, write a program, in the simplest way possible, that will output the following. You are allowed no loops when you write the program.

```
*
**
***
****
*****
```

4. Rewrite the program above, but you are limited to the following two output statements. You are only allowed the following two output statements:

System.out.print("*");
System.out.println();

//usable only once
//usable only once

Your code must use 2 loops and cannot have any other output statements than the two listed above. You can have no more than the two output statements that are shown above.

Important things to keep in mind:
   1. Syntax is important!!! Java is a case sensitive language, so a variable defined as XXYY is different from XyXy.

   2. The // are your way of commenting lines in your programs.

3. Unlike Pascal, Strings use double quotes not single quotes.

4. The braces { and } are the equivalent of begin and end in Pascal.

5. For now, the only changes in code should take place in the area between the two braces shown below.

```
public class SummerAssignmentProgram3
{
public SummerAssignmentProgram3()

{
//Put Your Code Here! Don't change anything else.

}

public static void main(String args[])
{
SummerAssignmentProgram3 app=new SummerAssignmentProgram3();
}
}
```

6. Here is an example of a nested for-loop structure. The word for and int must be all lower case. int is a variable type and is shorthand for Integer.

```
for(int x=0; x< 100; x++)
{
for(int y=0;y<100;y++)
{

}
}
```

7. You will only need semi-colons at the end of your System.out.println() or System.out.print() lines of code.

This concludes this lesson. Have a great summer!