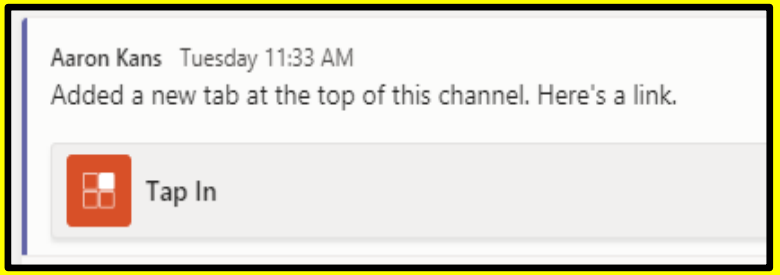
CD/CN4001: Topic 4 Lab

ON CAMPUS

Tap in* with your ID card in a *UEL lab

REMOTE

Click on the Tap in tab in the General channel of the Teams site



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Click on the Week 4 block of your Moodle Site

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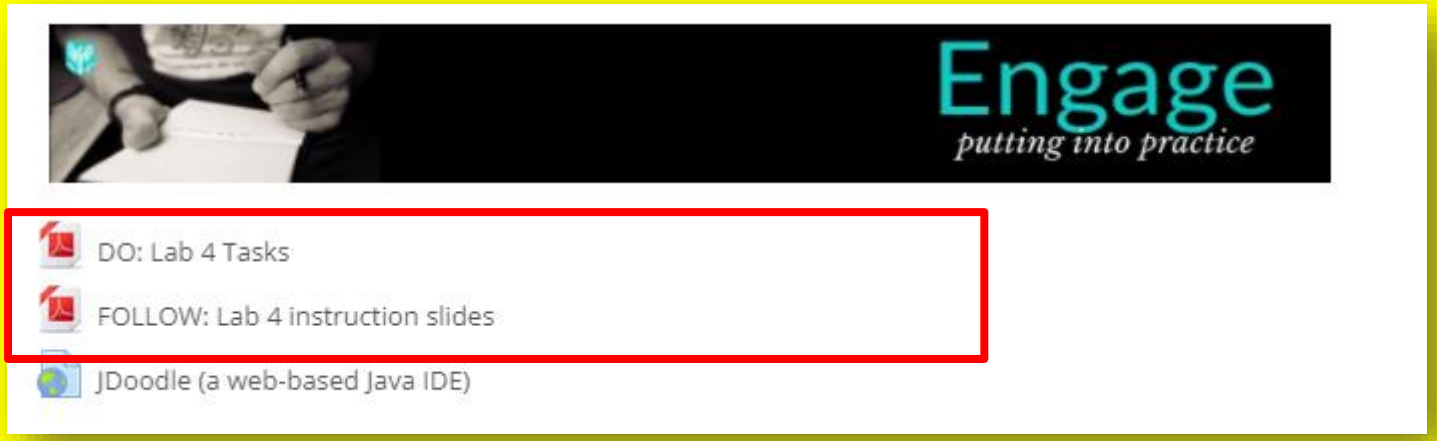

Open the lab 4 tasks/instruction slides

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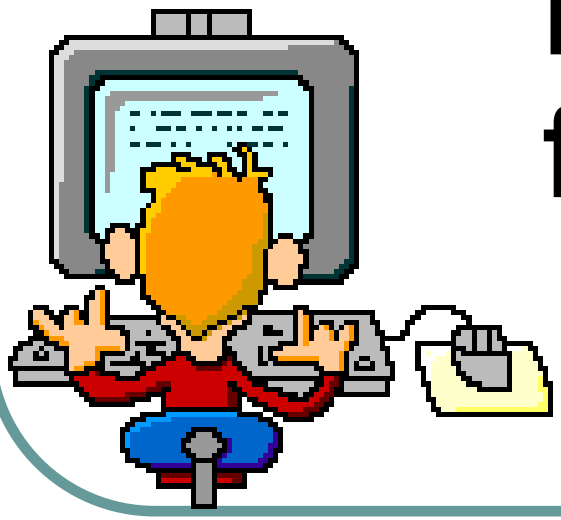
NOW – let's tackle the practical tasks for this lab.



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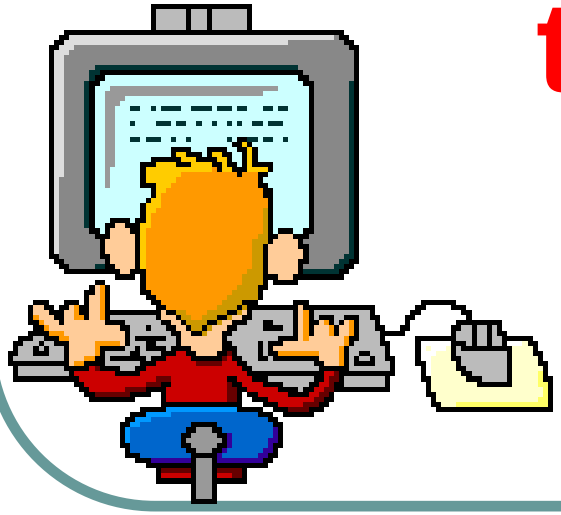
During this lab we will develop two applications



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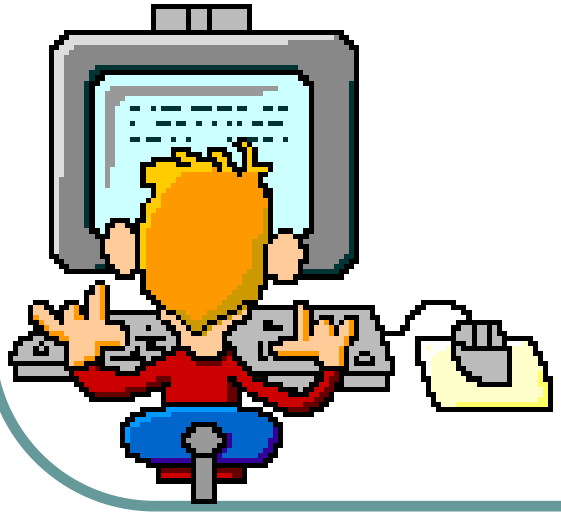
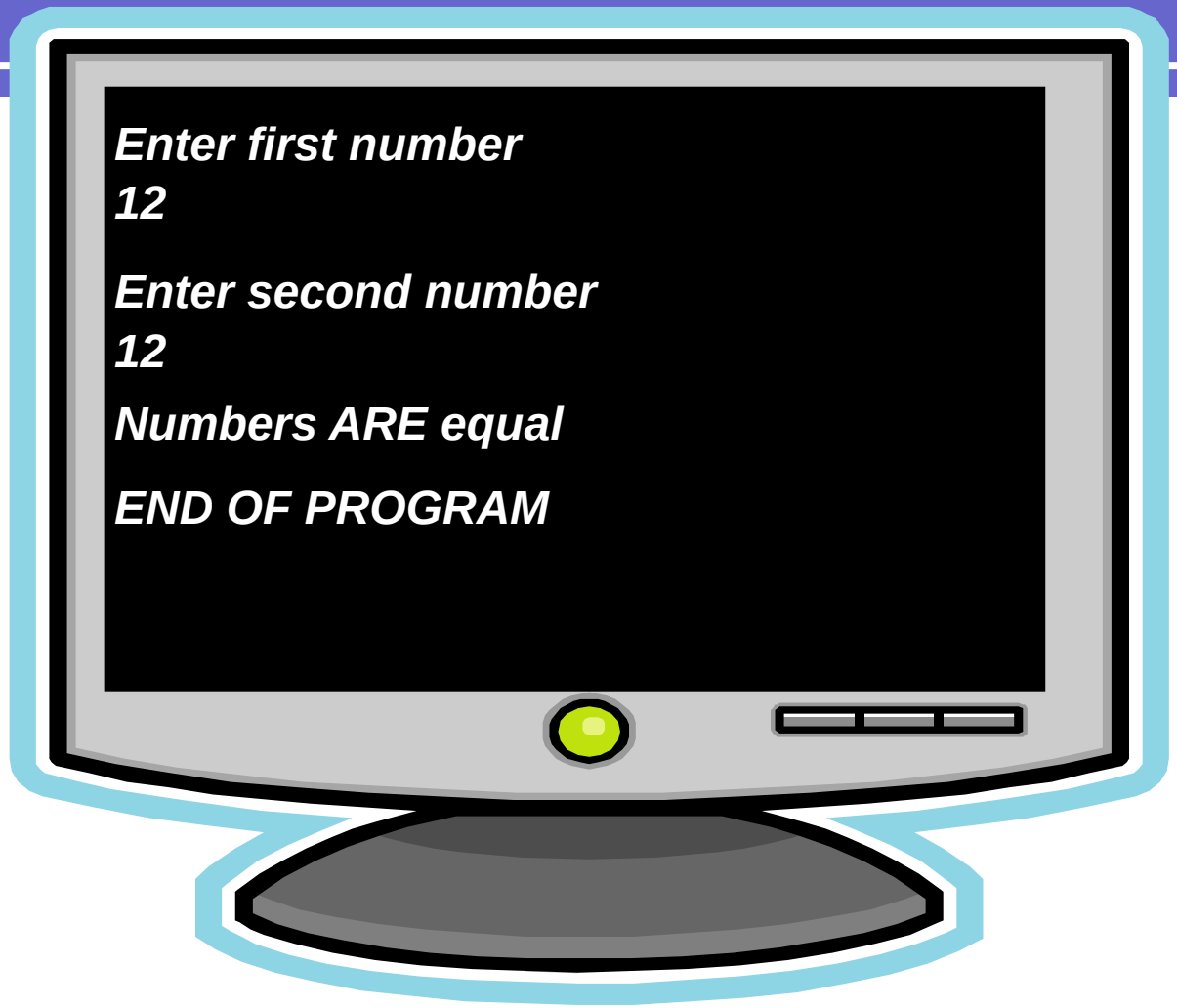
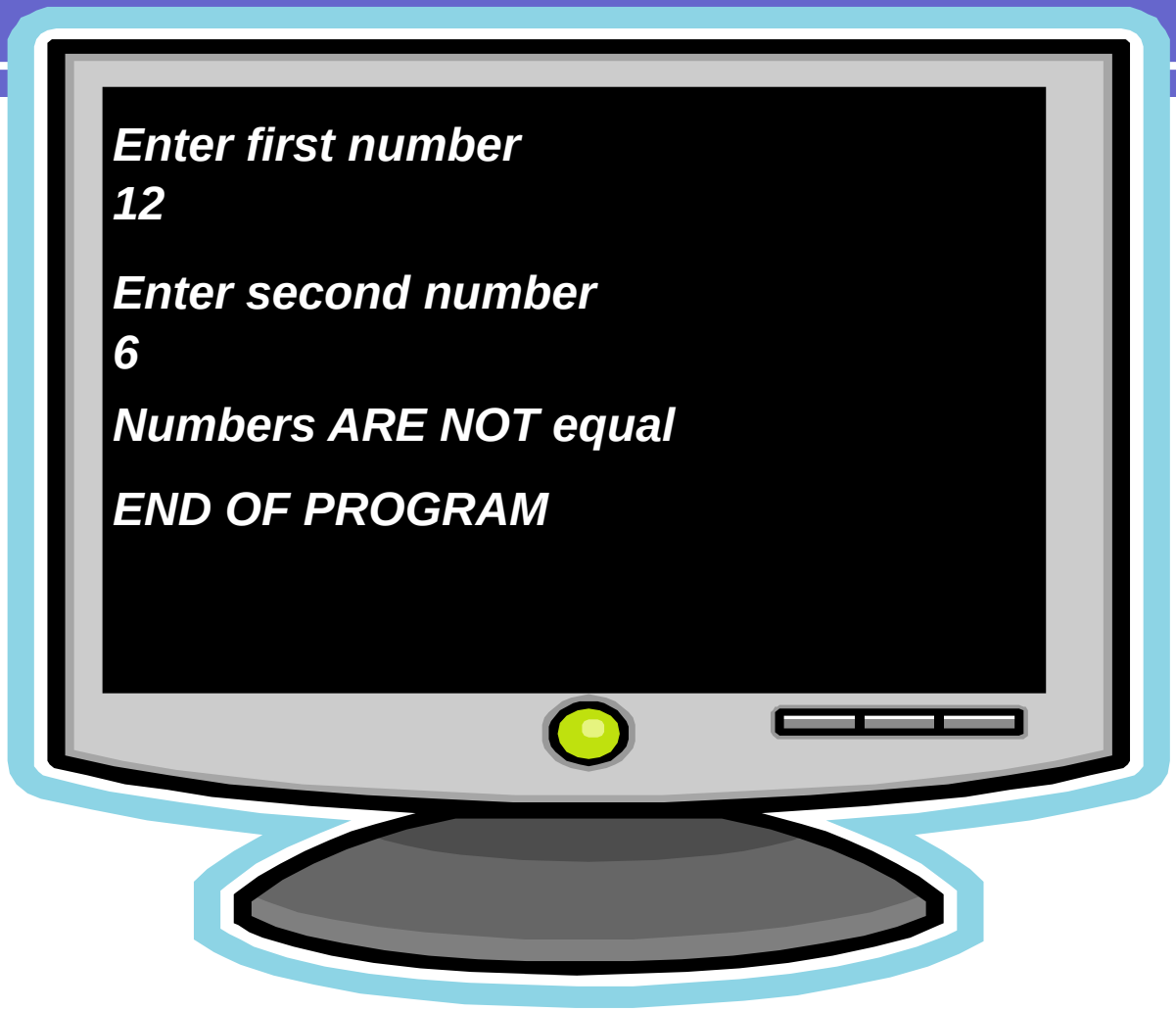


The first will be an application to compare two numbers


Enter first number
12
Enter second number
12
Numbers ARE equal
END OF PROGRAM


Enter first number
12
Enter second number
6
Numbers ARE NOT equal
END OF PROGRAM

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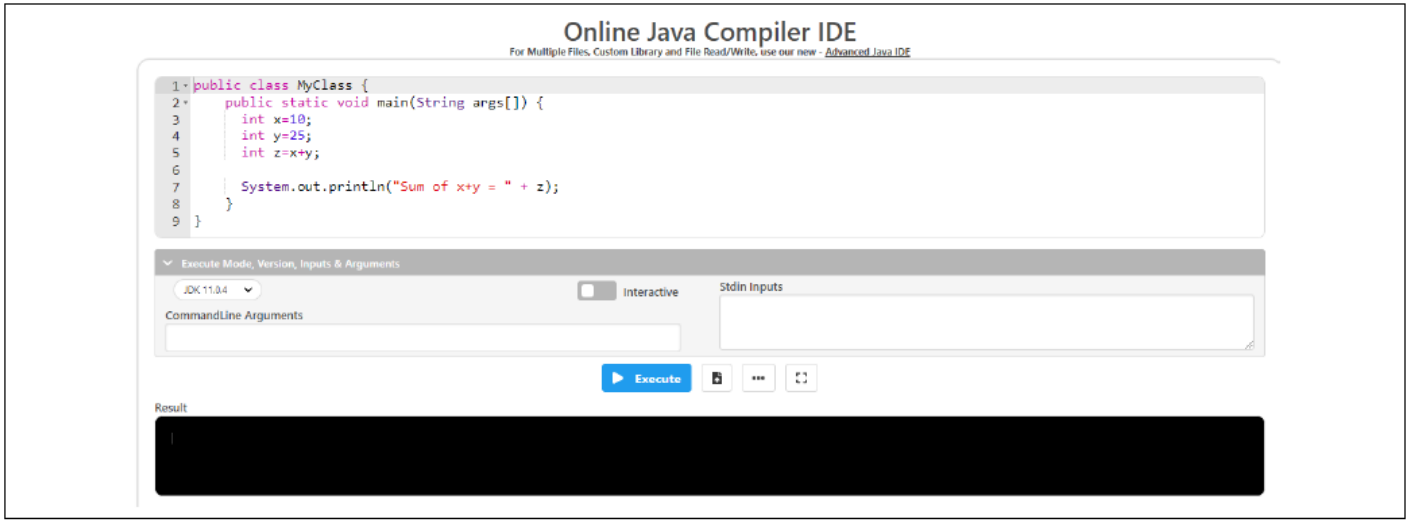
JDoodle Introduction

To open the web-based Java IDE called **JDoodle** click here.



Find a link to JDoodle in your worksheet

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REMOTE

Delete Code, rename class and (ideally) move brackets

```
1  public class MyClass {
2      public static void main(String [] ) {
3          int x=10;
4          int y=25;
5          int z=x+y;
6
7          System.out.println("Sum of x+y = " + z);
8      }
9  }
```

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REMOTE


```
1  public class CompareApp
2  {
3      public static void main(String args[])
4      {
5
6      }
7  }
```

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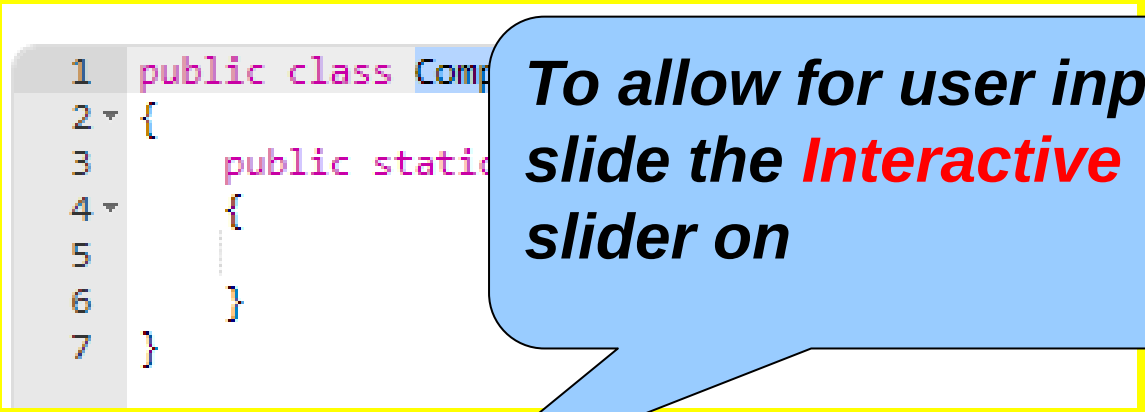
REMOTE



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REMOTE


```
1  public class CompareApp
2  {
3      public static void main(String args[])
4      {
5
6      }
7  }
```

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REMOTE

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c) **Write the code to declare two variables, 'num1' and 'num2' say. These variables should be able to hold whole numbers only. Then write additional code to allow the user to enter values into these two variables.**

YOU HAVE 10 MINUTES!!!

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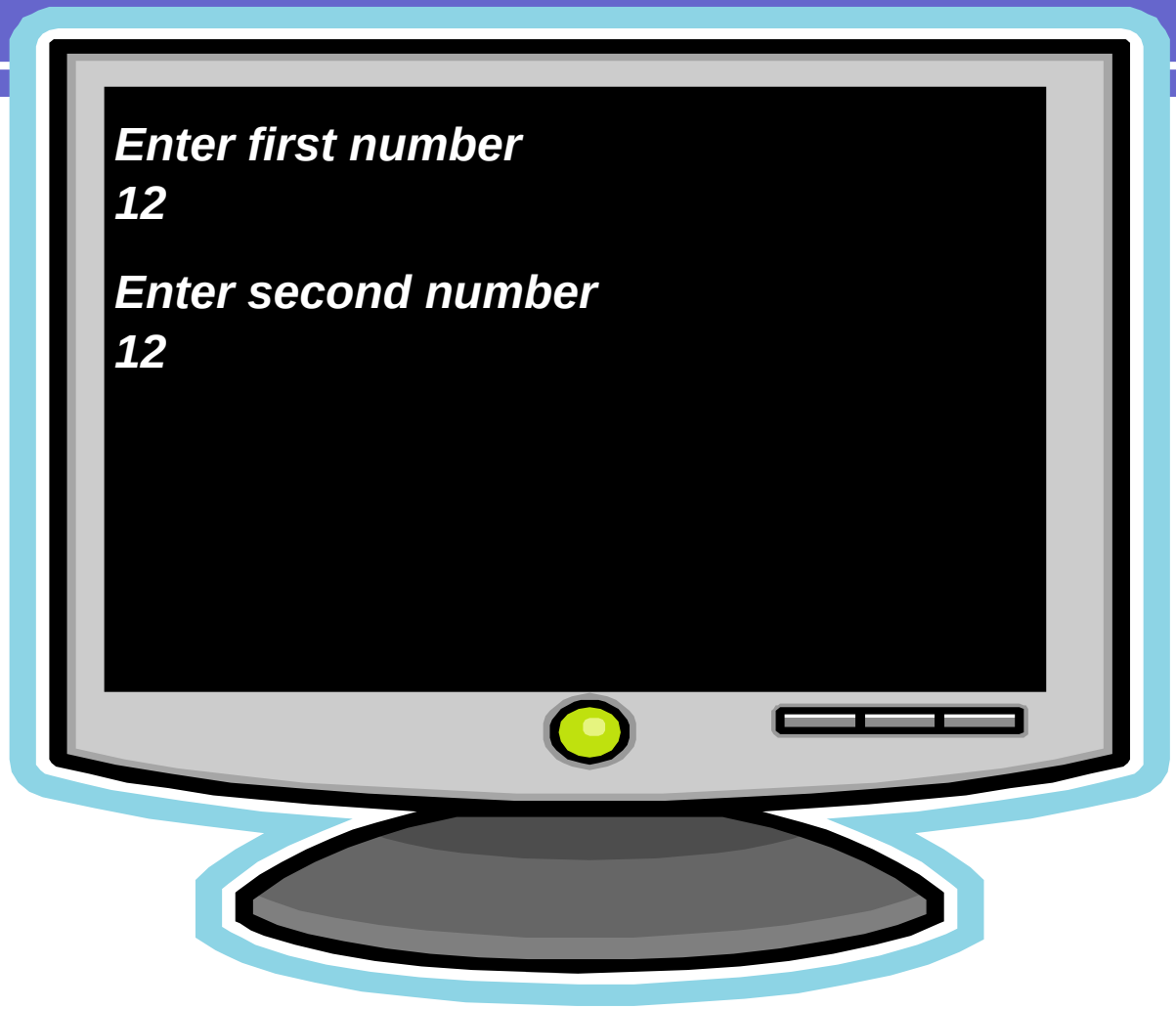
TIME'S UP!!


Enter first number
12
Enter second number
12

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d) Use in if statement so that the message "Numbers ARE equal" is displayed if the two numbers are equal. Then display an "END OF PROGRAM" message at the end of the program.

YOU HAVE 10 MINUTES!!!

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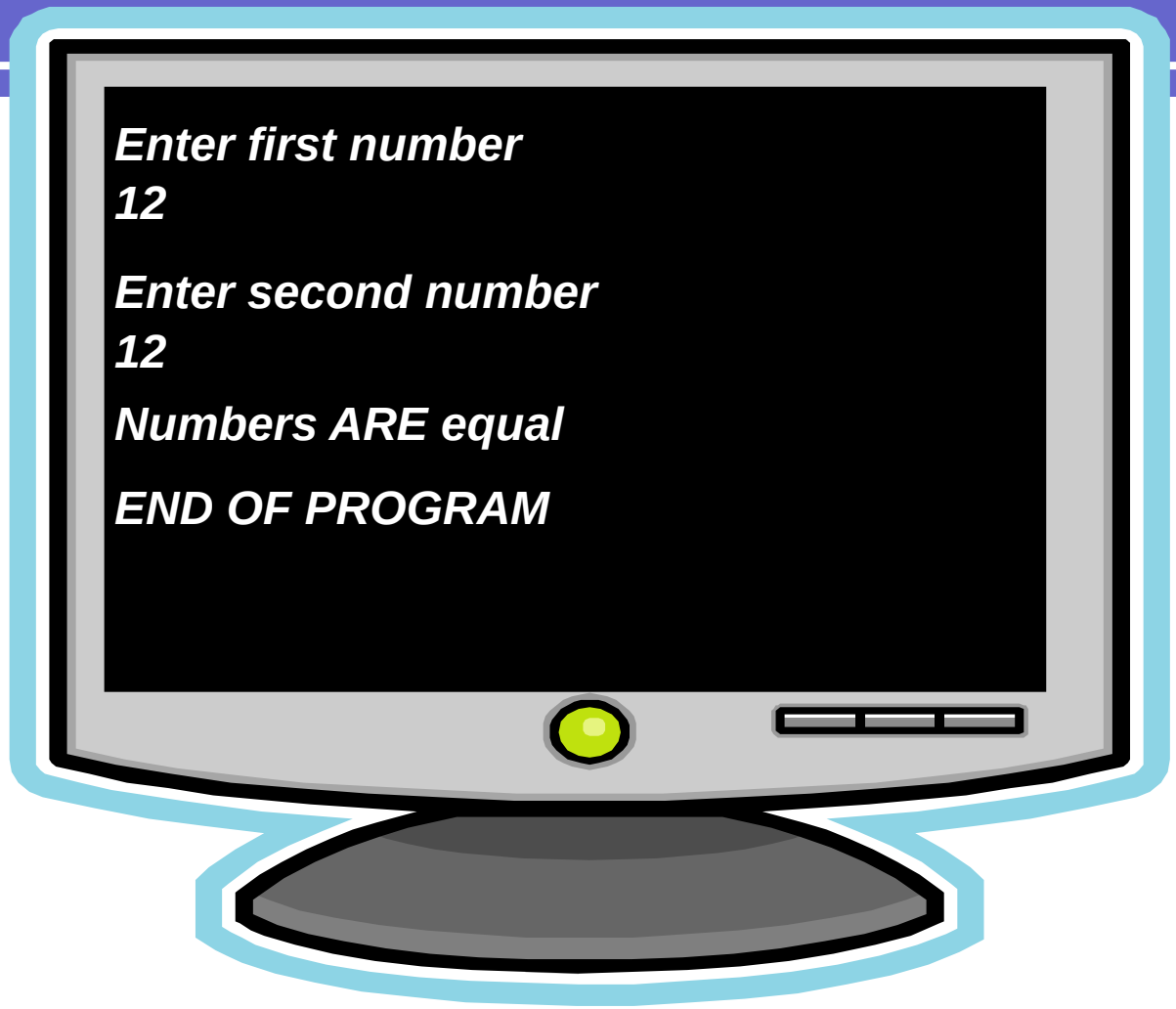
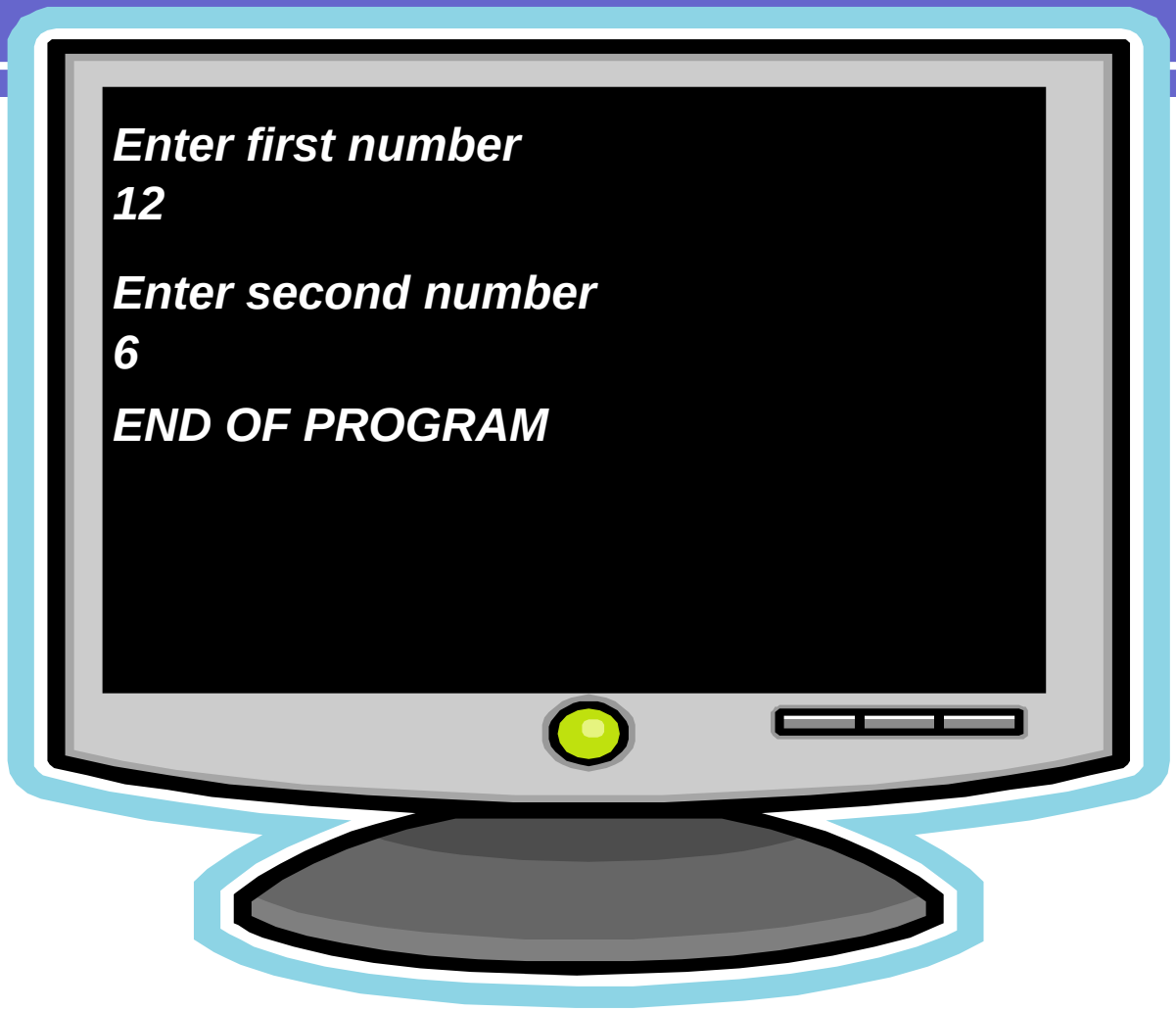
TIME'S UP!!


Enter first number
12
Enter second number
12
Numbers ARE equal
END OF PROGRAM


Enter first number
12
Enter second number
6
END OF PROGRAM

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e) Add an else branch to the above if statement so that the message "Numbers ARE NOT equal", is displayed if the two numbers are not equal. The "END OF PROGRAM" message should still be displayed at the end of the program

YOU HAVE 5 MINUTES!!!

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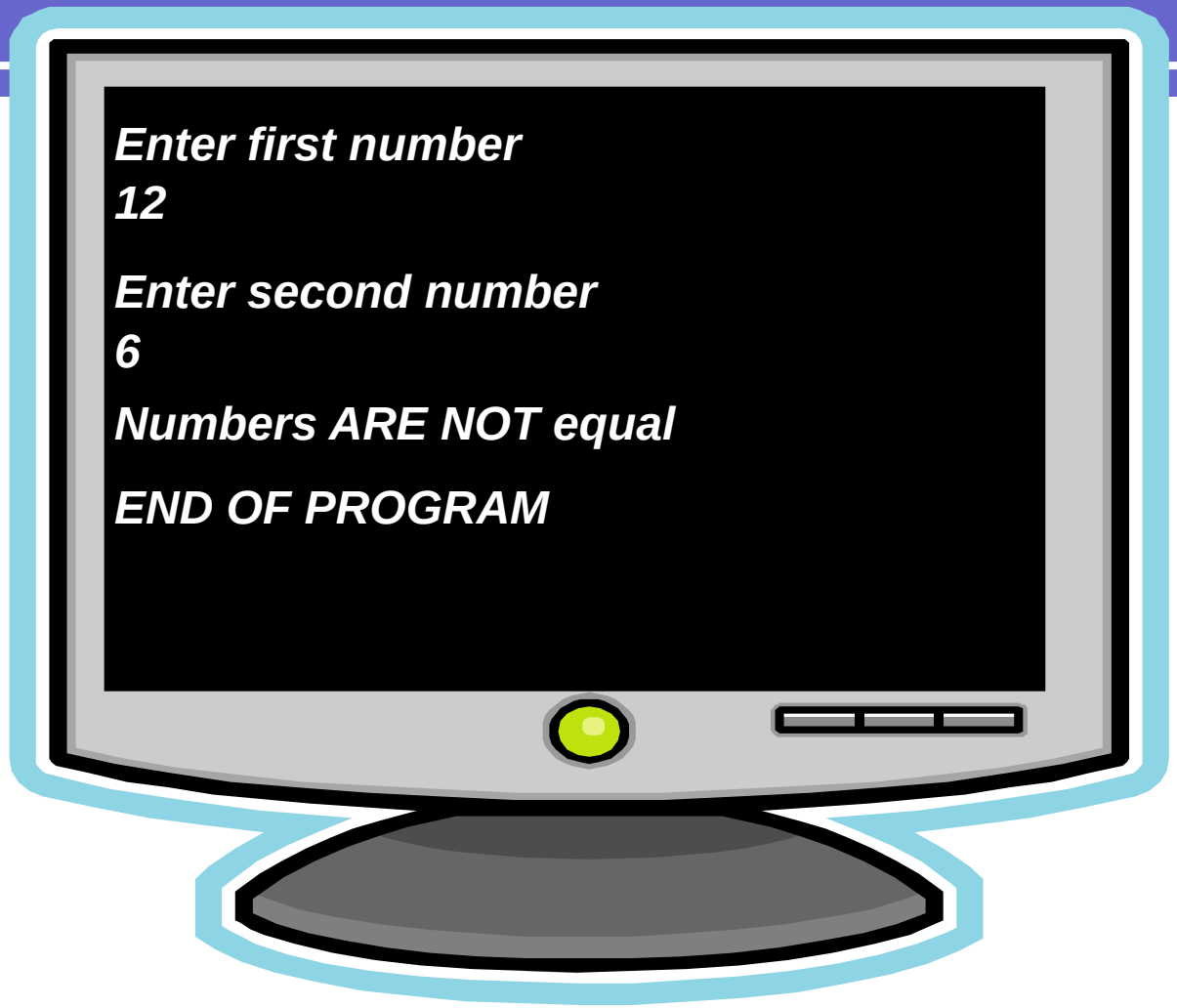
TIME'S UP!!


Enter first number
12
Enter second number
6
Numbers ARE NOT equal
END OF PROGRAM

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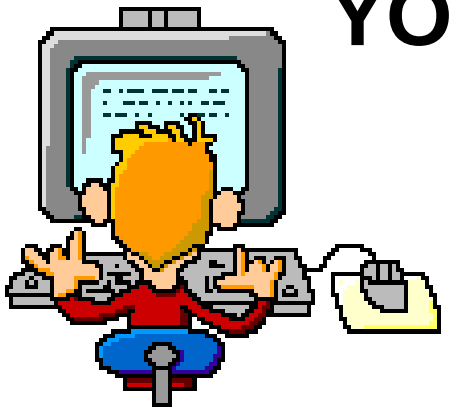
f) Add some Javadoc comments at the top of this program



YOU HAVE 5 MINUTES!!!

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```
import  java.util.*;
/**         Program to compare two numbers
 *          @author Aaron Kans
*           @version 12/10/2020
*/
public class CompareApp
{
        public static void main(String[ ] args)
        {
            // Program code here

        }
}
```

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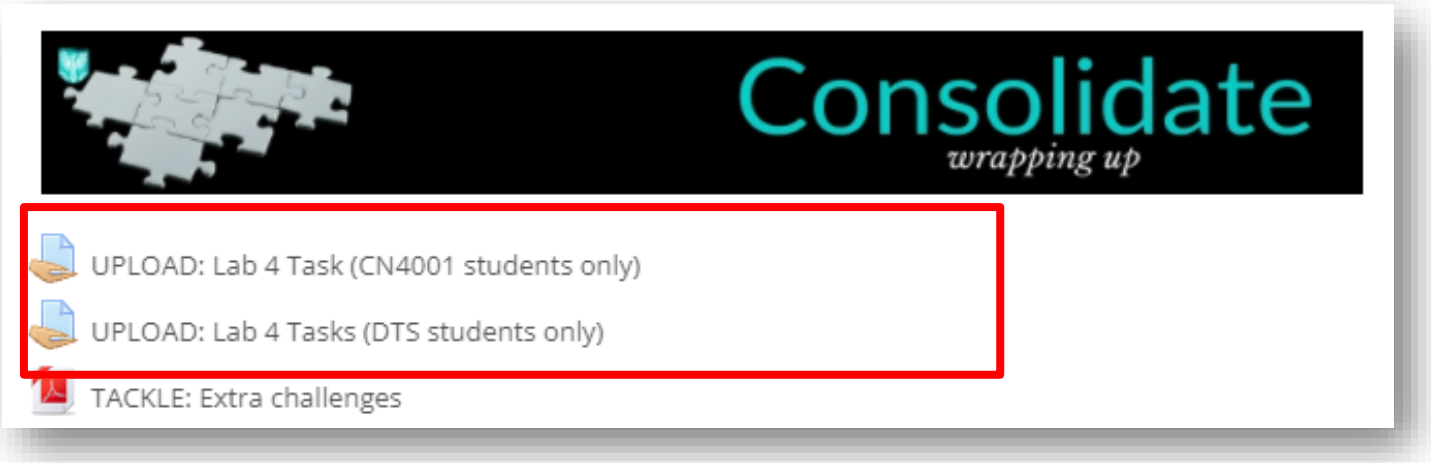

Downlaod your CompareApp.java file from JDoodle and upload to Moodle so your tutor can check you have completed this task successfully – using the appropriate submission link.

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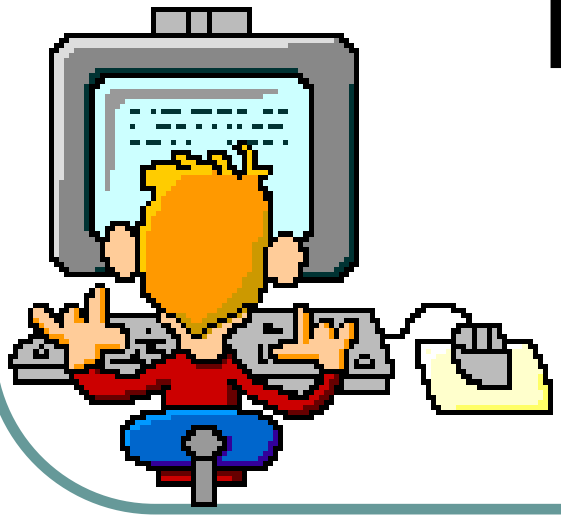
NOW – let's tackle a second practical task.



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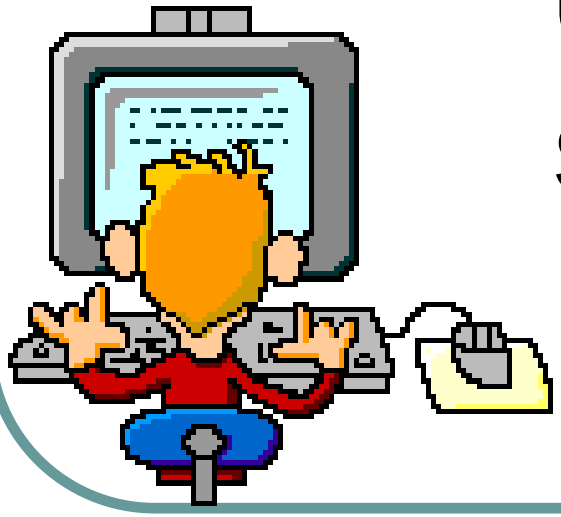

We can process a multiple choice using a switch statement.

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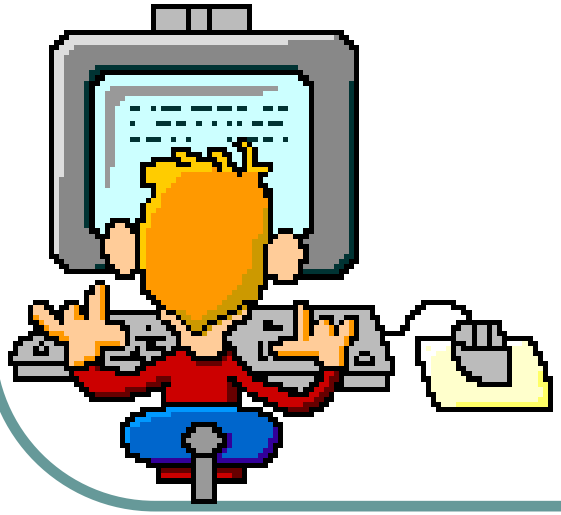

As an example we will develop an application to reveal secrets to spies

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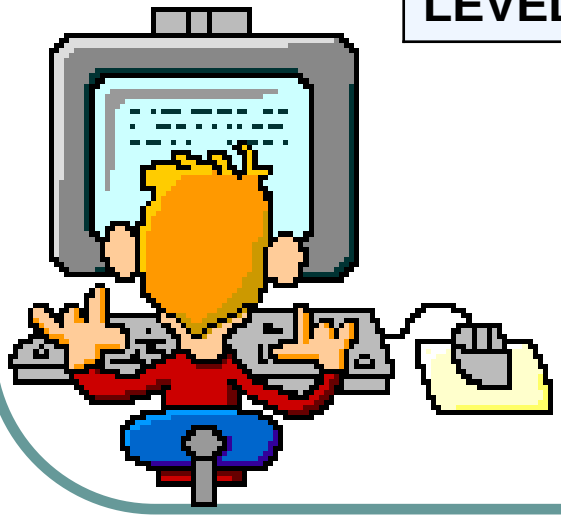
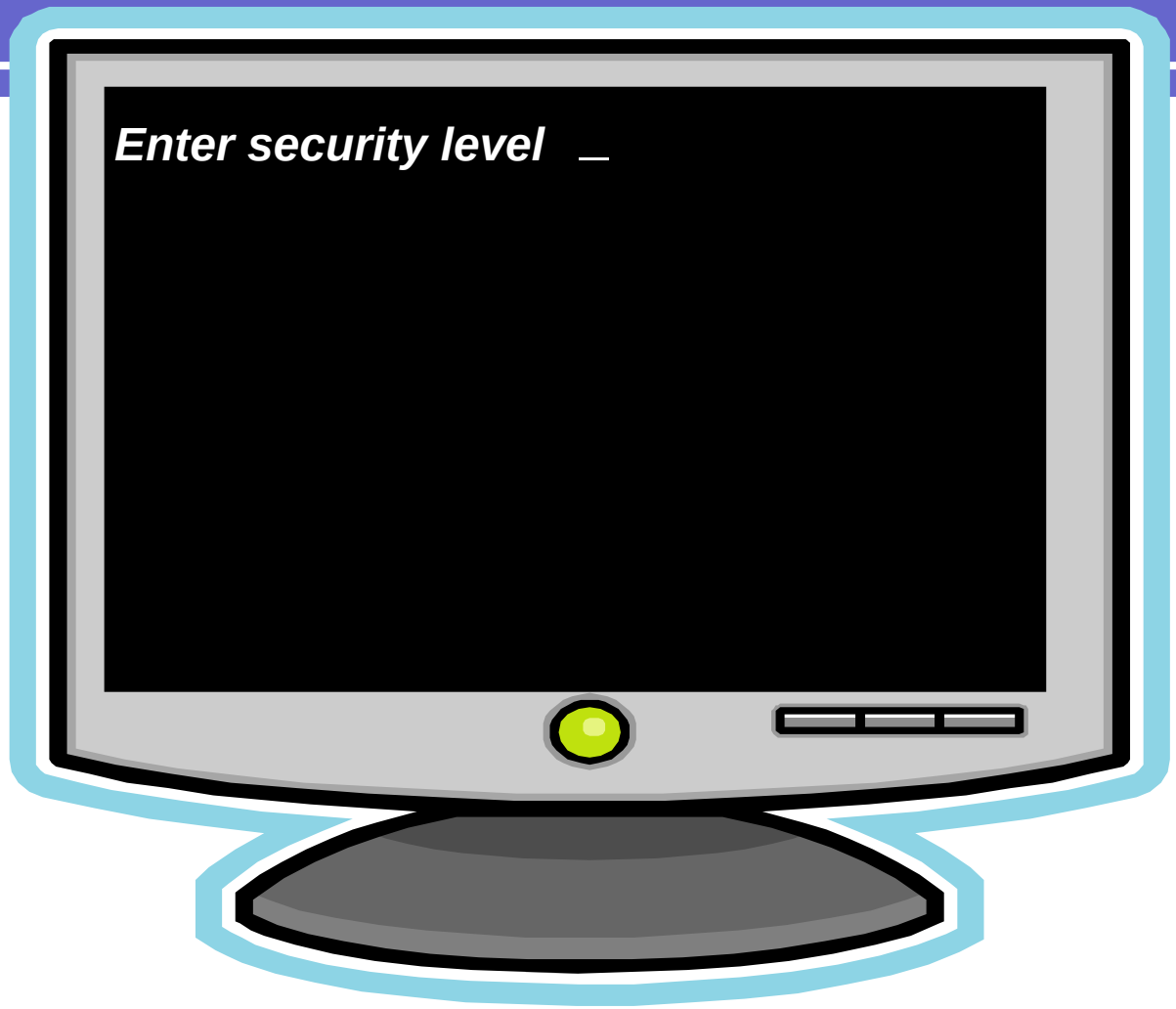
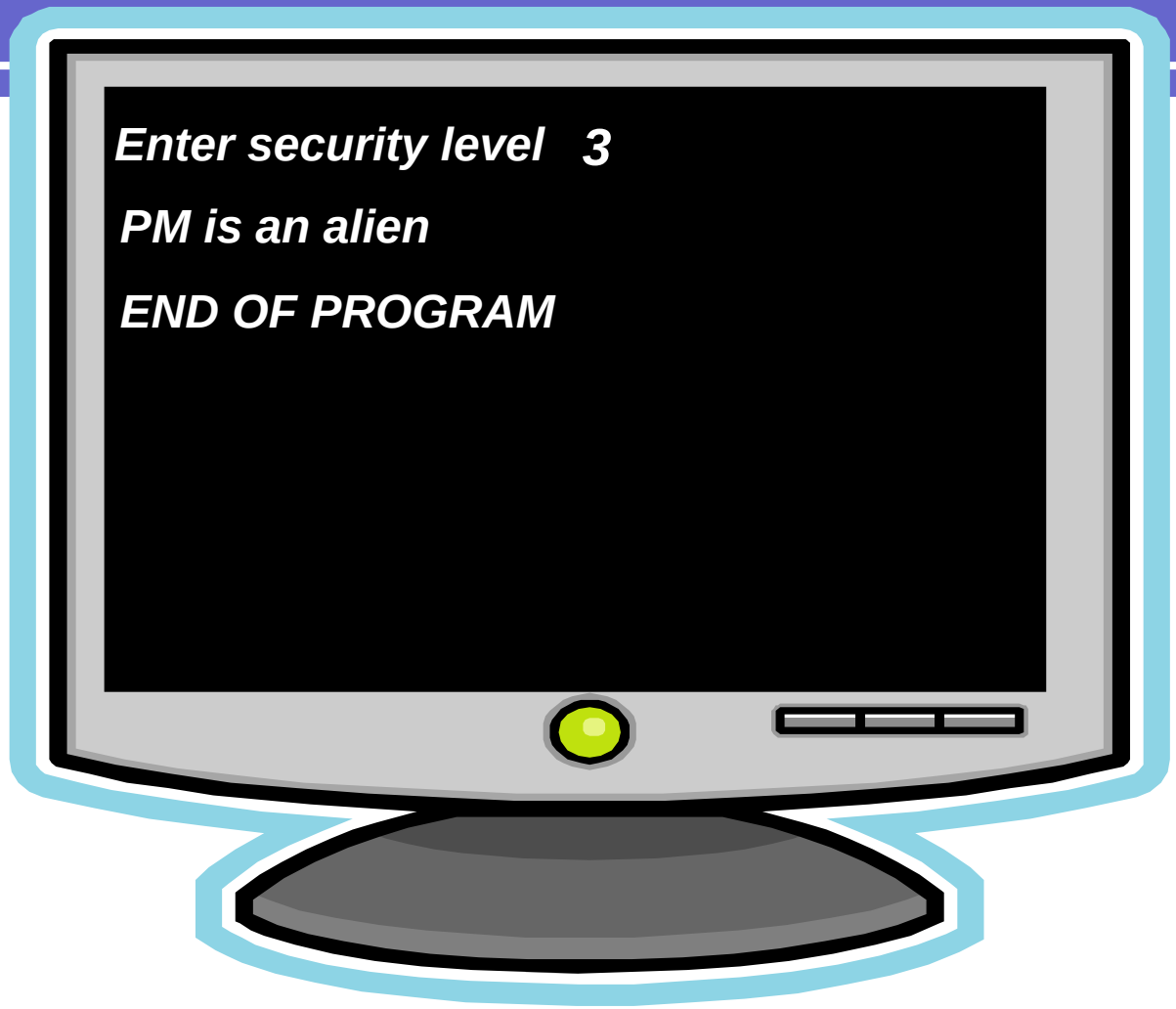
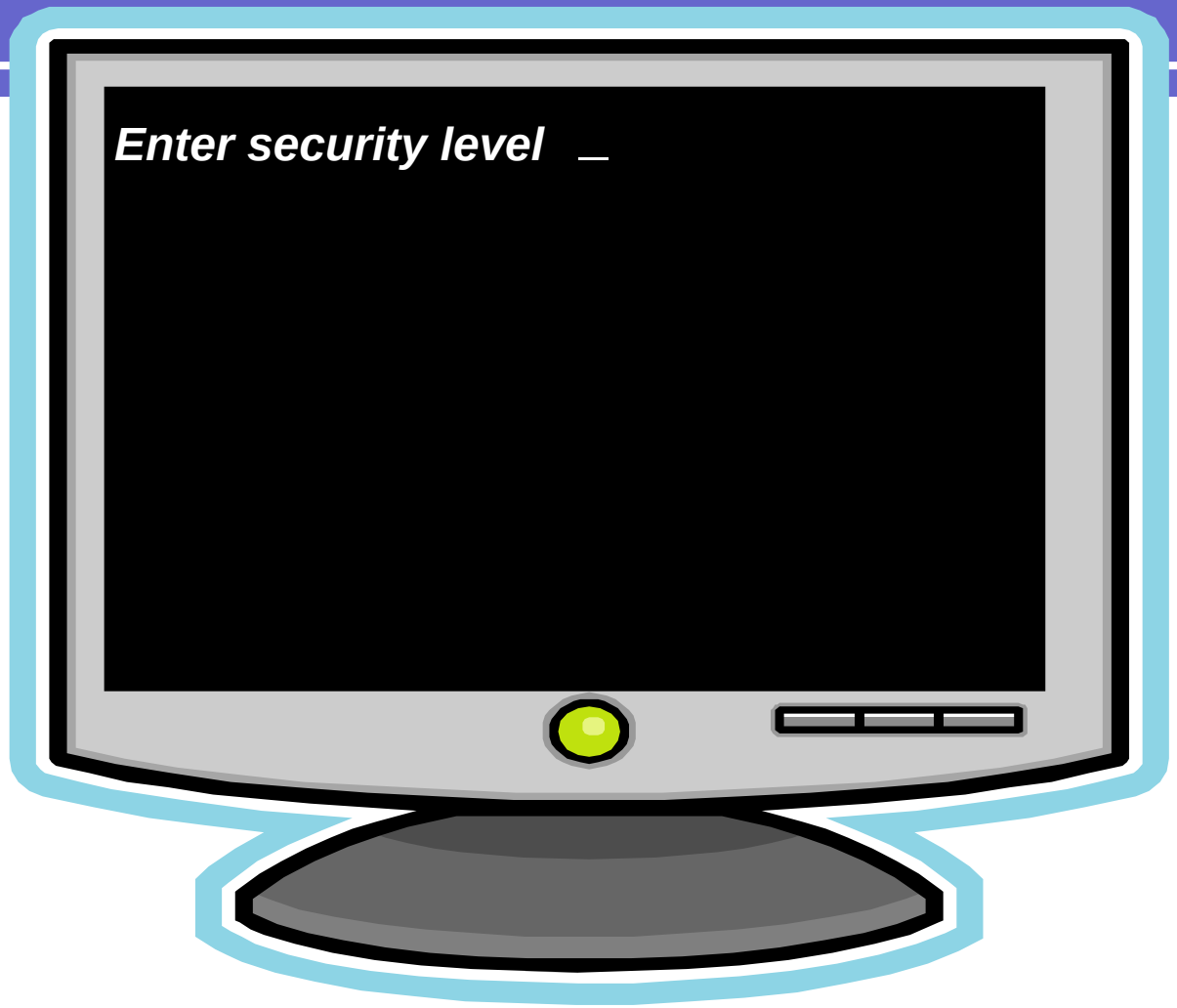
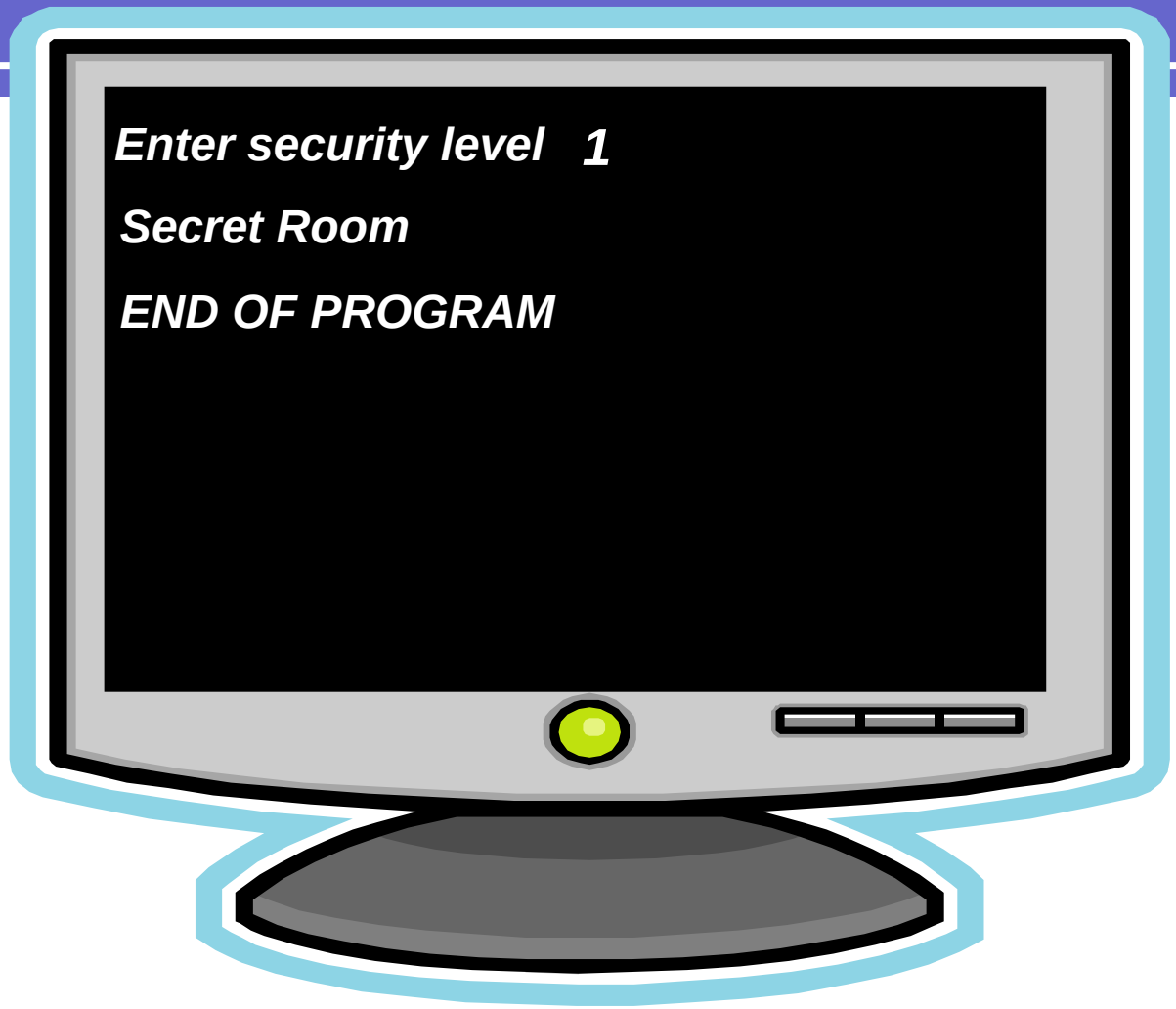
LEVEL 3	**The PM is an alien**
LEVEL 2	**There is a secret room in the basement**
LEVEL 1	**The security guard is a robot**

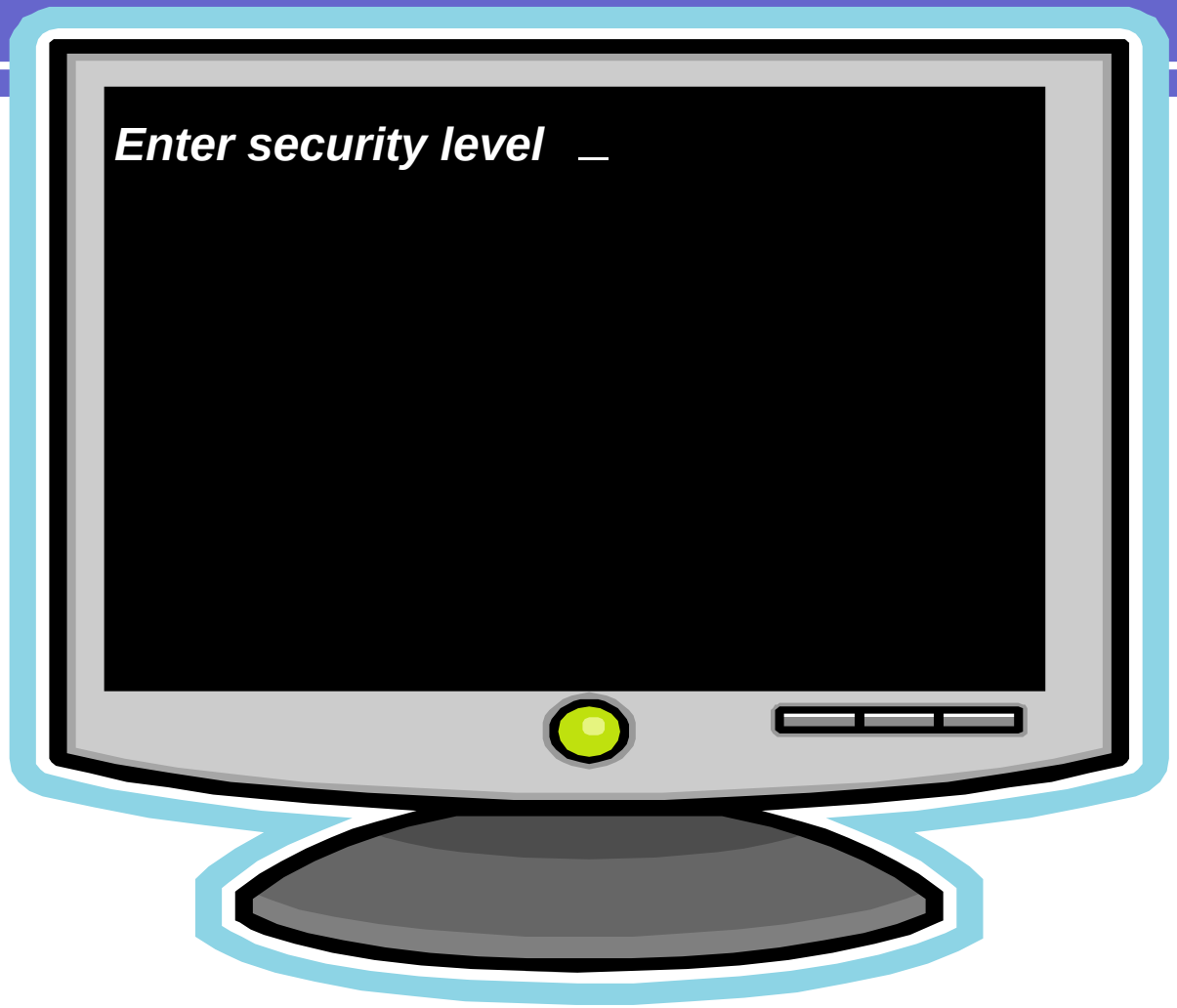


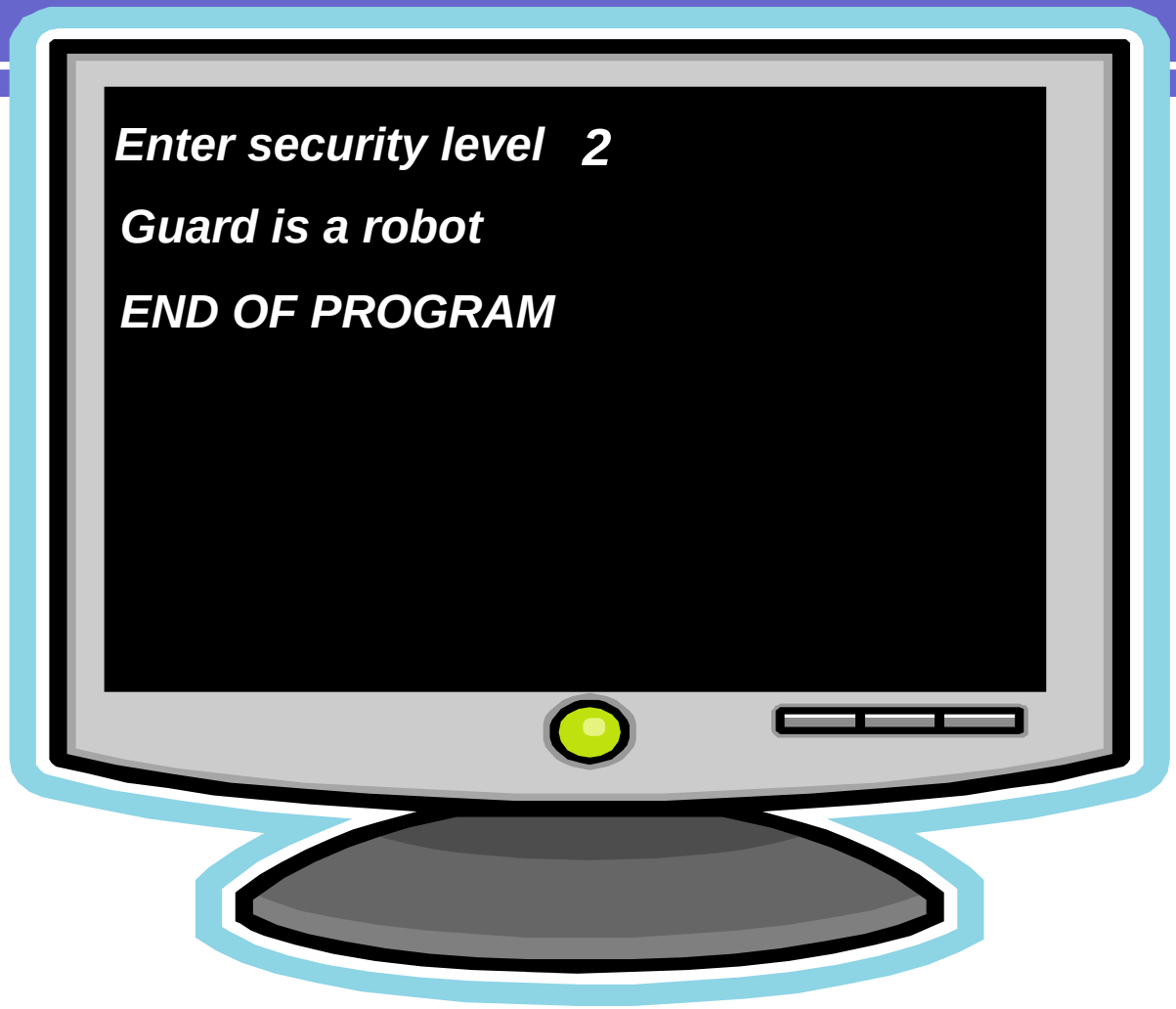

Enter security level _


Enter security level 3
PM is an alien
END OF PROGRAM


Enter security level _


Enter security level 1
Secret Room
END OF PROGRAM


Enter security level _


Enter security level 2
Guard is a robot
END OF PROGRAM

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a) Delete the code in your main method

b) Rename your class SecretsApp

c) Ensure the Interactive slider is on.

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This program will allow spies to enter their security level. Declare the appropriate variable and Scanner object

YOU HAVE 5 MINUTES!!!

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TIME'S UP!!

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d) Write the code that asks the user to enter their security level and store this level in the appropriate variable.

YOU HAVE 5 MINUTES!!!

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TIME'S UP!!

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e) The following secrets can be revealed to the spies depending upon their security level:

LEVEL 3: The PM is an alien
LEVEL 2: Secret room in basement
LEVEL 1: Security guard is a robot

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e) **Use a switch statement to reveal the correct secret to the spy (note, only 1 secret should be revealed to each spy). Then display an "END OF PROGRAM" message at the end of the program.**

YOU HAVE 10 MINUTES!!!

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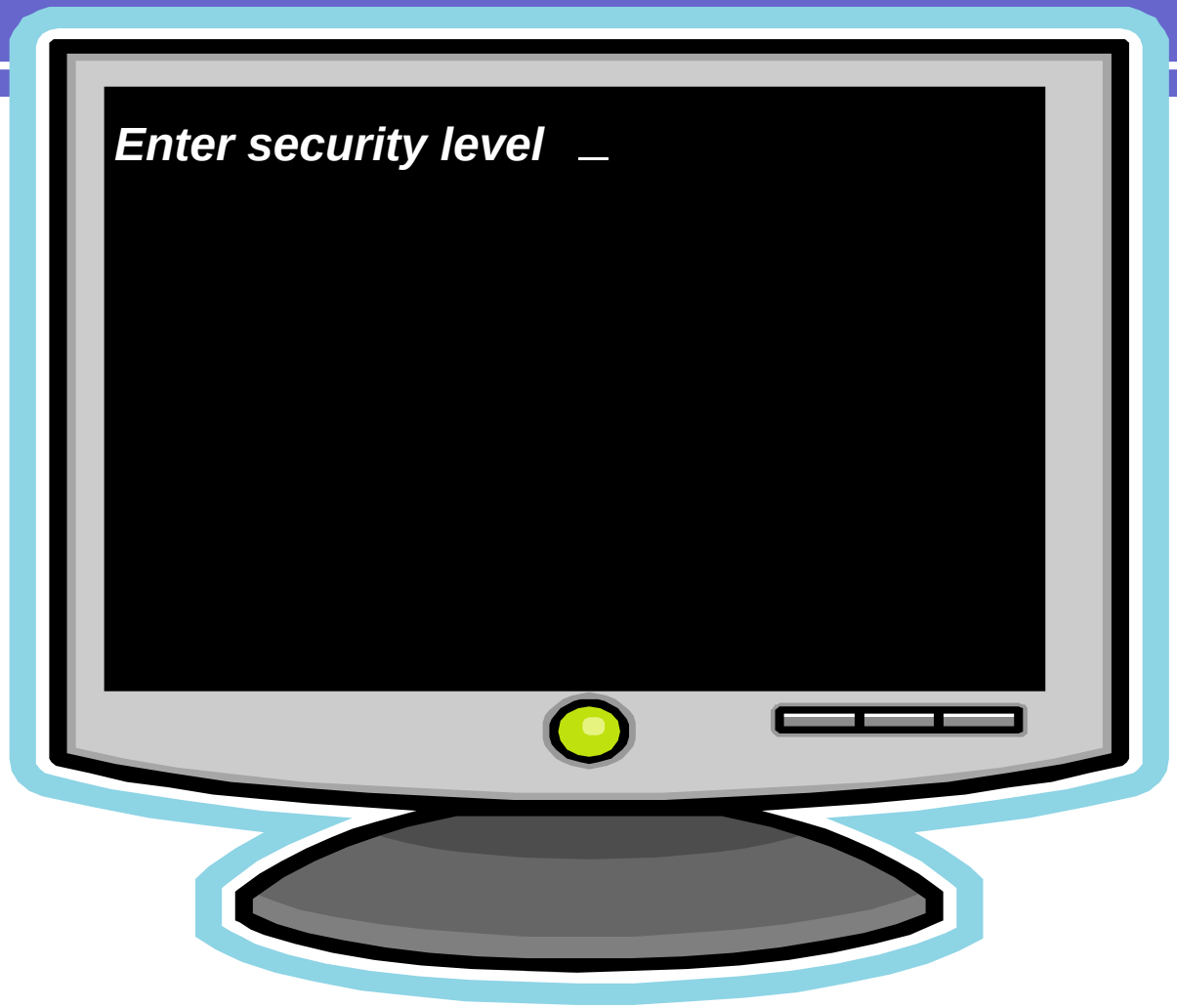
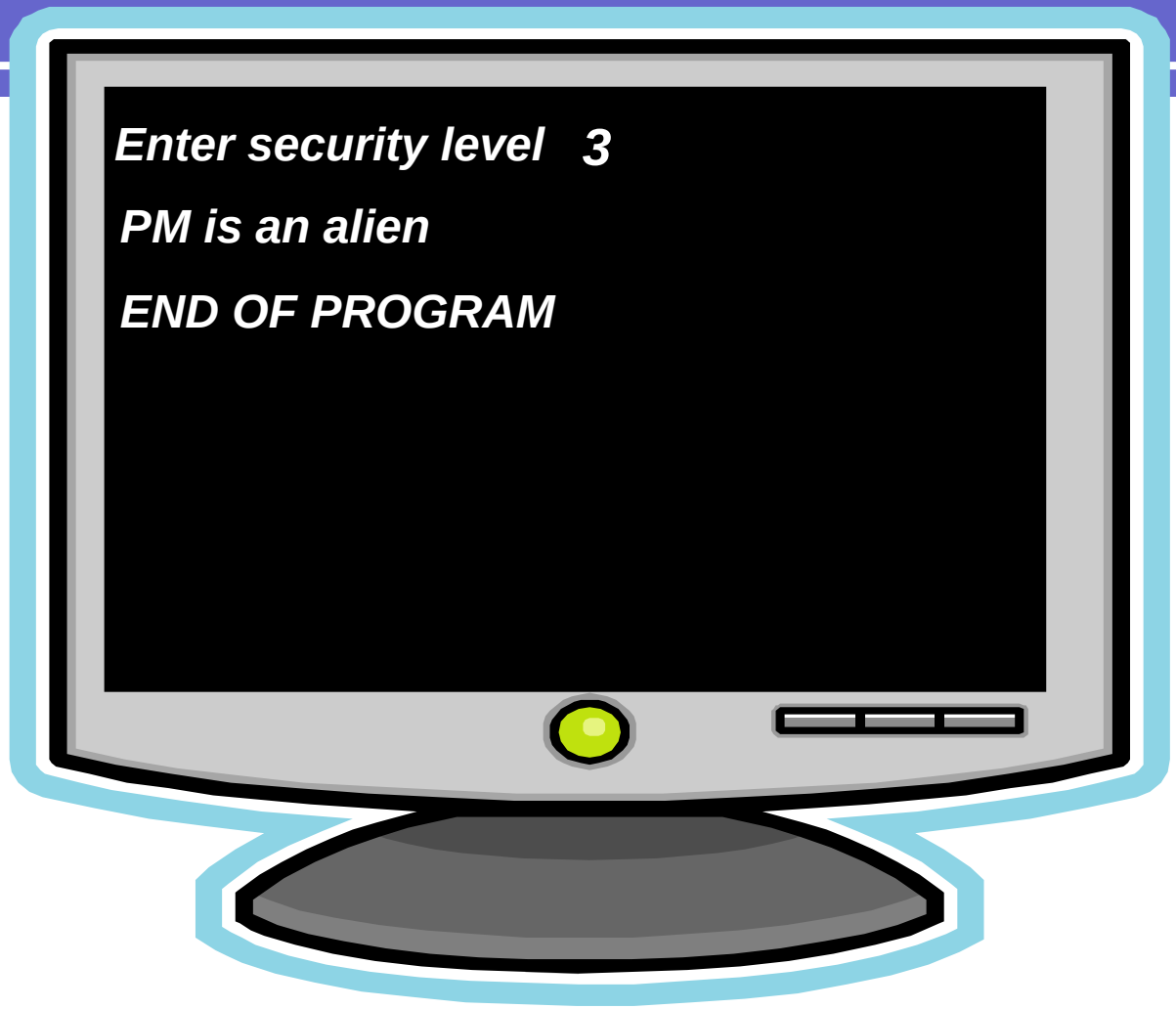
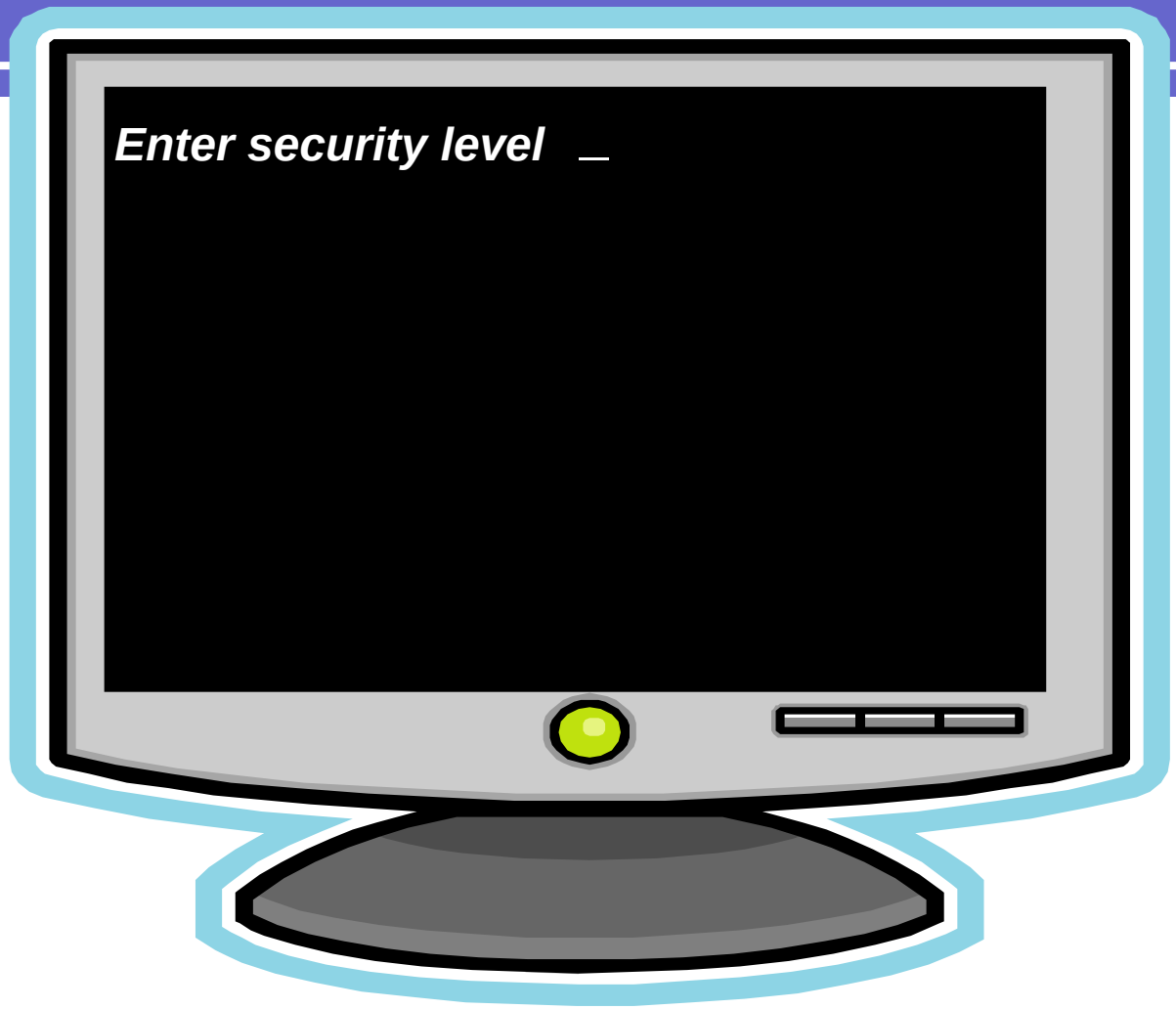
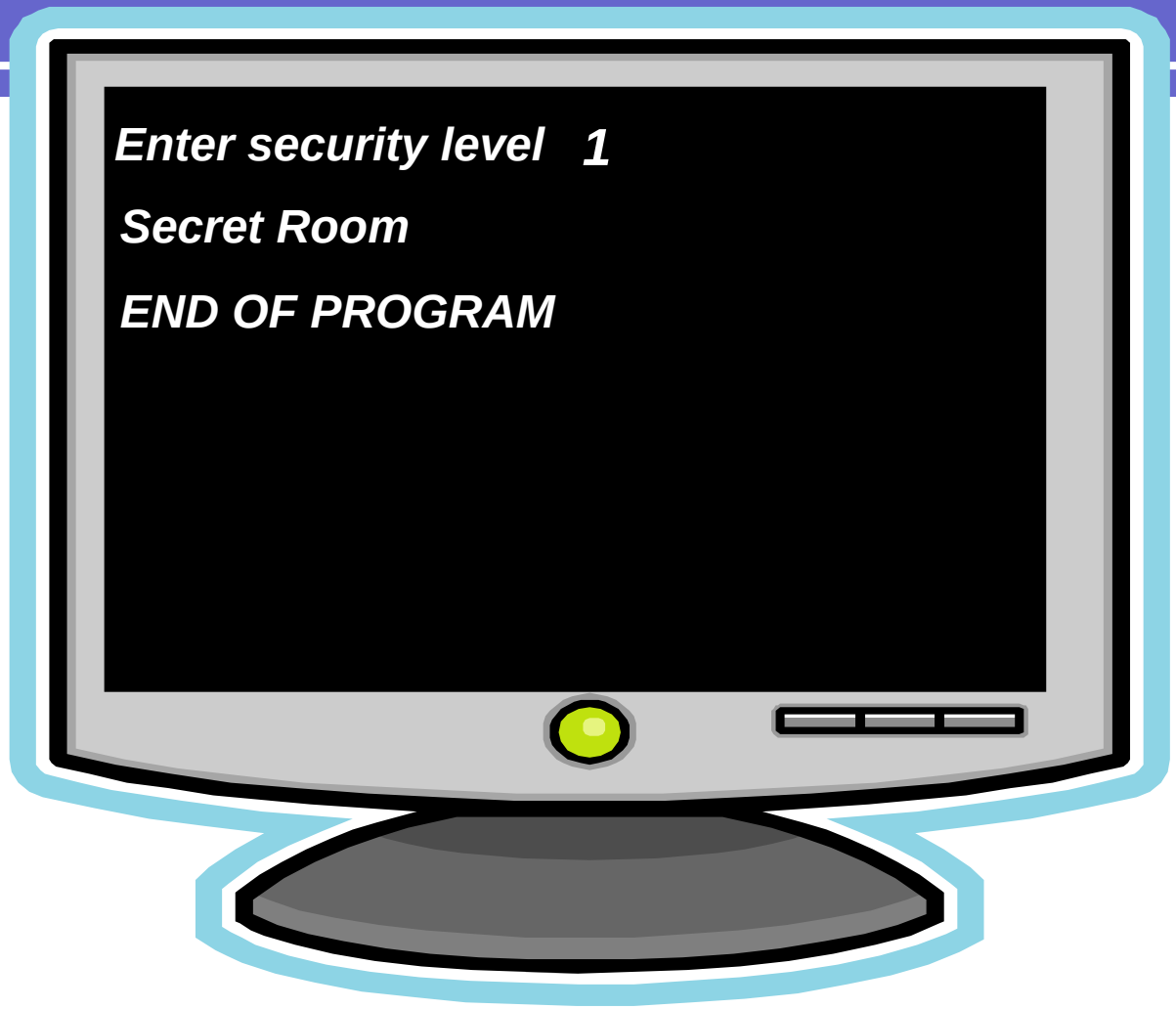
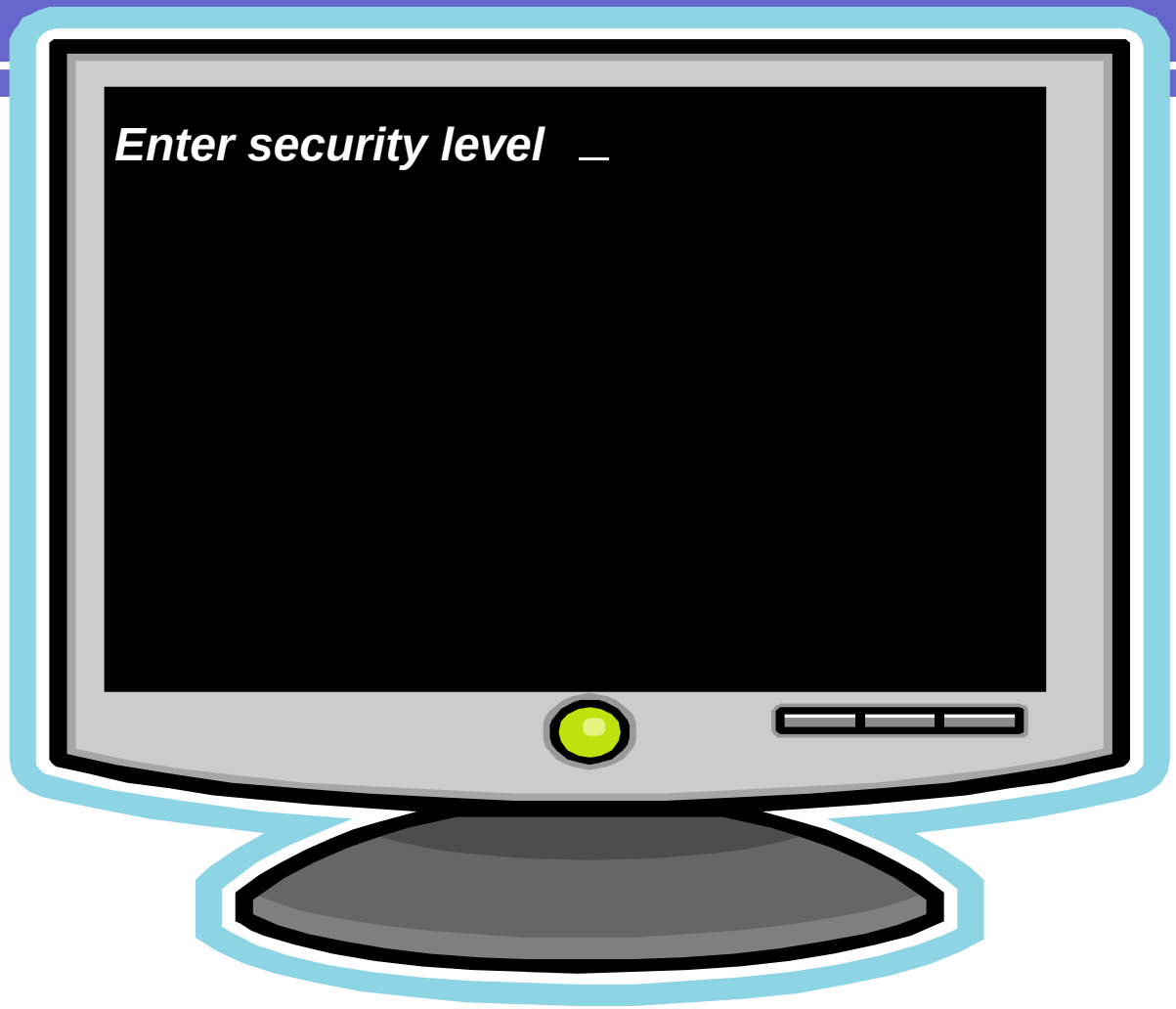
TIME'S UP!!

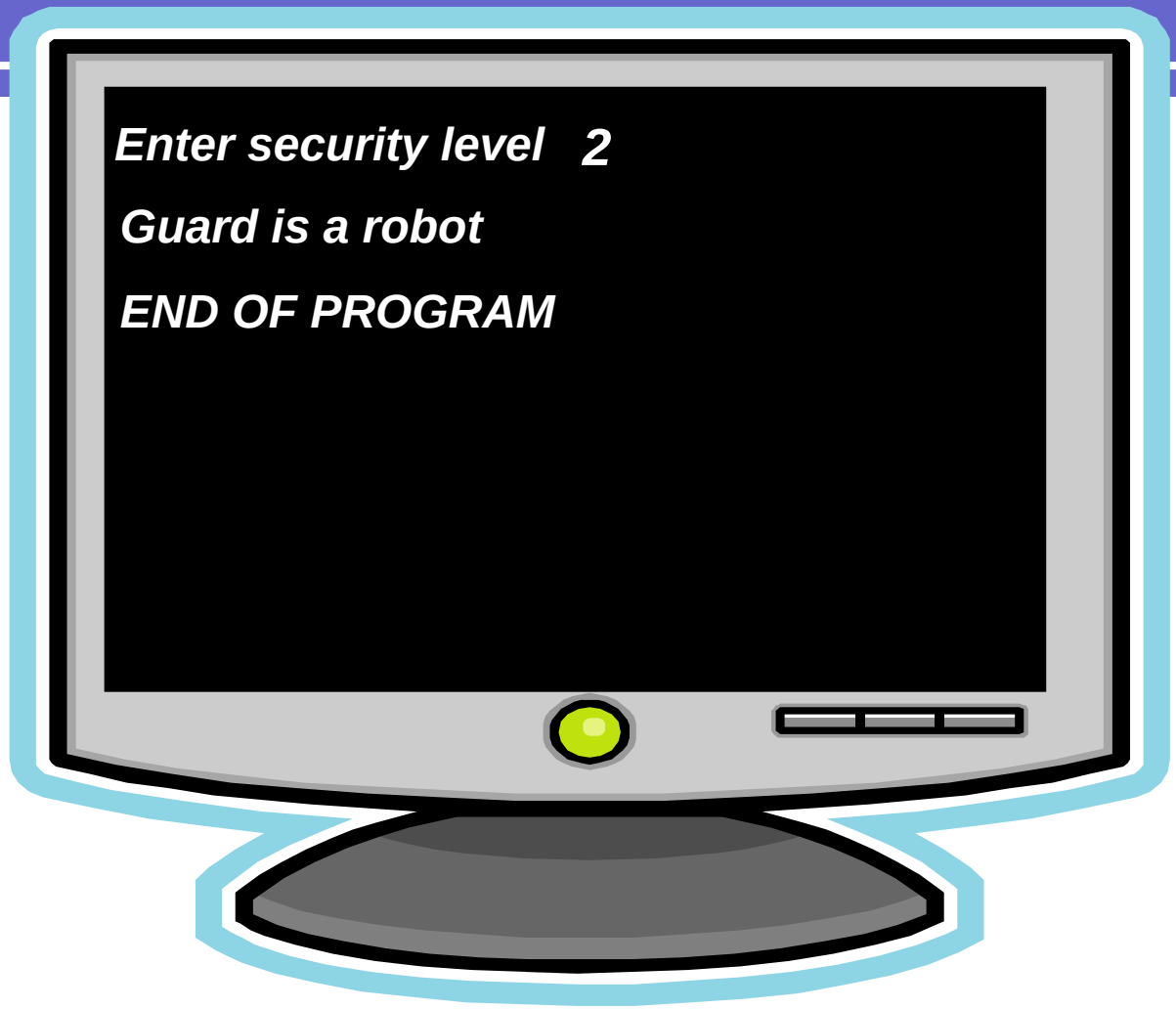

Enter security level _

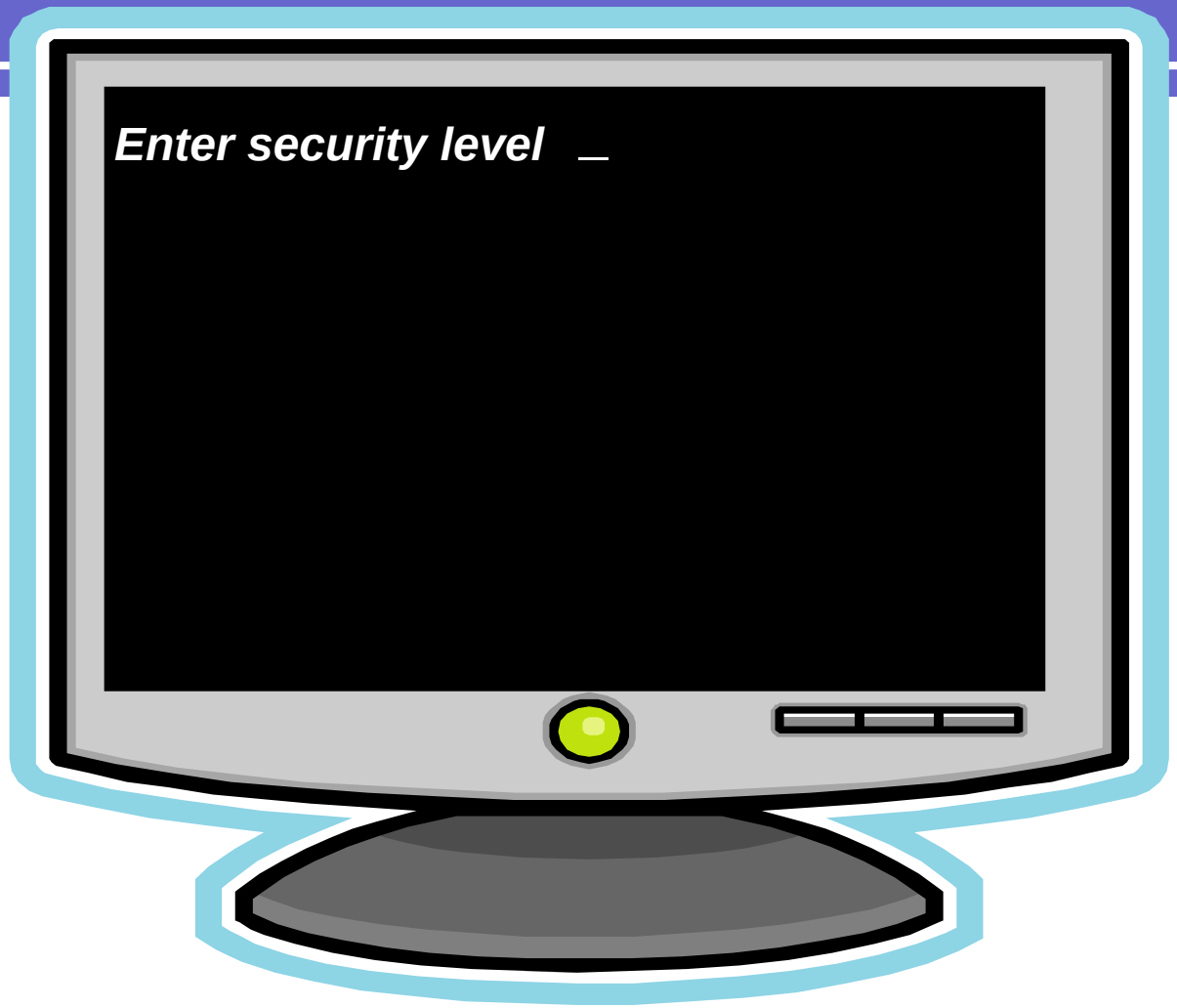

Enter security level 3
PM is an alien
END OF PROGRAM


Enter security level _

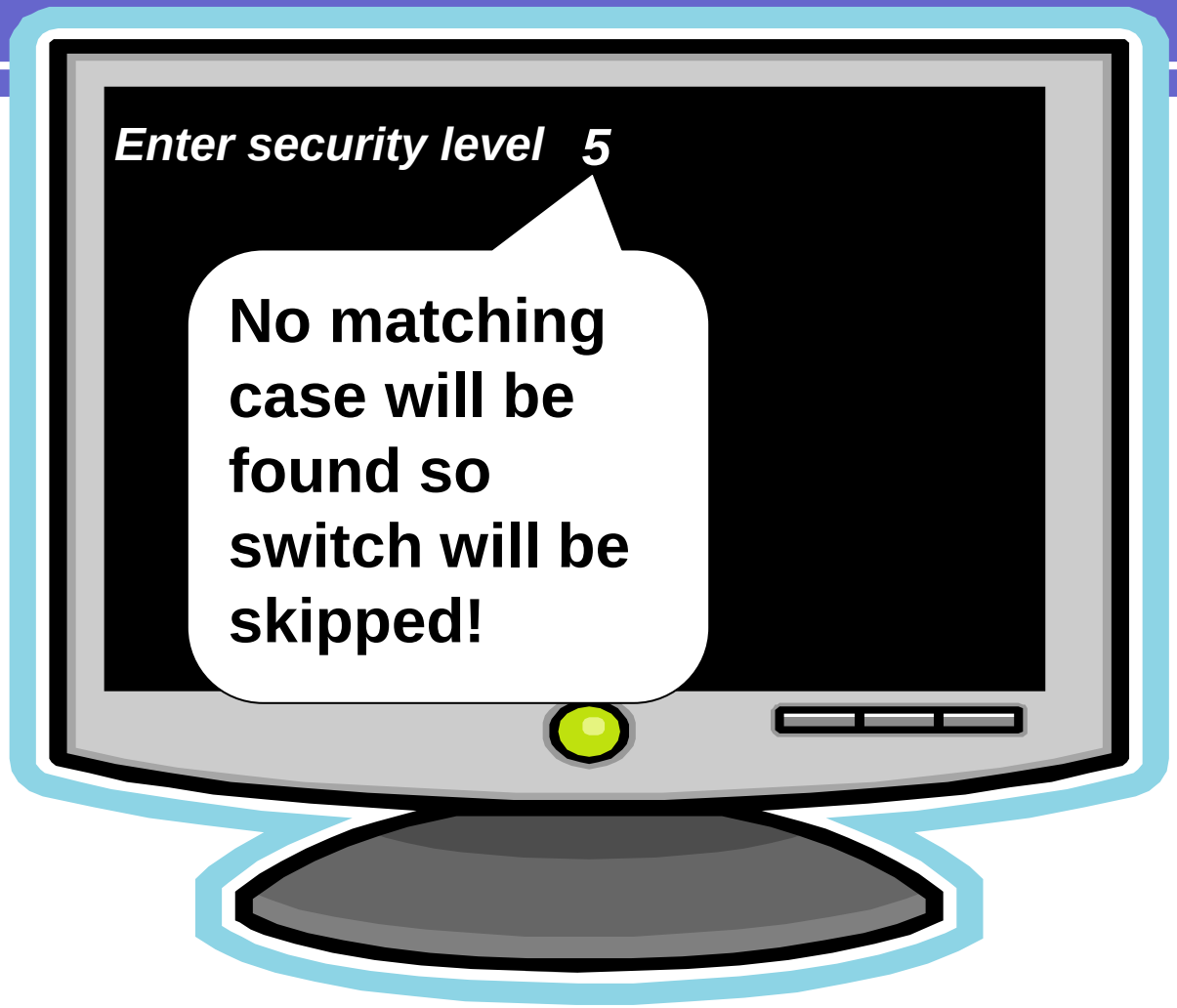

Enter security level 1
Secret Room
END OF PROGRAM

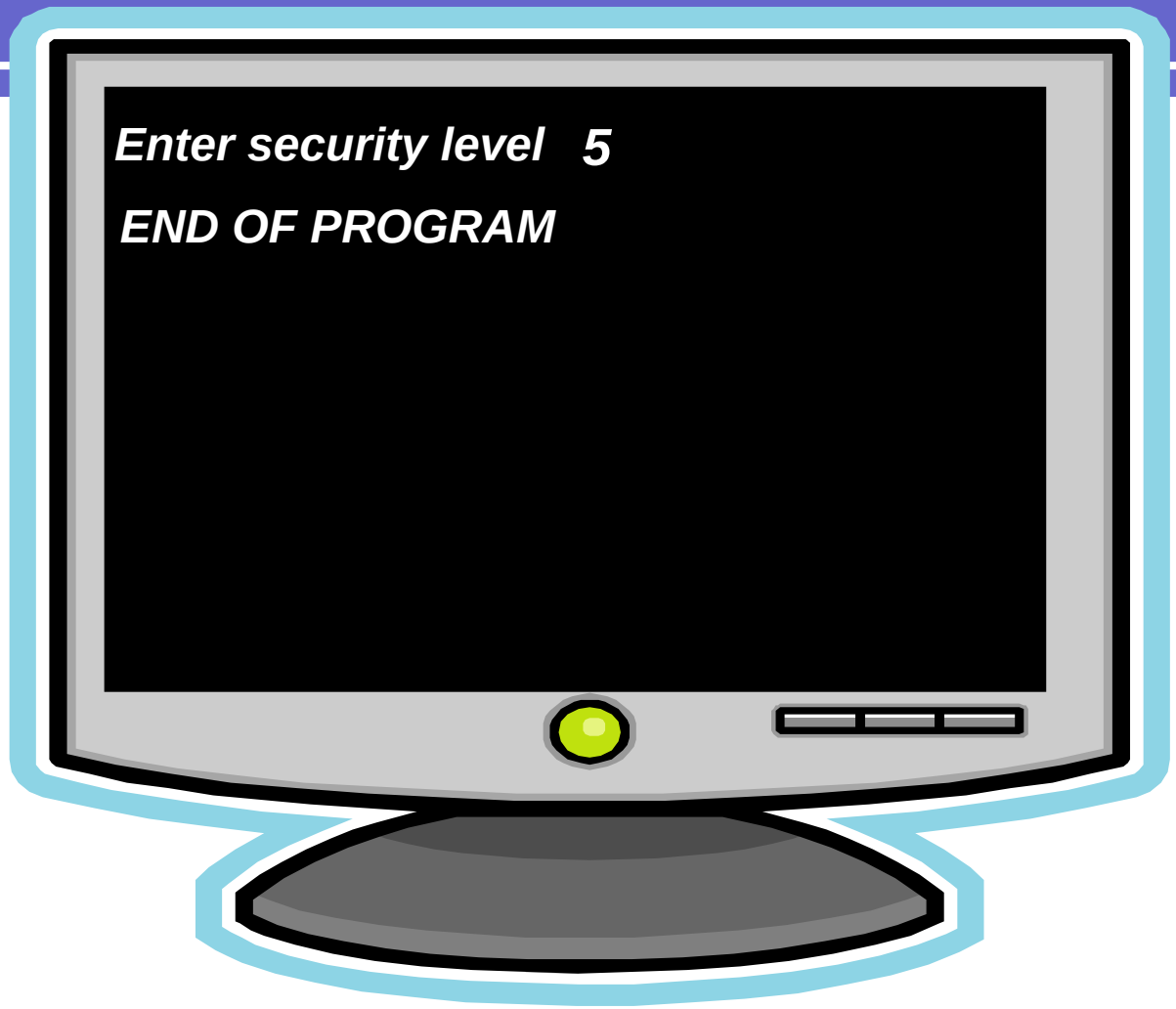

Enter security level _


Enter security level 2
Guard is a robot
END OF PROGRAM


Enter security level _


Enter security level 5
What happens now??!


Enter security level 5
No matching case will be found so switch will be skipped!


Enter security level 5
END OF PROGRAM

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f) Finally, adapt the program so that an error message "NO SUCH LEVEL" is displayed when an incorrect security level is entered.

YOU HAVE 5 MINUTES!!!

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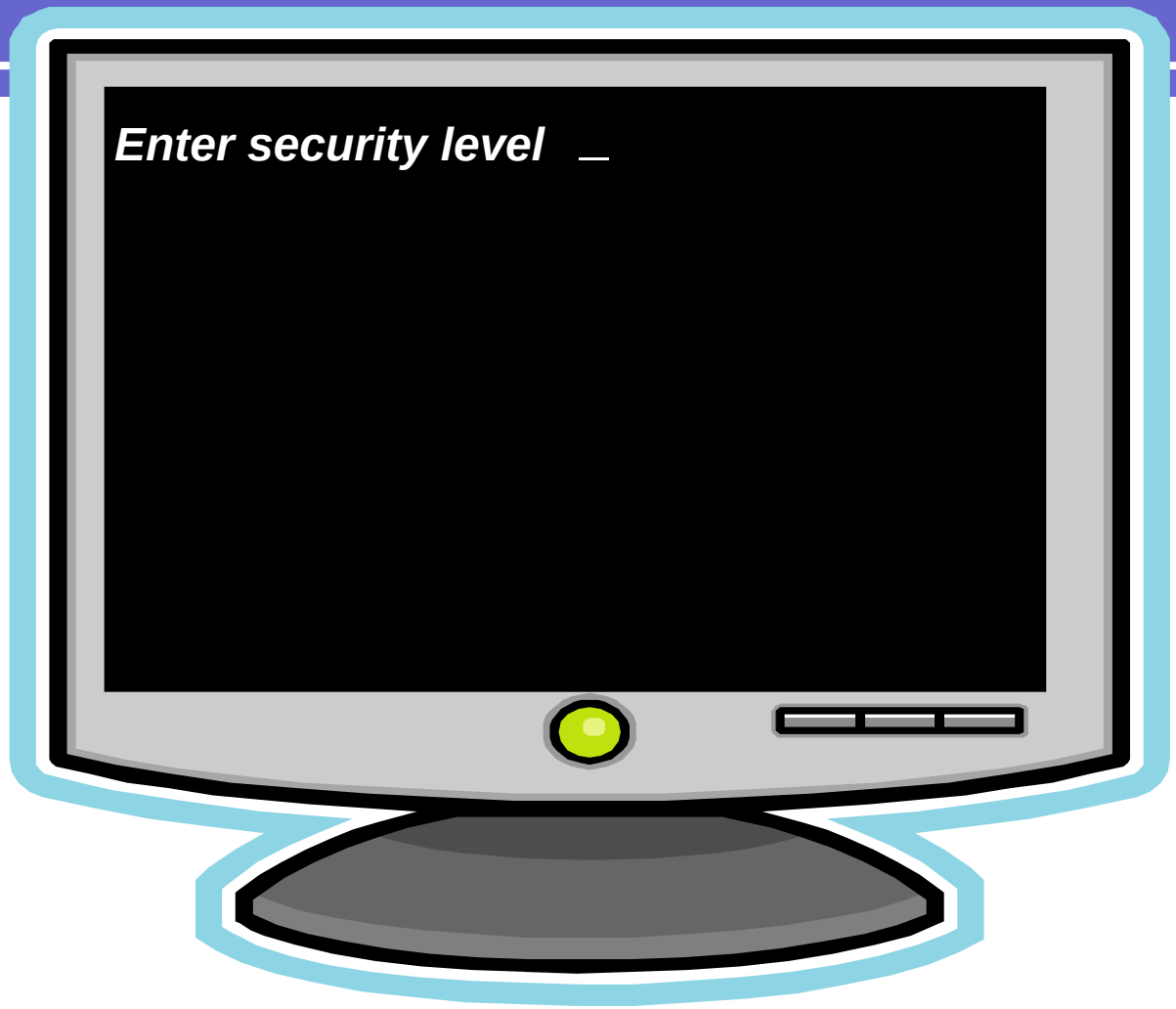
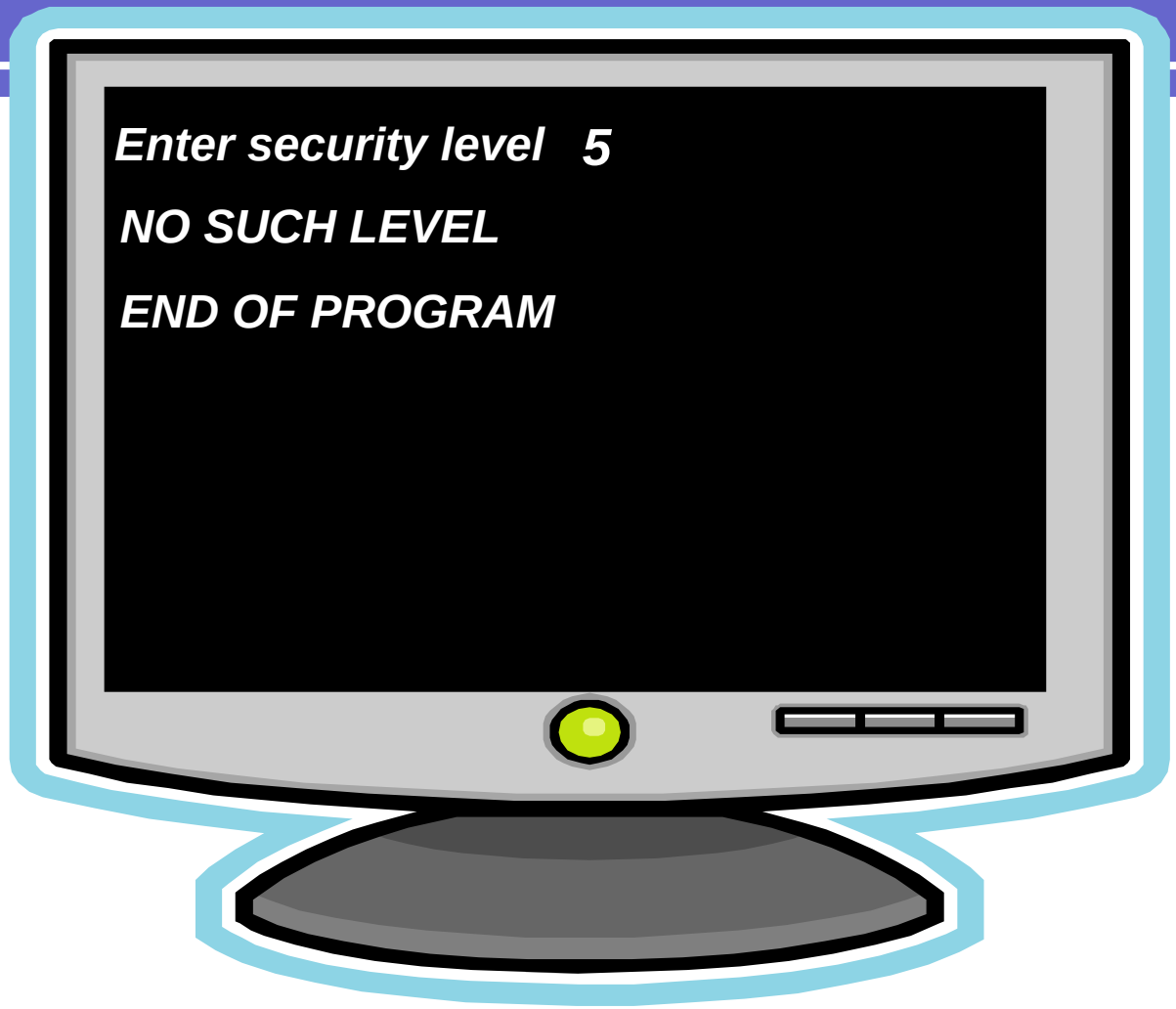
TIME'S UP!!


Enter security level _


Enter security level 5
NO SUCH LEVEL
END OF PROGRAM

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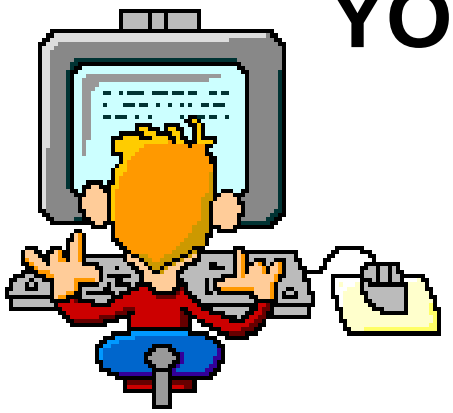
g) Add some Javadoc comments at the top of today's programs



YOU HAVE 5 MINUTES!!!

CD/CN4001: Topic 4 Lab

```
import  java.util.*;
/**         Program to reveal secrets
 *          @author Aaron Kans
*           @version 03/10/2020
*/
public class SecretsApp
{
        public static void main(String[ ] args)
        {
            // Program code here

        }
}
```

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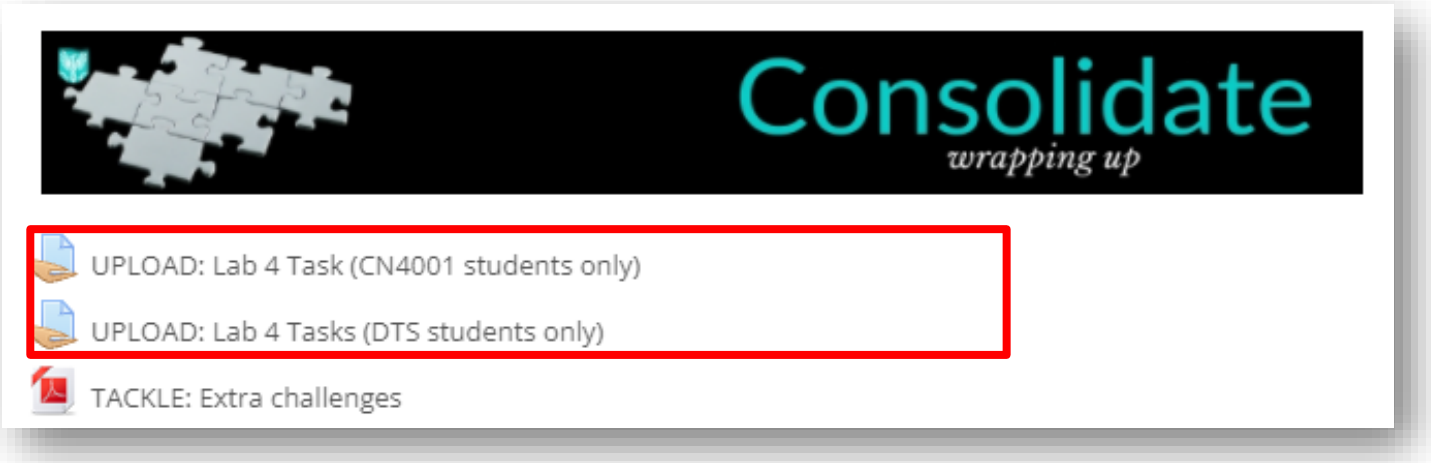

Downlaod your SecretsApp.java file from JDoodle and upload to Moodle so your tutor can check you have completed this task successfully – using the appropriate submission link.

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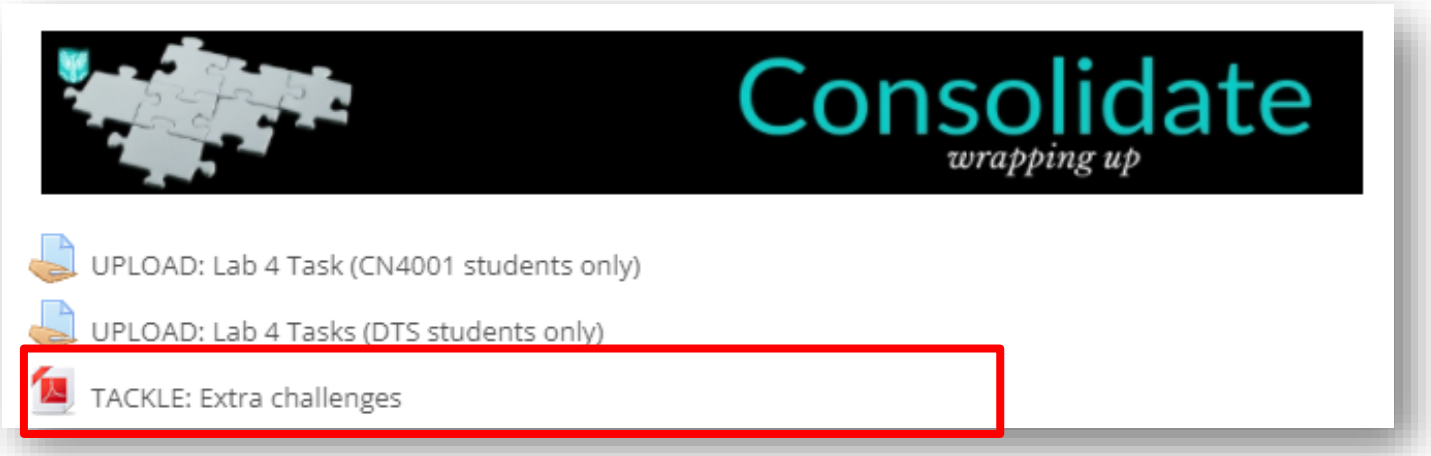

Spend the rest of the time in this practical working on the extra challenges.