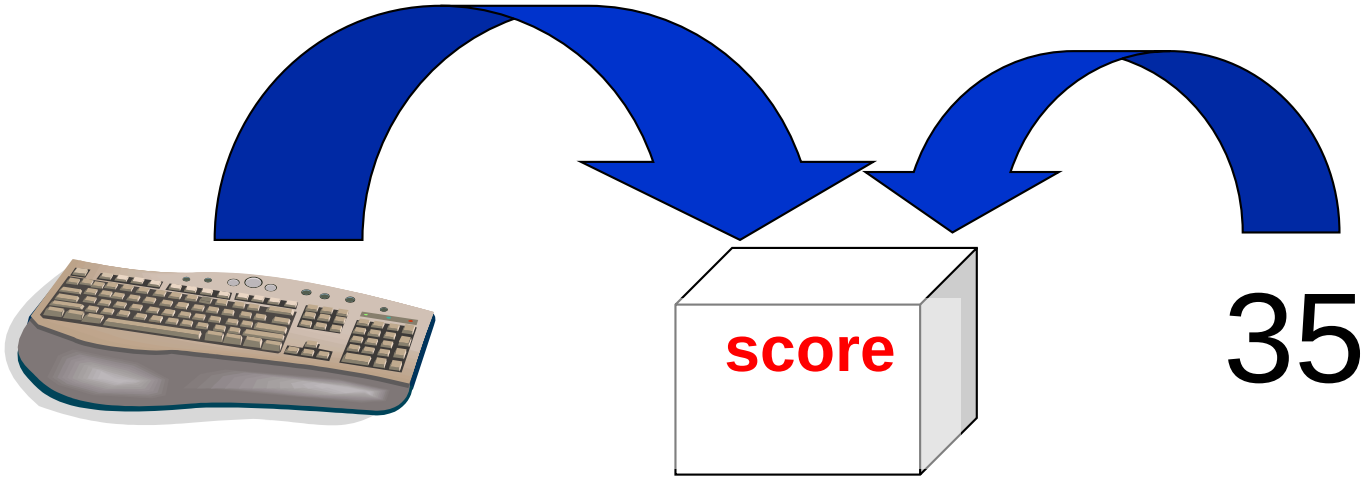
CN4001/ CD4001
Software Development
Topic 3: Building Blocks
Part 5

```
*** Rectangle App ***

Area of rectangle  = 75.0
```

RUN

Keyboard input



The *Scanner* class was added into Java to simplify keyboard input.

In order to have access to the *Scanner* class you have to place the following line at the beginning of your program:

```
import java.util.*;
```

In order to have access to the *Scanner* class you have to place the following line at the beginning of your program:

```
import java.util.*;
```

Or the following line at the beginning of your program:

```
import java.util.Scanner;
```

You will then need to write the following instruction inside your program:

```
Scanner keyboard = new Scanner(System.in);
```

You will then need to write the following instruction inside your program:

```
Scanner keyboard = new Scanner(System.in);
```

Can be any name

You will then need to write the following instruction inside your program:

```
Scanner kbd = new Scanner(System.in);
```

You will then need to write the following instruction inside your program:

```
Scanner sc = new Scanner(System.in);
```

You will then need to write the following instruction inside your program:

```
Scanner keyboard = new Scanner(System.in);
```

If we want a user to type in an integer at the keyboard, into the variable x :

```
x = keyboard.nextInt();
```

If we want a user to type in a double at the keyboard, into the variable y :

```
y = keyboard.nextDouble();
```

If we want a user to type in a character at the keyboard, into the variable z :

```
z = keyboard.next().charAt(0);
```

Revisiting the *Rectangle* program

```
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;

                System.out.println("*** Rectangle App ***");

                length = 7.5;

                height = 10;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = 7.5;

                height = 10;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = ?;

                height = 10;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

Activity

“Use the Scanner object to enter a value into length.”

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = ?;

                height = 10;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = sc.nextDouble();

                height = 10;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = sc.nextDouble();
                System.out.print("Enter rectangle height: ");
                height = 10;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = sc.nextDouble();
                System.out.print("Enter rectangle height: ");
                height = ?;
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
import java.util.*;
public class RectangleApp
{
        public static void main (String [ ] args)
        {
                double length, height, area;
                Scanner sc = new Scanner (System.in);
                System.out.println("*** Rectangle App ***");
                System.out.print("Enter rectangle length: ");
                length = sc.nextDouble();
                System.out.print("Enter rectangle height: ");
                height = sc.nextDouble();
                area = length * height;
                System.out.println("Area of rectangle = " + area);
        }
}
```

```
*** Rectangle App ***
Enter rectangle length: 7.5
Enter rectangle height:  10
Area of rectangle  = 75.0
```

RUN

```
*** Rectangle App ***
Enter rectangle length: 50
Enter rectangle height: 17.5
Area of rectangle  = 875.0
```

RUN

Creating constants

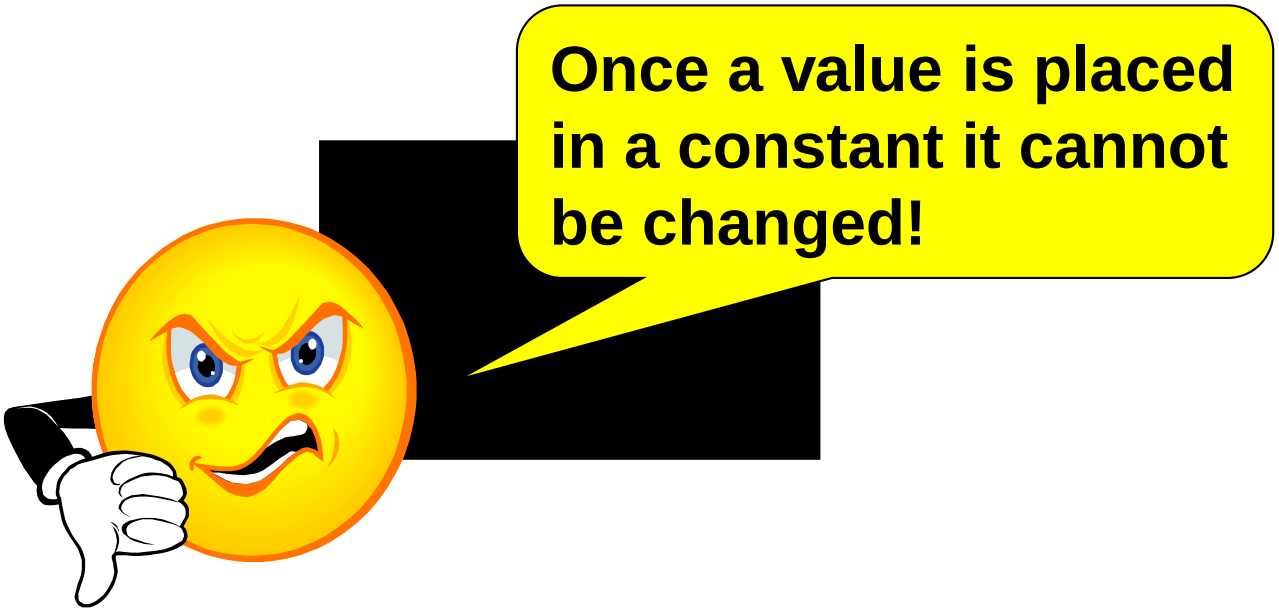
- **the maximum score in an exam (100);**
- **the number of hours in a day (24);**
- **the mathematical value of π (3.142).**

```
int HOURS ;
```

```
final int HOURS ;
```

```
final int HOURS;
HOURS = 24;
```

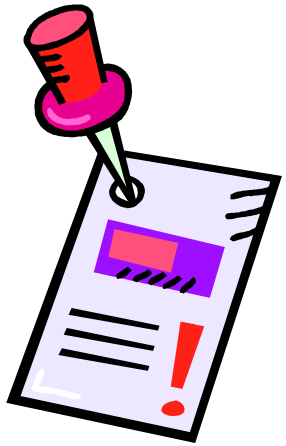
```
final int HOURS;
HOURS = 24;
HOURS = 10;
```



```
final int HOURS;
HOURS = 24;
```

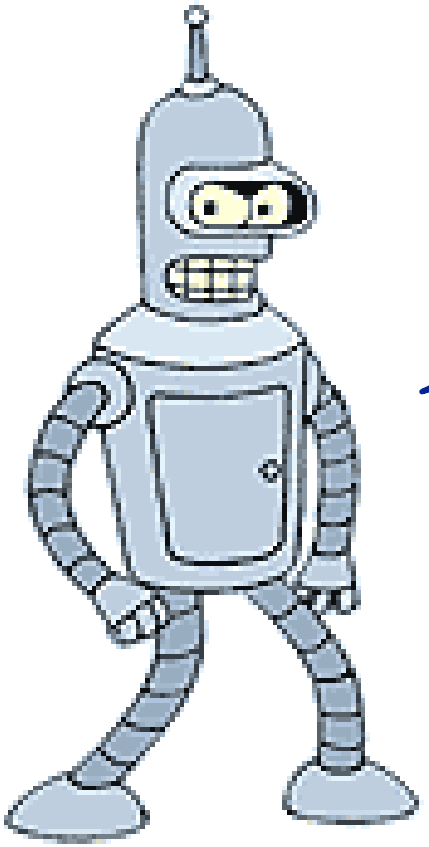
```
final int HOURS = 24;
```

Adding comments to a program..



```
// this is a short comment, so we use the first method
public class Hello
{
   public static void main(String[] args)
   {
         System.out.println("Hello world");
   }
 /* this is the second method of including comments –
    it is more convenient to use this method here,
    because the comment is longer and goes over more
    than one line */
}
```

```
/**    This is a Javadoc style of comments
 *     @author Aaron Kans
 *     @version 5/10/2020
 */
public class Hello
{
   public static void main(String[] args)
   {
         System.out.println("Hello world");
   }
}
```



Rember your lab tasks will count towards your marks from now on!