PSLG Session 3

Ran by Amy and Ben

DLSH Brightspace enrollment QR code.

ICTLC Online QR Code:

The agenda for today

In todays session we'll be covering:

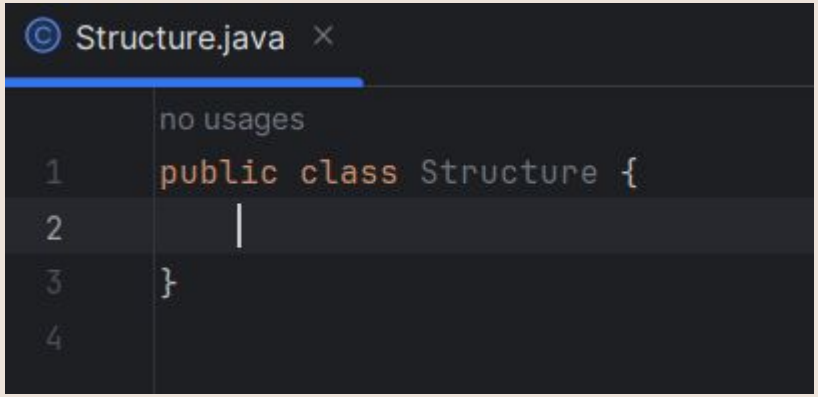
- Basic code structure.
- Some more if else statements.
- While loops.

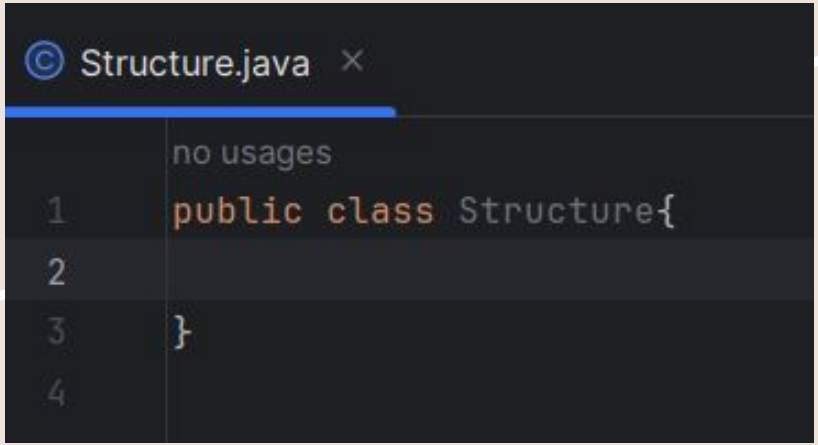
Some code structure.

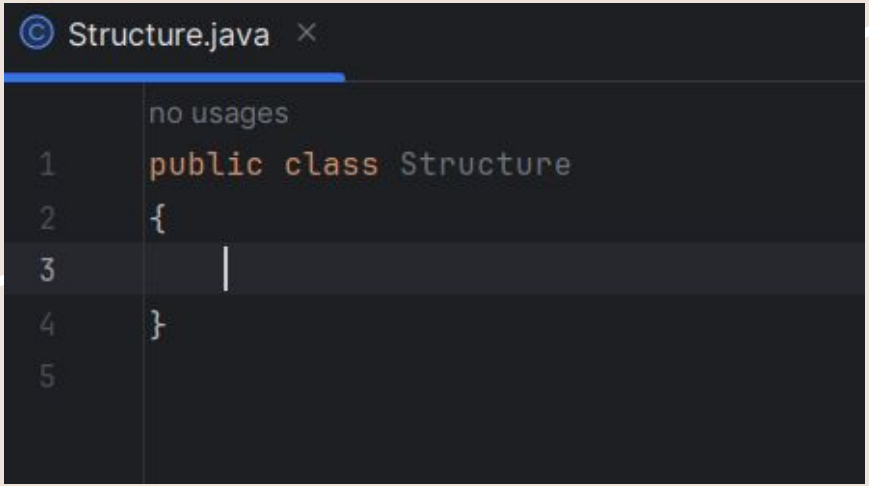
In java we follow some basic structure conventions that makes our code work and makes it easier to read.

This basic structure is mostly to do with your class and your main method and indentation when writing longer pieces of code.

How to best structure a class:







How to then best structure a main method:

Structure.java

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

Structure.java

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

Structure.java

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

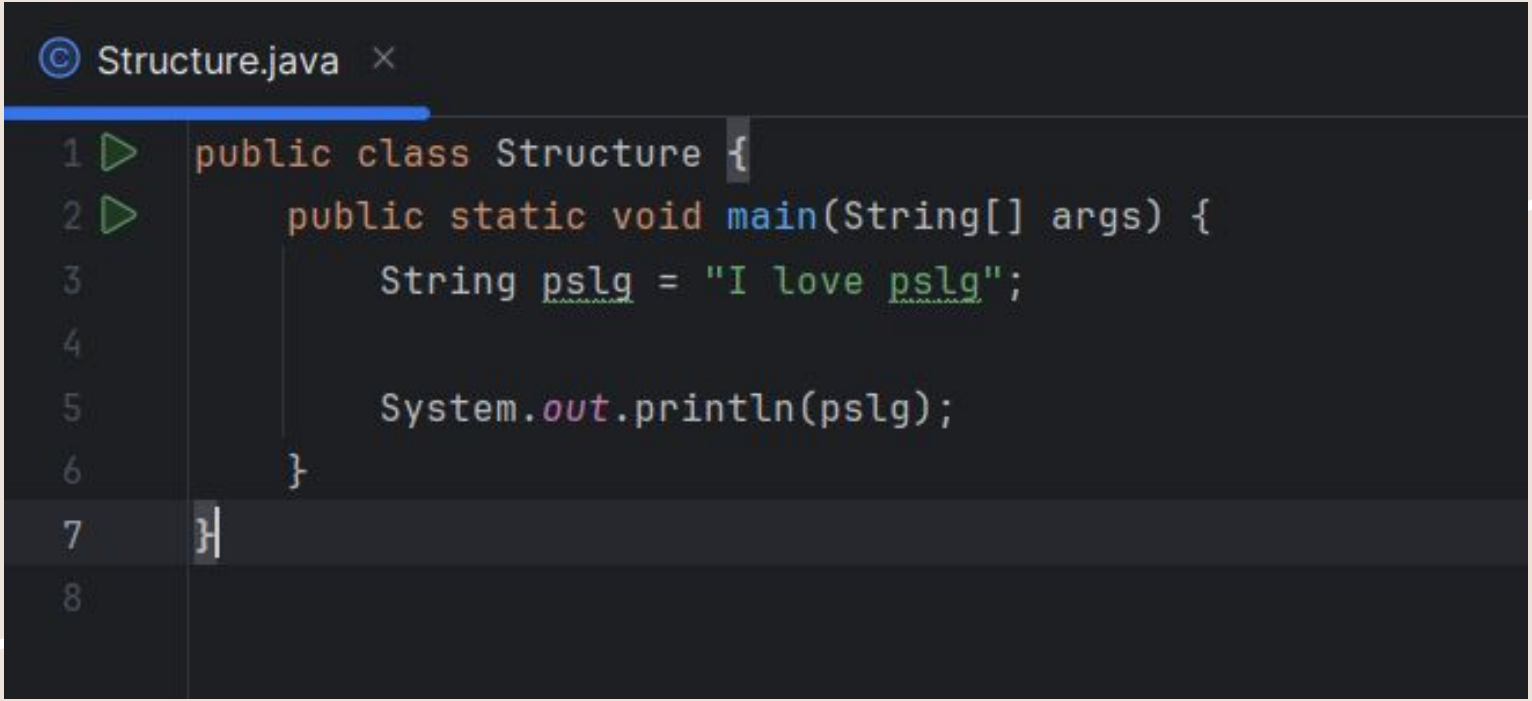
Where does your code go?

Your code goes inside the main method. Any of the code to answer a problem goes inside the main method. This will be expanded upon later in the semester and next semester so only worry about this for now.

Basic structure question

Initialise a public class called Structure and a main method. Create a String variable that contains any string of your choosing and print it to the terminal.
Use any structure you want from the three shown and ensure you've declared your classes and methods correctly before compiling (i.e. having no red underlines underneath any keywords in your class or method declaration)

Solution


Structure.java
public class Structure {
public static void main(String[] args) {
String pslg = "I love pslg";
System.out.println(pslg);
}
}

If else syntax

```
if(relational expression){
    Your statement;
} //end if
```

```
if(relational expression){
        Your statement;
    }else{
        Next statement;
    }
//else condition only plays out if the if condition is false and the else one is true
```

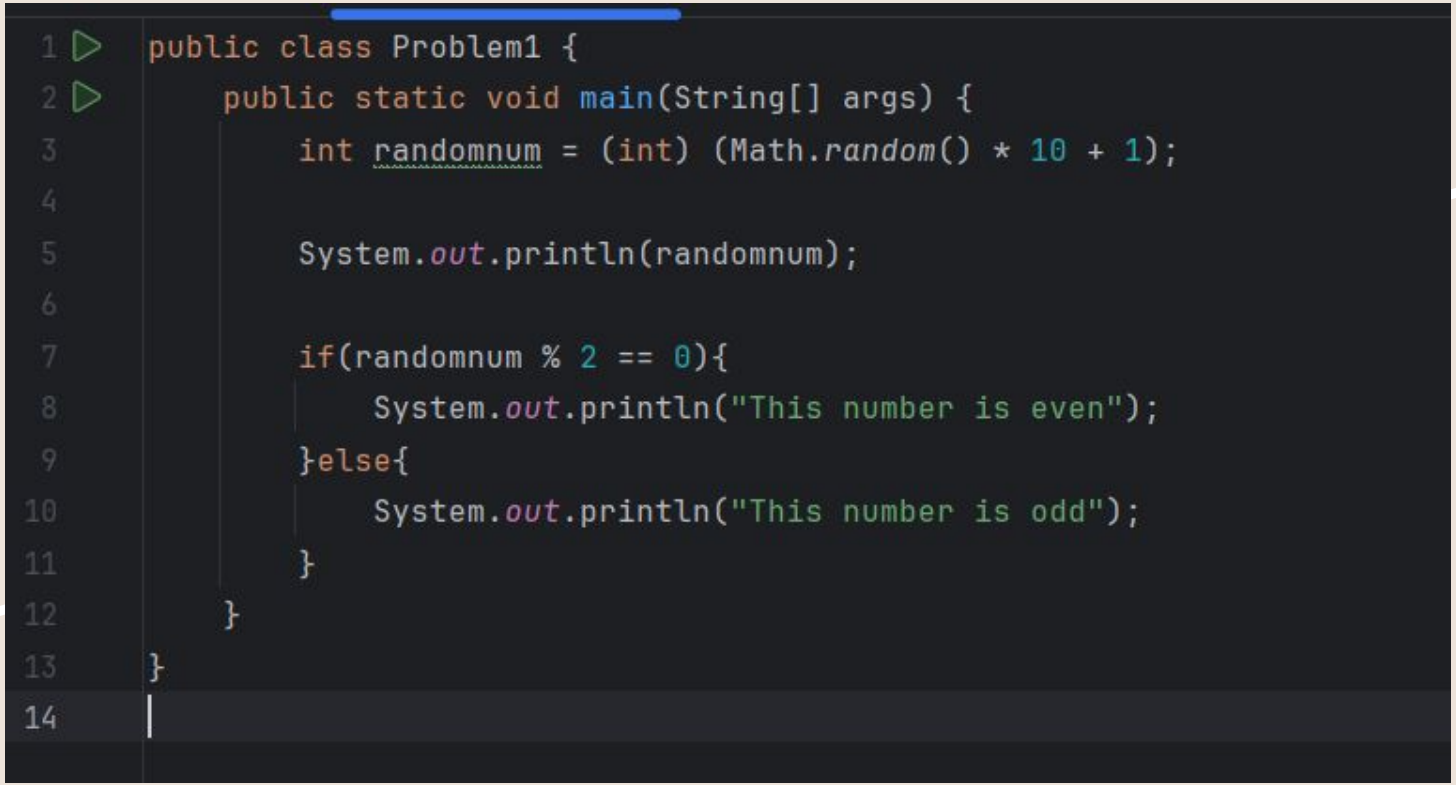
If else syntax contd.

```
if(relational expression){
    Your Statement;
}else if(new relational expression){
    Next statement(1);
}else{
    Next statement(2);
}//a bit long but very useful.
```

If else problem

Create a class called Problem1 and make a main method.
Create an integer variable with a random number between 1 and 10 and write a program that checks if that number is odd or even. Print the random number and print whether it is odd or even.

If else statement solution



```java
public class Problem1 {
    public static void main(String[] args) {
        int randomnum = (int) (Math.random() * 10 + 1);

        System.out.println(randomnum);

        if(randomnum % 2 == 0){
            System.out.println("This number is even");
        }else{
            System.out.println("This number is odd");
        }
    }
}
```

While loop syntax

Syntax:

```
int iterate = 0;
While(condition){
    Program Statement;
    iterateChanges;
}
```

Example:

```
int i = 0;
While (i<3){
    System.out.print(i);
    i++;
}
```

While loop problem

Create a class called Problem2 and make a main method.
Create a random number between 1 and 20, create a while loop that iterates up to the randomly generated number and returns the sum of all the even numbers up to that number.

While loop solution

```java
public class Problem3 {
    public static void main(String[] args) {
        //Creating our random number
        int random = (int) ((Math.random()*20)+1);

        //Declaring our iterate
        int i = 0;

        //Initialising the sum Variable
        int sum = 0;

        //While loop
        while(i<random){
            //Condition for if it's even
            if(i % 2 == 0){
                sum += i;
            }
            i++;
        }
        System.out.println("The random number is " + random + "The sum of the even terms is " + sum);

    }
}
```