Snippet 1.

```
public class Main {
 public void main(String[] args) {
 System.out.println("Hello, World!");
 }
}
```

// Error

```
/*
E:\CDAC JAVA CODE\Assignment 3>java Main
Error: Main method is not static in class Main, please define the main method as:
   public static void main(String[] args)


*/
```

// correct

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World!");
 }
}
```

//output

```
Hello, World!
```

Snippet 2

```
public class Main {
 static void main(String[] args) {
 System.out.println("Hello, World!");
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>java Main
Error: Main method not found in class Main, please define the main method as:
   public static void main(String[] args)
or a JavaFX application class must extend javafx.application.Application
```

ou

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World!");
 }
}
```

//output

```
Hello, World!
```

Snippet 3.

```
public class Main {
 public static int main(String[] args) {
 System.out.println("Hello, World!");
 return 0;
 }
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java
Main.java:5: error: reached end of file while parsing
 }
  ^
1 error
```

//correct

```
public class Main {
 public static int main(String[] args) {
 System.out.println("Hello, World!");
 return 0;
 }
}
```

//output

```
Hello, World!
```

Snippet 4.

```
/*
public class Main {
 public static void main() {
 System.out.println("Hello, World!");
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java

E:\CDAC JAVA CODE\Assignment 3>java Main
Error: Main method not found in class Main, please define the main method as:
   public static void main(String[] args)
or a JavaFX application class must extend javafx.application.Application
 */
```

//correct

```
public class Main {
 public static void main(String[] arg) {
 System.out.println("Hello, World!");
 }
}
```

//Output

```
Hello, World!
```

Snippet 5.

```
/* public class Main {
 public static void main(String[] args) {
 System.out.println("Main method with String[] args");
 }
 public static void main(int[] args) {
 System.out.println("Overloaded main method with int[] args");
 }
}

//Error

E:\CDAC JAVA CODE\Assignment 3>javac Main.java

E:\CDAC JAVA CODE\Assignment 3>java Main
Main method with String[] args

*/
//correct

public class Main {
    public static void main(String[] args) {
        System.out.println("Main method with String[] args");
        int[] intArgs = {1, 2, 3};
        main(intArgs);
    }
    public static void main(int[] args) {
        System.out.println("Overloaded main method with int[] args");
    }
```

}

//output

Main method with String[] args

Overloaded main method with int[] args

The JVM always calls main(String[] args) first when running the program.

The overloaded main(int[] args) method does not execute automatically.

You must call the overloaded main(int[] args) manually inside main(String[] args).

Snippet 6.

```
public class Main {
 public static void main(String[] args) {
 int x = y + 10;
 System.out.println(x);
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java
Main.java:3: error: cannot find symbol
 int x = y + 10;
         ^
  symbol:   variable y
  location: class Main
1 error
```

//Correct

```
public class Main {
 public static void main(String[] args) {
 int y = 1;
 int x = y + 10;
 System.out.println(x);
 }
}
```

//output

```
 11
```

Snippet 7.

```
/* public class Main {
 public static void main(String[] args) {
 int x = "Hello";
 System.out.println(x);
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java
Main.java:3: error: incompatible types: String cannot be converted to int
 int x = "Hello";
         ^
1 error
*/
```

//correct

```
public class Main {
 public static void main(String[] args) {
 String x ="Hello";
 System.out.println(x);
 }
}
```

//Output

```
 Hello
```

Snippet 8.

```
/*
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World!"
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java
Main.java:3: error: ')' expected
 System.out.println("Hello, World!"
                            ^
1 error
*/
```

//Correct

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World!");
 }
}
```

//output

```
Hello, World!
```

Snippet 9.

```
public class Main {
 public static void main(String[] args) {
 int class = 10;
 System.out.println(class);
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java
Main.java:3: error: not a statement
 int class = 10;
 ^
Main.java:3: error: ';' expected
 int class = 10;
   ^
Main.java:3: error: <identifier> expected
 int classn = 10;
        ^
Main.java:4: error: <identifier> expected
 System.out.println(class);
                ^
Main.java:4: error: illegal start of type
 System.out.println(class);
                 ^
Main.java:4: error: <identifier> expected
 System.out.println(class);
                    ^
```

Main.java:6: error: reached end of file while parsing

}

 ^

7 errors

//correct

```
public class Main {
 public static void main(String[] args) {
 int classnum = 10;
 System.out.println(classnum);
 }
}
```

//output

10

Snippet 10.

```
public class Main {
 public void display() {
 System.out.println("No parameters");
 }
 public void display(int num) {
 System.out.println("With parameter: " + num);
 }
 public static void main(String[] args) {
 display();
 display(5);
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java
Main.java:9: error: non-static method display() cannot be referenced from a static context
 display();
 ^
Main.java:10: error: non-static method display(int) cannot be referenced from a static context
 display(5);
 ^
2 errors
```

//correct

```
public class Main {
```

```
    public void display() {
        System.out.println("No parameters");
    }

    public void display(int num) {
        System.out.println("With parameter: " + num);
    }

    public static void main(String[] args) {

        Main obj = new Main();



        obj.display();
        obj.display(5);         }
}
```

//output

```
No parameters
With parameter: 5
```

Snippet 11. /*

```
public class Main {
 public static void main(String[] args) {
```

```
 int[] arr = {1, 2, 3};
 System.out.println(arr[5]);
 }
}
```

//Error

```
E:\CDAC JAVA CODE\Assignment 3>javac Main.java

E:\CDAC JAVA CODE\Assignment 3>java Main
Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 3
        at Main.main(Main.java:4)
```

***///correct**

```
public class Main {
 public static void main(String[] args) {
 int[] arr = {1, 2, 3, 4, 5, 6};
 System.out.println(arr[5]);
 }
}
```

Snippet 12.

```
public class Main {
 public static void main(String[] args) {
 while (true) {
 System.out.println("Infinite Loop");
 }
 }
```

```
}
```

//output

```
Infinite Loop
Infinite Loop
Infinite Loop
Infinite Loop
Infinite Loop
...
```

// correct

```
 public class Main {
    public static void main(String[] args) {
        int count = 0;

        while (count < 5) {
            System.out.println("Loop iteration: " + count);
            count++;         }
    }
}
```

Snippet 13.

```
public class Main {
 public static void main(String[] args) {
 String str = null;
 System.out.println(str.length());
 }
}
```

//Errror

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
```

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>java Main
Exception in thread "main" java.lang.NullPointerException
        at Main.main(Main.java:4)
```

//correct

```
public class Main {
 public static void main(String[] args) {
 String str = " ";
 System.out.println(str.length());
 }
}
```

Snippet 14.

```
public class Main {
 public static void main(String[] args) {
 double num = "Hello";
 System.out.println(num);
 }
}
```

// Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:3: error: incompatible types: String cannot be converted to double
 double num = "Hello";
              ^
1 error
```

```
public class Main {
 public static void main(String[] args) {
```

```
 String num = "Hello";
 System.out.println(num);
 }
}
```

//Output

Hello

Snippet 15

```
public class Main {
 public static void main(String[] args) {
 int num1 = 10;
 double num2 = 5.5;
 int result = num1 + num2;
 System.out.println(result);
 }
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:5: error: incompatible types: possible lossy conversion from double to int
 int result = num1 + num2;
              ^
1 error
```

//Correct

```
public class Main {
 public static void main(String[] args) {
 int num1 = 10;
 double num2 = 5.5;
```

```
 double result = num1 + num2;
 System.out.println(result);
 }
}
```

//output

15.5

Snippet 16.

```
public class Main {
 public static void main(String[] args) {
 int num = 10;
 double result = num / 4;
 System.out.println(result);
 }
}
```

//Error

output 2 but

actual Answer is 2.5

//correct

```
public class Main {
 public static void main(String[] args) {
 int num = 10;
 double result =(double) num / 4;
 System.out.println(result);
 }
}
```

//output

2.5

Snippet 17

```
public class Main {
 public static void main(String[] args) {
 int a = 10;
 int b = 5;
 int result = a ** b;
 System.out.println(result);
 }
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:5: error: illegal start of expression
 int result = a ** b;
              ^
1 error
```

//correct

```
public class Main {
 public static void main(String[] args) {
 int a = 10;
 int b = 5;
 int result = Math.pow(a,b);
 System.out.println(result);
 }
}
```

//output

100000

Snippet 18.

```
public class Main {
 public static void main(String[] args) {
 int a = 10;
 int b = 5;
 int result = a + b * 2;
 System.out.println(result);
 }
}
```

//Error

E:\CDAC JAVA CODE ASSIGNMENT\Assignment 3>javac Main.java

E:\CDAC JAVA CODE ASSIGNMENT\Assignment 3>java Main

20

//correct

Multiplication (*), division (/), and modulus (%) have higher precedence than addition (+) and subtraction (-).

Snippet 19.

```
public class Main {
 public static void main(String[] args) {
 int a = 10;
 int b = 0;
```

```
 int result = a / b;
 System.out.println(result);
 }
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java

E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>java Main
Exception in thread "main" java.lang.ArithmeticException: / by zero
        at Main.main(Main.java:5)
```

integer division by zero is not allowed, which causes an ArithmeticException at runtime.

//Correct

```
public class Main {
 public static void main(String[] args) {
 int a = 10;
 double b = 0.0;
 double result = a / b;
 System.out.println(result);
 }
}
```

//output

```
Infinity
```

Snippet 20.

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World")
 }
```

```
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:3: error: ';' expected
 System.out.println("Hello, World")
                               ^
1 error
```

//correct

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World");
 }
}
```

//output

```
Hello, World
```

Snippet 21.

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World!");
 // Missing closing brace here
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:5: error: reached end of file while parsing
}
 ^
```

1 error

//correct

```
public class Main {
 public static void main(String[] args) {
 System.out.println("Hello, World!");
 // Missing closing brace here
}
}
```

//output

Hello, World

Snippet 22.

```
public class Main {
 public static void main(String[] args) {
 static void displayMessage() {
 System.out.println("Message");
 }
 }
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:3: error: illegal start of expression
 static void displayMessage() {
 ^
Main.java:7: error: class, interface, or enum expected
}
^
```

2 errors

//Correct

```
public class Main {

static void displayMessage() {
 System.out.println("Message");
 }
 public static void main(String[] args) {
 displayMessage();
 }
```

//output

Message

Snippet 23.

```
public class Main {
 public static void main(String[] args) {
 int value = 2;
 switch(value) {
 case 1:
 System.out.println("Value is 1");
 case 2:
 System.out.println("Value is 2");
 case 3:
 System.out.println("Value is 3");
 default:
 System.out.println("Default case");
```

```
 }
 }
}
```

//Error

There should be Add break statement in all case

//Correct

```
public class Main {
 public static void main(String[] args) {
 int value = 2;
 switch(value) {
 case 1:
 System.out.println("Value is 1");
 break;
 case 2:
 System.out.println("Value is 2");
break;
 case 3:
System.out.println("Value is 3");
break;
 default:
 System.out.println("Default case");
 }
 }
}
```

//output

Value is 2

Snippet 24.

```
public class Main {
 public static void main(String[] args) {
 int level = 1;
 switch(level) {
 case 1:
 System.out.println("Level 1");
 case 2:
 System.out.println("Level 2");
 case 3:
 System.out.println("Level 3");
 default:
 System.out.println("Unknown level");
 }
 }
}
```

//Error

break statment should be add

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java

E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>java Main
Level 1
Level 2
Level 3
Unknown level
```

//Correct

```
public class Main {
```

```
 public static void main(String[] args) {
 int level = 1;
 switch(level) {
 case 1:
 System.out.println("Level 1");
 break;
 case 2:
 System.out.println("Level 2");
 break;
 case 3:
 System.out.println("Level 3");
 break;
 default:
 System.out.println("Unknown level");
 }
 }
}
```

//output

Level 1

Snippet 25.

```
public class Main {
 public static void main(String[] args) {
 double score = 85.0;
 switch(score) {
 case 100:
 System.out.println("Perfect score!");
```

```
 break;
 case 85:
 System.out.println("Great job!");
 break;
 default:
 System.out.println("Keep trying!");
 }
 }
}
```

//Error

```
E:\CDAC JAVA CODE  ASSIGNMENT\Assignment 3>javac Main.java
Main.java:4: error: incompatible types: possible lossy conversion from double to int
 switch(score) {
      ^
1 error
```

double values are not valid case labels, causing the compilation error.

//Correct

```
public class Main {
 public static void main(String[] args) {
 int score = 85;
 switch(score) {
 case 100:
 System.out.println("Perfect score!");
 break;
```

```
 case 85:
 System.out.println("Great job!");
 break;
 default:
 System.out.println("Keep trying!");
 }
 }
}
//output
Great job!
```

Snippet 26.

```
public class Main {
 public static void main(String[] args) {
 int number = 5;
 switch(number) {
 case 5:
 System.out.println("Number is 5");
 break;
 case 5:
 System.out.println("This is another case 5");
 break;
 default:
 System.out.println("This is the default case");
 }
 }
}
```

//Error

E:\CDAC JAVA CODE ASSIGNMENT\Assignment 3>javac Main.java

Main.java:8: error: duplicate case label

 case 5:

 ^

1 error

//Correct

```
public class Main {
 public static void main(String[] args) {
 int number = 5;
 switch(number) {
 case 4:
 System.out.println("Number is 5");
 break;
 case 5:
 System.out.println("This is another case 5");
 break;
 default:
 System.out.println("This is the default case");
 }
 }
}
```

//output

This is another case 5