Snippet 1

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

Error:

Error: Main method is not static in class Main, please define the main method as:
   public static void main(String[] args)

Correct code:

----

snippet 2 :

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

Error: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 code:

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

}

output:

Hello, World!

----

snippet 3:

```java
public class Main {

public static int main(String[] args) {

System.out.println("Hello, World!");

return 0;

}
```

Error:

```
Main.java:5: error: reached end of file while parsing

}

 ^

1 error
```

Correct code:

```java
public class Main {

public static int main(String[] args) {

System.out.println("Hello, World!");

return 0;

}

}
```

Output:

Hello,World

----

snippet 4:

```java
public class Main {

public static void main() {
```

```java
System.out.println("Hello, World!");

}

}
```

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 code:

```java
public class Main {

public static void main(String args[]) {

System.out.println("Hello, World!");

}

}
```

Output:

Hello,World

Snippet 5

```java
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");

}

}
```

output:

Main method with String[] args

Snippet 6

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

Error

```
Main.java:3: error: cannot find symbol
int x = y + 10;
    ^
 symbol:   variable y
 location: class Main
1 error
```

Correct output:

```java
public class Main {
public static void main(String[] args) {
int y=5;
int x = y + 10;
System.out.println(x);
}
}
```

output:15

Snippet 7

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

```
}
```

Error:

Main.java:3: error: incompatible types: String cannot be converted to int

int x = "Hello";

     ^

1 error

Correct code:

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

output:

Hello

Snippet 8

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

Error:

Main.java:3: error: ')' expected

System.out.println("Hello, World!"

^

1 error

Correct code :

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:

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

Output:10

--Snippet 10
```java
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) {
```

```java
display();

display(5);

}

}
```

Error:

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 code:

```java
public class Main {

public static void display() {

System.out.println("No parameters");

}

public static void display(int num) {

System.out.println("With parameter: " + num);

}

public static void main(String[] args) {

display();

display(5);

}

}
```


Output:

No parameters

With parameter: 5

Snippet 11

```java
public class Main {

public static void main(String[] args) {

int[] arr = {1, 2, 3};

System.out.println(arr[5]);

}

}
```

Error:

Exception in thread "main" java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 3

    at Main.main(Main.java:4)

Correct code:

```java
public class Main {

public static void main(String[] args) {

int[] arr = {1, 2, 3};

System.out.println(arr[2]);

}

}
```

Output:3

Snippet 12

```java
 public class Main {

public static void main(String[] args) {

while (true) {

System.out.println("Infinite Loop");

}

}
```

}

Error: Infinite Loop(infinte time)

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

Output: Infinite Loop(1 time)

----

snippet 13

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

Error:
Exception in thread "main" java.lang.NullPointerException
    at Main.main(Main.java:4)

Correct code:

```java
public class Main {
public static void main(String[] args) {
String str = "Isha";
```

```java
System.out.println(str.length());

}

}
```

Output:4

Snippet 14

```java
public class Main {

public static void main(String[] args) {

double num = "Hello";

System.out.println(num);

}

}
```

Error:

Main.java:3: error: incompatible types: String cannot be converted to double

```java
double num = "Hello";

        ^
```

1 error

Snippet 15

```java
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:

Main.java:5: error: incompatible types: possible lossy conversion from double to int

```
int result = num1 + num2;
          ^
1 error
```

Correct code:

```java
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

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

output:

2.0

Snippet 17

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

```java
int a = 10;
int b = 5;
int result = a ** b;
System.out.println(result);
}
}
```

Error:

Main.java:5: error: illegal start of expression

```java
int result = a ** b;
```

            ^

1 error

correct code:

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

output:

5o

Snippet 18

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

```java
int a = 10;

int b = 5;

int result = a + b * 2;

System.out.println(result);

}

}
```

output: 20

Snippet 19

```java
public class Main {

public static void main(String[] args) {

int a = 10;

int b = 0;

int result = a / b;

System.out.println(result);

}

}
```

Error:

Exception in thread "main" java.lang.ArithmeticException: / by zero

    at Main.main(Main.java:5)

Correct code:

```java
public class Main {

public static void main(String[] args) {

int a = 10;

int b = 2;

int result = a / b;

System.out.println(result);

}
```

}

Output : 5

Snippet 20

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

Error:

```
Main.java:3: error: ';' expected
System.out.println("Hello, World")
                  ^
1 error
```

```
Main.java:3: error: ';' expected
System.out.println("Hello, World")
                  ^
1 error
```

Correct code:

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

output:

Hello, World

Snippet 21

```java
public class Main {

public static void main(String[] args) {

System.out.println("Hello, World!");

// Missing closing brace here

}
```

Error:

Main.java:5: error: reached end of file while parsing

```
}
 ^
```

1 error

correct code:

```java
public class Main {

public static void main(String[] args) {

System.out.println("Hello, World!");

}

}
```

output:

Hello, World

Snippet 22

```java
public class Main {

public static void main(String[] args) {

static void displayMessage() {

System.out.println("Message");
```

```
        }
    }
}
```

Error:

Main.java:3: error: illegal start of expression

static void displayMessage() {

^

Main.java:7: error: class, interface, or enum expected

}

^

2 error

Snippet 23

```java
public class Confusion {
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");
}
}
}
```

output:

Value is 2

Value is 3

Default case

Value is 3 is print after Value is 2 becoz there is no break; statement

----

Snippet 24

```
public class MissingBreakCase {

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");

}

}

}
```

output:

Level 1

Level 2

Level 3

Unknown level

Ans:

Break statement terminates the loop after excuting the while condition

----

Snippet 25

```java
public class Switch {
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:

```
Switch.java:4: error: incompatible types: possible lossy conversion from double to int
switch(score) {
       ^
1 error
```

Correct code:

```java
public class Switch {
public static void main(String[] args) {
int score = 85.0;
switch(score) {
case 100:
```

```java
System.out.println("Perfect score!");

break;

case 85:

System.out.println("Great job!");

break;

default:

System.out.println("Keep trying!");

}

}

}
```

Snippet 26

```java
public class Switch {

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:

Switch.java:8: error: duplicate case label

case 5:

^

1 error

correct code:

```java
public class Switch {

public static void main(String[] args) {

int number = 5;

switch(number) {

case 5:

System.out.println("Number is 5");

break;

case 3:

System.out.println("This is another case 5");

break;

default:

System.out.println("This is the default case");

}

}

}
```

 output:Number is 5