**Snippet 1:**

public class InfiniteForLoop {

public static void main(String[] args) {

for (int i = 0; i < 10; i--) {

System.out.println(i); } } }

**Ans**: Because of we decrement the value of I (i--) that’s why the loop run infinitely. To resolve that issue we need to set i++ instead of i—

class InfiniteForLoop {

public static void main(String[] args) {

for (int i = 0; i < 10; i++) {

System.out.println(i);

} }}

**Snippet 2:**

public class IncorrectWhileCondition {

public static void main(String[] args) {

int count = 5;

while (count = 0) {

System.out.println(count); count--; } } }

**Ans:** In this Snippet count is equal to 5 and while loop condition has count = 0 instead of this we need to use count == 5

class IncorrectWhileCondition {

public static void main(String[] args) {

int count = 5;

while (count == 5) {

System.out.println(count);

count--;

} }}

**Snippet 3:**

public class DoWhileIncorrectCondition {

public static void main(String[] args) {

int num = 0;

do { System.out.println(num);

num++; }

while (num > 0);

} }

**Ans:** as per the que while condition(num>0) evaluates to true always as we perform increment operation on a num.

**Snippet 4:**

public class OffByOneErrorForLoop {

public static void main(String[] args) {

for (int i = 1; i <= 10; i++) {

System.out.println(i); }

// Expected: 10 iterations with numbers 1 to 10 // Actual: Prints numbers 1 to 10, but the task expected only 1 to 9

} }

**Ans**:in this program expected output from 1to9 for this we chage the condition i<=10 to 1<10.

class OffByOneErrorForLoop {

public static void main(String[] args) {

for (int i = 1; i < 10; i++) {

System.out.println(i);

}}}

**Snippet 5:**

public class WrongInitializationForLoop {

public static void main(String[] args) {

for (int i = 10; i >= 0; i++) {

System.out.println(i);

} } }

**Ans:** this program excutes infinite type because the for loop codition was initialize from 10 and condition was i>=0; this loop start from 10 and excutes infinte time for correcting this we initialize the I from 0 and condition and put condition as i<=10;

class WrongInitializationForLoop {

public static void main(String[] args) {

for (int i = 0; i <= 10; i++) {

System.out.println(i);

} }}

**Snippet 6:**

public class MisplacedForLoopBody {

public static void main(String[] args) {

for (int i = 0; i < 5; i++)

System.out.println(i);

System.out.println("Done");

} }

**Ans**: Done is print once bcz this statement access the out of loop.to print done in every one instance we insert a both printing statemt in loop using curly braces{}.

class MisplacedForLoopBody {

public static void main(String[] args) {

for (int i = 0; i < 5; i++){

System.out.println(i);

System.out.println("Done");

}}}

**Snippet 7:**

public class UninitializedWhileLoop {

public static void main(String[] args) {

int count;

while (count < 10) {

System.out.println(count);

count++;

} } }

**Ans:** In this sninnep we should initialize the count variable as count=o or count=any nymber that should be print from starting to get output.

class UninitializedWhileLoop {

public static void main(String[] args) {

int count=0;

while (count < 10) {

System.out.println(count);

count++;

} }}

**Snippet 8:**

public class OffByOneDoWhileLoop {

public static void main(String[] args) {

int num = 1;

do { System.out.println(num);

num--; }

while (num > 0);

} }

Ans: we got unexpected number bcz we decrement the of num and due to wrong condition while(num>0) that’s why its print a all negative numbers.we need to increment the num value instead of decrement, and chage the while condition as num<=5.

class OffByOneDoWhileLoop {

public static void main(String[] args) {

int num = 1;

do {

System.out.println(num);

num++;

}

while (num <=5);

}}

**Snippet 9:**

public class InfiniteForLoopUpdate {

public static void main(String[] args) {

for (int i = 0; i < 5; i += 2) {

System.out.println(i);

} } }

**Ans:**This program is totally correct to update will require for erpression to be correct.

**Output:**

0

2

4

**Snippet 10:**

public class IncorrectWhileLoopControl {

public static void main(String[] args) {

int num = 10;

while (num = 10) {

System.out.println(num); num--;

} } }

**Snippet 11:**

public class IncorrectLoopUpdate {

public static void main(String[] args) {

int i = 0;

while (i < 5) {

System.out.println(i);

i += 2;

// Error: This may cause unexpected results in output

} } }

**Ans:**The Output of this loop is 0 2 4 loop variable is incremented by 2 in each iteration.to achieve disred outout variable is incremented by 1 only.

class IncorrectLoopUpdate {

public static void main(String[] args) {

int i = 0;

while (i < 5) {

System.out.println(i);

i++; } }}

**Snippet 12:**

public class LoopVariableScope {

public static void main(String[] args) {

for (int i = 0; i < 5; i++) {

int x = i \* 2;

} System.out.println(x);

// Error: 'x' is not accessible here } }

**Ans:**X is initialize inside the for loop and we are trying to access it out of the scope of for loop.

class LoopVariableScope {

public static void main(String[] args) {

for (int i = 0; i < 5; i++) {

int x= i \* 2;

System.out.println(x);

} }}