Debug the following programs (using Eclipse) -

1. Equals.java – understand the difference

2. Switch2.java – Recognise the problem before debugging

3. Loops\_Reverse.java – Debug and fix

4. SimpleExampleSO.java and Car.java - – Debug and fix

5. Area.java – Provide a fix though there is no bug

6. Trial.java – Debug and fix

7. BSE.java – Debug and fix

1. Equals.java

//Understand the difference between == and .equals

public class Equals {

public static void main(String args[])

{

String x = "a test";

String y = new String("a test");

System.out.println(x==y); //prints false

System.out.println(x.equals(y)); //prints true

}

}

2. Switch2.java

//Find out what kind of error is present in this file, if its present at all

public class Switch2

{

final static short x = 2;

public static int y = 0;

public static void main(String [] args)

{

for (int z=0; z < 3; z++)

{

switch (z)

{

case y: System.out.print("0 "); /\* Line 11 \*/

case x-1: System.out.print("1 "); /\* Line 12 \*/

case x: System.out.print("2 "); /\* Line 13 \*/

}

}

}

}

3. Loops\_Reverse.java

import java.util.Scanner;

class Loops\_Reverse {

public static void main(String args[]) {

int num, reverse = 0;

System.out.println("\nEnter the number to reverse");

Scanner scan = new Scanner(System.in);

num = scan.nextInt();

while( num != 0 ) {

reverse = reverse \* 10;

reverse = (reverse + num)%10;

num = num/10;

}

System.out.println("\nReverse of entered number is "+reverse);

}

}

4. SimpleExampleSO.java and Car.java

public class SimpleExampleSO {

public static void main(String args[]) {

a();

}

public static void a() {

int x = 0;

a();

}

public static void b() {

Car y = new Car();

c();

}

public static void c() {

float z = 0f;

System.out.println("Hello");

}

}

public class Car {

}

5. Area.java

class Area {

public static void main(String args[])

{

double r, pi, a;

r = 9.8;

pi = 3.14;

a = pi \* r \* r;

System.out.println(a);

}

}

**OUTPUT: 301.5656 EXPECTED OUTPUT: 301.56560000**

6. Trial.java

//Find the bugs

import java.util.Scanner;

class Trial

{

public static void main(String args[])

{

int c, n, search, array[];

Scanner in = new Scanner(System.in);

System.out.println("Enter number of elements");

n = in.nextInt();

array = new int[n];

System.out.println("Enter those " + n + " elements");

for (c = 0; c <= n; c++)

array[c] = in.nextInt();

System.out.println("Enter value to find");

search = in.nextInt();

for (c = 0; c < n; c++)

{

if (array[c] == search) /\* Searching element is present \*/

{

System.out.println(search + " is present at location " + (c + 1) + ".");

break;

}

}

if (c != n) /\* Element to search isn't present \*/

System.out.println(search + " isn't present in array.");

}

}

7. BSE.java

//Change the key value to 40 and try the program

class BSE{

public static void binarySearch(int arr[], int first, int last, int key)

{

int mid = (first + last)/2;

while( first <= last ){

if ( arr[mid] < key ){

first = mid - 1;

}else if ( arr[mid] == key ){

System.out.println("Element is found at index: " + mid);

break;

}else{

last = mid + 1;

}

mid = (first + last)/2;

}

if ( first > last ){

System.out.println("Element is not found!");

}

}

public static void main(String args[]){

int arr[] = {10,20,30,40,50};

int key = 20;

int last=arr.length-1;

binarySearch(arr,0,last,key);

} }