# Homework

# Grade 11 Review 6 – **Tracing Methods**

For each of the program, trace the memory and output.



// The "UseSwap" class.

import java.awt.\*;

public class UseSwap

{

public static void main (String[] args)

{

int a = 10;

int b = 20;

System.out.println ("Before swap: a = " + a + " b = " + b);

swap (a, b);

System.out.println ("After swap: a = " + a + " b = " + b);

} // main method

public static void swap (int num1, int num2)

{

int temp;

System.out.println ("Beginning of procedure: num1 = " + num1 + " num2 = " + num2);

temp = num2;

num2 = num1;

num1 = temp;

System.out.println ("End of procedure: num1 = " + num1 + " num2 = " + num2);

}

} // UseSwap class

| (Main Method)  a (int ) = 10  b (int) = 20  a = 10  b = 20  (Swap method)  temp (int) = 20  num2 (int) = ~~20~~ 10  num1 (int) = ~~10~~ 20 | Before Swap: a = 10 b = 20  Beginneing of procedure: num1= 10 num2 = 20  End of procedure num1 = 20 num2 = 10  After swap: a = 20 b = 10 |
| --- | --- |



// The "UseSwapArray" class.

import java.awt.\*;

public class UseSwapArray

{

public static void main (String[] args)

{

int num[] = {3, 10};

System.out.println ("Before Procedure: num[0] = " + num [0] + " num[1] = " + num [1]);

SwapUseArray (num);

System.out.println ("After Procedure: num[0] = " + num [0] + " num[1] = " + num [1]);

} // main method

public static void SwapUseArray (int[] a)

{

System.out.println ("Begin Procedure: a[0] = " + a [0] + " a[1] = " + a [1]);

int temp = a [0];

a [0] = a [1];

a [1] = temp;

System.out.println ("End Procedure: a[0] = " + a [0] + " a[1] = " + a [1]);

}

} // UseSwapArray class

| (Main method)  num (int[]): {~~3~~ 10 ,~~10~~ 3}  (Method SwapUseArray)  temp (int) = 3 | Before Procedure: num[0] = 3 num[1] = 20  Begin Procedure: a[0] = 3 a[1] = 10  End Procedure: a[0] = 10 a[1] = 3 |
| --- | --- |



// The "UseAddOne" class.

import java.awt.\*;

public class UseAddOne

{

public static void main (String[] args)

{

int num = 10;

System.out.println ("Before Procedure: num = " + num);

AddOne (num);

System.out.println ("After Procedure: num = " + num);

} // main method

public static void AddOne (int a)

{

System.out.println ("Begin Procedure: a = " + a);

a++;

System.out.println ("End Procedure : a = " + a);

}

} // UseAddOne class

| (Main method)  num (int) 10  (Method AddOne)  a (int) ~~10~~ 11 | Before Procedure: num = 10  Begin Procedure: a = 10  End Procedure: a = 11  AFter procedure: a = 11 |
| --- | --- |



// The "UseAddOneArray" class.

import java.awt.\*;

public class UseAddOneArray

{

public static void main (String[] args)

{

int num[] = {3, 5, 6, 7, 8, 10};

System.out.println ("Before Procedure: ");

for (int i = 0 ; i < num.length ; i++)

{

System.out.println ("num[" + i + "] = " + num [i]);

}

AddOneArray (num);

System.out.println ("After Procedure: ");

for (int i = 0 ; i < num.length ; i++)

{

System.out.println ("num[" + i + "] = " + num [i]);

}

} // main method

public static void AddOneArray (int[] a)

{

System.out.println ("Begin Procedure: ");

for (int i = 0 ; i < a.length ; i++)

{

System.out.println ("a[" + i + "] = " + a [i]);

}

for (int i = 0 ; i < a.length ; i++)

{

a [i]++;

}

System.out.println ("End Procedure: ");

for (int i = 0 ; i < a.length ; i++)

{

System.out.println ("a[" + i + "] = " + a [i]);

}

}

} // UseAddOneArray class

| (Main Method)  num (int[]) = {~~3~~ 4,~~5~~ 6,~~6~~ 7,~~7~~ 8,~~8~~ 9,~~10~~ 11}  (Method AddOneArray) | Before Procedure:  num[0] = 3  num[1] = 5  num[2] = 6  num[3] = 7  num[4] = 8  num[5] = 10  Begin Procedure:  a[0] = 3  a[1] = 5  a[2] = 6  a[3] = 7  a[4] = 8  a[5] = 10  End Procedure:  a[0] = 4  a[1] = 6  a[2] = 7  a[3] = 8  a[4] = 9  a[5] = 11  After Procedure:  num[0] = 4  num[1] = 6  num[2] = 7  num[3] = 8  num[4] = 9  num[5] = 11 |
| --- | --- |