CSE 111 Assignment 01

Lab 4 (task 1-7)

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**Task 1**

//Run the methodA() and methodB() on an Instance of Test few times and explain the answer.

public class Test{

int sum;

public int y;

public void methodA(){

int x=0, y =0;

y = y + 7;

x = y + 11;

sum = x + y;

System.out.println(x + " " + y+ " " + sum);

}

public void methodB(){

int x = 0;

y = y + 11;

x = x + 33 + y;

sum = sum + x + y;

System.out.println(x + " " + y+ " " + sum);

}

}

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| GLOBAL | | Method A | | | Method B | | | OUTPUT |
| Int  SUM | Int  Y | Int  X | Int  Y | Int[]  MSG | Int[]  MSG2 | Int  MG1 | Int  X |
| 18 | 3 | 9 | 3 | #111 | #111 | 41 | 36 | 36 3 39 |
|  |  |  |  |  |  |  |  | 9 3 18 |

**Task 2**

public class Q3

{

public static void main(String args[])

{

String test = "";

inti = 5, j = 0, k = 15;

while (i< 10){

k-=1;

j = k;

while (j > 10 ){

if (j % 2 == 0){

test = "<--";

test = test + i + 2 + "-->" + (j / 2);

}

else

{

test = "-->";

test = "-->" + (i / 2) + test + j;

}

System.out.println(test);

--j;

}

i++;

}

}

**ANSWER**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **I** | **J** | **K** | **TEST** | **OUTPUT** |
| 5 | 0 | 15 | "" | "<--52-->7" |
| 6 | 14 | 14 | <-- | -->2-->13 |
| 7 | 13 | 13 | "<--52-->7" | <--52-->6 |
| 8 | 12 | 12 | -->+2-->13 | -->2-->11 |
| 9 | 11 | 11 | "<--" | -->3-->13 |
| 10 | 10 | 10 | <--52-->6 | <--62-->6 |
|  | 13 |  | “-->” | -->3-->11 |
|  | 12 |  | “-->2-->11” | <--72-->6, |
|  | 11 |  | “-->” | -->3-->11 |
|  | 10 |  | “-->3-->13” | -->4-->11 |
|  | 12 |  | “<--” |  |
|  | 11 |  | “<--62-->6” |  |
|  | 10 |  | “-->” |  |
|  | 11 |  | “-->3-->11” |  |
|  | 10 |  | “<--” |  |
|  | 10 |  | “<--72-->6” |  |
|  |  |  | “-->” |  |
|  |  |  | “-->3-->11” |  |
|  |  |  | “-->” |  |
|  |  |  | “-->4-->11” |  |

**Task 3**

//Run the methodA() on an Instance of Test3 five times and explain the answer.

public class Test3{

publicint sum;

publicint y;

public void methodA(){

int x=2, y =3;

int [] msg = new int[1];

msg[0] = 3;

y = this.y + msg[0];

methodB(msg, msg[0]);

x = this.y + msg[0];

sum = x + y + msg[0];

System.out.println(x + " " + y+ " " + sum);

}

private void methodB(int [] mg2, int mg1){

int x = 0;

y = this.y + mg2[0];

x = x + 33 + mg1;

sum = sum + x + y;

mg2[0] = y + mg1;

mg1 = mg1 + x + 2;

System.out.println(x + " " + y+ " " + sum);

}

}

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SUM** | **Y** | **METHOD A** | | | **METHOD B** | | | **OUTPUT** | | |
|  |  | **X** | **Y** | **MSG []** | **MG2[]** | **MG1** | **X** | **X** | **Y** | **SUM** |
| 0 | 0 | 2 | 3 | #2a14 | #2a14 | 3 | 0 | 36 | 3 | 39 |
| 39 | 3 | 9 | 3 | #6690 | #6690 | 41 | 36 | 9 | 3 | 18 |
| 18 | 6 | 2 | 3 | #6574 | #6574 | 3 | 0 | 36 | 6 | 60 |
| 60 | 9 | 15 | 6 | #7685 | #7685 | 41 | 36 | 5 | 6 | 30 |
| 30 | 12 | 2 | 3 | #acef | #acef | 3 | 0 | 36 | 9 | 75 |
| 75 | 15 | 21 | 9 |  |  | 41 | 36 | 21 | 9 | 42 |
| 42 |  | 2 | 3 |  |  | 3 | 0 | 36 | 12 | 90 |
| 80 |  | 27 | 12 |  |  | 41 | 36 | 27 | 12 | 54 |
| 54 |  | 2 | 3 |  |  | 3 | 0 | 36 | 15 | 105 |
| 105 |  | 33 | 15 |  |  | 41 | 36 | 33 | 15 | 66 |
| 66 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

**Task 4**

//Run the methodA() on an Instance of Test4 **five times** and explain the answer.

public class Test4{

publicint sum;

publicint y;

public void methodA(){

int x=0, y =0;

int [] msg = new int[1];

msg[0] = 5;

y = y + methodB(msg[0]);

x = y + methodB(msg, msg[0]);

sum = x + y + msg[0];

System.out.println(x + " " + y+ " " + sum);

}

PrivateintmethodB(int mg2[] , int mg1){

int x = 0;

y = y + mg2[0];

x = x + 33 + mg1;

sum = sum + x + y;

mg2[0] = y + mg1;

mg1 = mg1 + x + 2;

System.out.println(x + " " + y+ " " + sum);

return sum;

}

privateintmethodB(int mg1){

int x = 0;

int y = 0;

y = y + mg1;

x = x + 33 + mg1;

sum = sum + x + y;

this.y = mg1 + x + 2;

System.out.println(x + " " + y+ " " + sum);

return y;

}

}

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SUM** | **Y** | **METHOD A** | | | **METHOD B (int[], int)** | | | **METHOD B (int)** | | | **OUTPUT** | | |
|  |  | **X** | **Y** | **MSG []** | **MG2[]** | **MG1** | **X** | **MG1** | **X** | **Y** | **X** | **Y** | **SUM** |
| 0 | 0 | 0 | 0 | #1 | #1 | 5 | 0 | 5 | 0 | 0 | 38 | 5 | 43 |
| 43 | 45 | 136 | 5 | #2 | #2 | 45 | 38 | 5 | 38 | 5 | 38 | 50 | 131 |
| 131 | 50 | 0 | 0 | #3 | #3 | 5 | 0 | 5 | 0 | 0 | 136 | 5 | 196 |
| 196 | 45 | 332 | 5 | #4 | #4 | 45 | 38 | 5 | 38 | 5 | 38 | 5 | 239 |
| 239 | 50 | 0 | 0 | #5 | #5 | 5 | 0 | 5 | 0 | 0 | 38 | 50 | 327 |
| 327 | 45 | 528 | 5 |  |  | 45 | 38 |  | 38 | 5 | 332 | 5 | 392 |
| 392 | 50 | 0 | 0 |  |  | 5 | 0 |  | 0 | 0 | 38 | 5 | 435 |
| 435 | 45 | 724 | 5 |  |  | 45 | 38 |  | 38 | 5 | 38 | 50 | 523 |
| 523 | 50 | 0 | 0 |  |  | 5 | 0 |  | 0 | 0 | 528 | 5 | 588 |
| 588 | 45 | 920 | 5 |  |  | 45 | 38 |  | 38 | 5 | 38 | 5 | 631 |
| 631 | 50 |  |  |  |  |  |  |  |  |  | 38 | 50 | 719 |
| 719 |  |  |  |  |  |  |  |  |  |  | 724 | 5 | 78 |
| 784 |  |  |  |  |  |  |  |  |  |  | 38 | 5 | 827 |
| 827 |  |  |  |  |  |  |  |  |  |  | 38 | 50 | 915 |
| 915 |  |  |  |  |  |  |  |  |  |  | 920 | 5 | 980 |
| 980 |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Task 5**

//What is the output if you execute the methodA( ) on an instance of the Test04 Class?

public class Test4{

public int sum;

public int y;

public void methodA(){

int x=0;

int z = 0;

while (z < 5){

y = y + sum;

x = y + 1;

System.out.println(x + " " + y+ " " + sum);

sum = sum + methodB(x, y); ~~1+5~~

z++;

}

}

publicintmethodB(int m, int n){

int x = 0;

int sum = 0;

y = y + m;

x = n - 4;

sum = sum + y;

System.out.println(x + " " + y+ " " + sum);

return sum;

}

}

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Global** | | **MethodA** | | **MethodB** | | | | **Output** | | |
| **Sum** | **Y** | **X** | **Z** | **M** | **N** | **X** | **SUM** | **X** | **Y** | **SUM** |
| 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 3 | 2 | -4 | 1 | -4 | 1 | 1 |
| 6 | 1 | 3 | 2 | 12 | 11 | 0 | 0 | 3 | 2 | 1 |
| 29 | 2 | 12 | 3 | 53 | 52 | -2 | 5 | -2 | 5 | 5 |
| 134 | 5 | 53 | 4 | 240 | 239 | 0 | 0 | 12 | 11 | 6 |
| 613 | 11 | 240 | 5 |  |  | 7 | 23 | 7 | 23 | 23 |
|  | 23 |  |  |  |  | 0 | 0 | 53 | 52 | 29 |
|  | 52 |  |  |  |  | 48 | 105 | 48 | 105 | 105 |
|  | 105 |  |  |  |  | 0 | 0 | 240 | 239 | 134 |
|  | 239 |  |  |  |  | 235 | 479 | 235 | 479 | 479 |
|  | 479 |  |  |  |  |  |  |  |  |  |

**Task 6**

/\*

What is the output for the following code sequence?

FinalT3A fT3A = new FinalT3A();

fT3A.methodA();

fT3A.methodB(6,8);

\*/

public class FinalT3A{

publicint sum;

publicint y;

public void methodA(){

int x=0, y =0, j = 0;

while (j < 2){

y = y + j;

x = j + methodB(y , j);

sum = x + y;

System.out.println(x + " " + y+ " " + sum);

j++;

}

}

publicintmethodB(int p, int k){

int x = 0;

y = y + k + 1;

x = x + 3 - p;

sum = sum + x + y;

System.out.println(x + " " + y+ " " + sum);

return sum;

}

}

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **FINALT3A FT3A** | | | | | | |  | | |
| **GLOBAL** | | **METHODA** | | **METHODB** | | | **OUTPUT** | | |
| Sum | Y | X | J | P | K | X | X | Y | SUM |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| 4 | 1 | 4 | 1 | 1 | 1 | 3 | 4 | 0 | 4 |
| 4 | 3 | 10 | 2 | 6 | 8 | 0 | 12 | 3 | 9 |
| 9 | 12 |  |  |  |  | 2 | 10 | 1 | 11 |
| 11 |  |  |  |  |  | 0 | -3 | 12 | 20 |
| 20 |  |  |  |  |  | -3 |  |  |  |

**Task 7**

classPuzzleTester{

public static void main(String[]args)

{

Puzzle p = new Puzzle();

p.methodA();

p.methodA();

p=new Puzzle();

p.methodA();

p.methodB(7);

}

}

class Puzzle{

static int x;

voidmethodA(){

int z;

x=5; //at home, comment/delete this line and try again

z=x+methodB(x);

System.out.println(x+" "+z);

z=methodB(z+2)+x;

System.out.println(x+" "+z);

methodB(x,z);

System.out.println(x+" "+z);

}

intmethodB(int y){

x=y+x;

System.out.println(x+" "+y);

return x+3;

}

voidmethodB(int z, int x){

z=z+1;

x=x+1;

System.out.println(z+" "+x);

}

}