BRACUniversity

Department of Computer Science and Engineering

# Spring 2014

**CSE111 (Programming Language-II)**

Trace the output of the following Java Codes. Then run them in Dr. Java to see if the results match.

**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);

}

}

**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++;

}

}

**Task 3**

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

public class Test3{

public int sum;

public int 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);

}

}

**Task 4**

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

public class Test4{

public int sum;

public int 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);

}

Private int methodB(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;

}

private int methodB(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;

}

}

**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);

z++;

}

}

public int methodB(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;

}

}

**Task 6**

/\*

What is the output for the following code sequence?

FinalT3A fT3A = new FinalT3A();

fT3A.methodA();

fT3A.methodB(6,8);

\*/

public class FinalT3A{

public int sum;

public int 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++;

}

}

public int methodB(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;

}

}

**Task 7**

class PuzzleTester{

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;

void methodA(){

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);

}

int methodB(int y){

x=y+x;

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

return x+3;

}

void methodB(int z, int x){

z=z+1;

x=x+1;

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

}

}

**Task 7.1**

class PuzzleTester{

public static void main(String[]args)

{

Puzzle p = new Puzzle();

p.methodA();

p.methodB(7);

}

}

class Puzzle{

static int x;

void methodA(){

int z;

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

z=x+methodB(x);

Maze m1 = new Maze();

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

m1.methodA();

z=methodB(z+2)+x;

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

methodB(x,z);

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

}

int methodB(int y){

x=y+x;

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

return x+3;

}

void methodB(int z, int x){

z=z+1;

x=x+1;

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

}

}

class Maze{

static int x;

void methodA(){

int m;

x=5;

m=x+methodB(x);

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

m=methodB(m-3)+x;

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

methodB(x,m);

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

}

int methodB(int y){

x=y\*y;

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

return x+3;

}

void methodB(int z, int x){

z=z-2;

x=x\*1;

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

}

}

**Task 8**

Create a class called Student as described below:

* **Fields:**name, id, address, cgpa
* **Methods:**  
  public String getName()  
  public void setName(String n)  
  public String getID()  
  public void setID(String i)  
  public String getAddress()  
  public void setAddress(String a)  
  public double getCGPA()  
  public void setCGPA(double c)

Write a class called Main to write a main() method:

* public static void main(String[] args){  
    
  }
* Inside the main() method
  + Create 3 objects/instances of Student called john, mike and carol
  + Set their fields to some value using the public methods.
  + Print the information of each Student using System.out.println()

**Task 9**

Create a class called BankAccount as described below:

* **Fields:**name, address, accountID, balance
* **Methods:**  
  public String getName()  
  public void setName(String n)  
  public String getAccountID()  
  public void setAccountID(String i)  
  public String getAddress()  
  public void setAddress(String a)  
  public double getBalance()  
  public void setBalance(double c)  
  public void addInterest() //adds 7% of the balance

1. Write a class called Main to write a main() method:

* public static void main(String[] args){  
    
  }
* Inside the main() method
  + Create 3 objects/instances of BankAccount called acc1, acc2 and acc3
  + Set their fields to some value using the public methods.
  + Call addInterest() on acc1 and acc3
  + Print the information of each BankAccount using System.out.println()

1. Add constructors to Student and BankAccount and use the constructor to set the field values.