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| --- |
| **class msg{** |
| **public int content;** |
| **}** |

|  |  |
| --- | --- |
|  | **public class Quiz8A{** |
|  | **public int sum;** |
|  | **public int y;** |
|  | **public void methodA(){** |
|  | **int x=0, y =0, i=0;** |
|  | **msg mg = new msg();** |
|  | **mg.content = 1;** |
|  | **while (i<3){** |
|  | **y = y + mg.content;** |
|  | **methodB(mg);** |
|  | **x = y + mg.content;** |
|  | **sum += x + y;** |
|  | **System.out.println(x + " " + y+ " " + sum);** |
|  | **i++;** |
|  | **}** |
|  | **}** |
|  | **private void methodB(msg mg2){** |
|  | **int x = 0;** |
|  | **y = y + mg2.content;** |
|  | **x = x + 3 + y;** |
|  | **sum = x + y;** |
|  | **mg2.content = x;** |
|  | **System.out.println(x + " " + y+ " " + sum);** |
|  | **}** |
|  | public static void main(String[] args){ |
|  | Quiz8A a = new Quiz8A(); |
|  | a.methodA(); |
|  | } |
|  | } |

Line 26: Quiz8A a = new Quiz8A()

an object of Quiz8A class was created and stored at the reference, Quiz8A@14c7a98

Line 26: Quiz8A a = Quiz8A@14c7a98

Line 2: global sum=0

Line 3: global y=0

going inside methodA

Line 5: methodA's local variables..

Line 5: x=0, y =0, i=0

Line 6: msg mg = new msg();

Line 6: msg mg = msg@1ef3ccd

an object of msg class was created and stored at the reference, msg@1ef3ccd

Line 7: mg.content = 1;

mg.content was 0 becomes 1

Line 8: while (i<3){

Line 8: while (0<3){

condition true going inside while loop

Line 9: y = y + mg.content;

Do I(methodA) have my own y?

Yes, I do have my own y. I will use my own y.

Line 9: y = 0 + 1;

Line 9: y = 1;

Line 10: methodB(mg);

Line 10: methodB(msg@1ef3ccd);

going inside methodB

Line 17: private void methodB(msg mg2){

Line 17: private void methodB(mg2){

Line 17: private void methodB(msg@1ef3ccd){

reference contained in mg was copied to mg2

So, now there is only one object stored at msg@1ef3ccd

but is has two names. methodA and everyline inside methodA knows the object by the name mg. methodB and everyline inside methodB knows the same object by the name mg2

Line 18: int x = 0;

variable x was created and initlized to 0

Line 19: y = y + mg2.content;

Do I(methodB) have my own y?

NO. Then I will use class's y (global)

Line 19: y = 01;

Line 19: y = 1;0

Line 20: x = x + 3 + y;

Do I(methodB) have my own x and y?

I have my own x but I will have to use class's y (global)

Line 20: x = 031;

Line 21: sum = x + y;

Do I(methodB) have my own x, y and sum?

I have my own x but I will have to use class's (global) y and sum

Line 21: sum = 41;

Line 21: sum = 5;

Line 22: mg2.content = x;

Do I(methodB) have my own x?

I have my own x, using it...

Line 22: mg2.content =+4;

Line 23: System.out.println(x + " " + y+ " " + sum);

OUTPUT is: 4 1 5

going outside methodB

Line 11: x = y + mg.content;

Do I(methodA) have my own x and y? YES

Line 11: x = 14;

Line 11: x = 5;

Line 12: sum += x + y;

Line 12: sum += 51;

Line 12: sum += 6;

sum was 5 becomes 11

Line 13: System.out.println(x + " " + y+ " " + sum);

OUTPUT is: 5 1 11

Line 14: i++;

i was 0 becomes 1

Line 8: while (i<3){

Line 8: while (1<3){

condition true going inside while loop

Line 9: y = y + mg.content;

Do I(methodA) have my own y?

Yes, I do have my own y. I will use my own y.

Line 9: y = 1 + 4;

Line 9: y = 5;

Line 10: methodB(mg);

Line 10: methodB(msg@1ef3ccd);

going inside methodB

Line 17: private void methodB(msg mg2){

Line 17: private void methodB(mg2){

Line 17: private void methodB(msg@1ef3ccd){

reference contained in mg was copied to mg2

So, now there is only one object stored at msg@1ef3ccd

but is has two names. methodA and everyline inside methodA knows the object by the name mg. methodB and everyline inside methodB knows the same object by the name mg2

Line 18: int x = 0;

variable x was created and initlized to 0

Line 19: y = y + mg2.content;

Do I(methodB) have my own y?

NO. Then I will use class's y (global)

Line 19: y = 14;

Line 19: y = 5;

Line 20: x = x + 3 + y;

Do I(methodB) have my own x and y?

I have my own x but I will have to use class's y (global)

Line 20: x = 035;

Line 21: sum = x + y;

Do I(methodB) have my own x, y and sum?

I have my own x but I will have to use class's (global) y and sum

Line 21: sum = 85;

Line 21: sum = 13;

Line 22: mg2.content = x;

Do I(methodB) have my own x?

I have my own x, using it...

Line 22: mg2.content =+8;

Line 23: System.out.println(x + " " + y+ " " + sum);

OUTPUT is: 8 5 13

going outside methodB

Line 11: x = y + mg.content;

Do I(methodA) have my own x and y? YES

Line 11: x = 58;

Line 11: x = 13;

Line 12: sum += x + y;

Line 12: sum += 135;

Line 12: sum += 18;

sum was 13 becomes 31

Line 13: System.out.println(x + " " + y+ " " + sum);

OUTPUT is: 13 5 31

Line 14: i++;

i was 1 becomes 2

Line 8: while (i<3){

Line 8: while (2<3){

condition true going inside while loop

Line 9: y = y + mg.content;

Do I(methodA) have my own y?

Yes, I do have my own y. I will use my own y.

Line 9: y = 5 + 8;

Line 9: y = 13;

Line 10: methodB(mg);

Line 10: methodB(msg@1ef3ccd);

going inside methodB

Line 17: private void methodB(msg mg2){

Line 17: private void methodB(mg2){

Line 17: private void methodB(msg@1ef3ccd){

reference contained in mg was copied to mg2

So, now there is only one object stored at msg@1ef3ccd

but is has two names. methodA and everyline inside methodA knows the object by the name mg. methodB and everyline inside methodB knows the same object by the name mg2

Line 18: int x = 0;

variable x was created and initlized to 0

Line 19: y = y + mg2.content;

Do I(methodB) have my own y?

NO. Then I will use class's y (global)

Line 19: y = 58;

Line 19: y = 13;

Line 20: x = x + 3 + y;

Do I(methodB) have my own x and y?

I have my own x but I will have to use class's y (global)

Line 20: x = 0313;

Line 21: sum = x + y;

Do I(methodB) have my own x, y and sum?

I have my own x but I will have to use class's (global) y and sum

Line 21: sum = 1613;

Line 21: sum = 29;

Line 22: mg2.content = x;

Do I(methodB) have my own x?

I have my own x, using it...

Line 22: mg2.content =+16;

Line 23: System.out.println(x + " " + y+ " " + sum);

OUTPUT is: 16 13 29

going outside methodB

Line 11: x = y + mg.content;

Do I(methodA) have my own x and y? YES

Line 11: x = 1316;

Line 11: x = 29;

Line 12: sum += x + y;

Line 12: sum += 2913;

Line 12: sum += 42;

sum was 29 becomes 71

Line 13: System.out.println(x + " " + y+ " " + sum);

OUTPUT is: 29 13 71

Line 14: i++;

i was 2 becomes 3

Line 8: while (i<3){

Line 8: while (3<3){

condition false going outside while loop

going outside methodA