

Categories per Question 2024

Question-1 (Q3 in 2023)

1. [While Loop] What will be the output of this Java program fragment?

```
int i=0;
while (i<2) {
    System.out.println(i);
    i++;
}
```

actual result: 0 1

C: 0 1 (TCC)

Python: 0 1 (TCC)

Table-1

	While-Loop Concept Misconception	While-Loop Condition Misconception	"println" Knowledge Missing	Correct Answers	Other	Sum
C	0	0	1	14	0	15
Python	1	0	0	1	0	2
Java	0	0	0	2	0	2
C & P	1	1	1	11	0	14
C & J	0	0	0	4	0	4
C & P & J	0	0	1	5	0	6
None	3	1	0	8	1	13
Other	0	0	0	3	1	4
Sum	5	2	3	48	2	60

Correct answer: 0 1 / 0, 1

Considered as correct answer: i gets bigger

While-Loop Concept Misconception: 0 / 1 / 3

While-Loop Condition Misconception: 0 1 2

Println knowledge missing: ii

Other

General Java knowledge missing: I don't know

Question-2 (Q8 in 2023)

2. [String Concatenation] What will be the output of the following Java program fragments?

```
System.out.println("hello" + "there");  
System.out.println("exec" + 3);
```

actual result: hellothere exec3

C: compiling error. (FCC)

Python: hellothere error (FCC)

Table-2

	Strings and Numbers Connection Misconception	+3 Misunderstanding	"+" Concatenation Knowledge Missing	Correct Answers	Other	Sum
C	3	5	0	8	0	16
Python	0	0	0	2	0	2
Java	1	0	0	1	0	2
C & P	3	2	0	6	3	14
C & J	1	1	0	2	0	4
C & P & J	1	3	0	3	0	7
None	0	2	1	8	1	12
Other	1	0	0	2	1	4
Sum	10	13	1	32	5	61

Correct Answers: hellothere exec3

Strings and Numbers Connection Misconception: hellothere error / hellothere / hellothere
exec Don't know what will happen with +3

+3 Misunderstanding: hellothere exec exec exec / hellothere exec

"+" Concatenation Knowledge Missing: error because + confuses the compiler

Other

keine Class public / I don't know

Question-3 (Q5 in 2023)

3. **[Method Calling]** What will be the output of this Java program fragment?

```
public class Main {  
    public static int gen(int g, int s) {  
        int a=g*s;  
        return a;  
    }  
    public static void main(String[] args) {  
        System.out.println(gen(7,3));  
    }  
}
```

actual result: 21

C: 21 (TCC)

Python: 21 (TCC)

Table-3

	Method Calling Knowledge Missing	Return Value of Method Misconception	Correct Answers	Other	Sum
C	0	0	15	1	16
Python	0	0	1	0	1
Java	1	0	1	0	2
C & P	0	1	12	1	14
C & J	0	0	4	0	4
C & P & J	0	0	7	0	7
None	0	0	13	0	13
Other	0	0	3	1	4
Sum	1	1	56	3	61

Correct answers: 21

Considered as correct answer: Eine Klasse, mit einer Funktion, welche 2 Zahlen miteinander multipliziert, wird deklariert und in der Main das Ergebnis der Multiplikation von 7 und 3 ausgegeben, durch Aufruf der Funktion der Klasse.

(A class with a function that multiplies 2 numbers is declared and in the main the result of the multiplication of 7 and 3 is output by calling the function of the class.)

Method Calling Knowledge Missing:

7, 3 also die vorher generierten integer werte
(7, 3 so the previously generated integer values)

Return Value of Method Misconception:

0,21

Other

there is a mistake; its not giving the output of the multiplication / No idea / I don't know

Question-4 (Q1 in 2023)

4. [Variable Type] What will be the output of this Java program fragment?

```
int a;
```

```
a=1;
a=10.5;
System.out.println(a);
```

actual result: error when compiling.

C: warning, output 10. (FCC)

Python: 10.5. (FCC)

Table-4

	Type Incompatibility	Type casting misconception	Correct Answers	Other	Sum
C	3	10	3	0	16
Python	0	2	0	0	2
Java	0	1	1	0	2
C & P	2	6	6	1	15
C & J	0	1	3	0	4
C & P & J	3	3	0	0	6
None	3	8	1	1	13
Other	0	1	2	1	4
Sum	11	32	16	3	62

Correct Answers: 10.5 is not an integer / trying to assign a floating point number to an integer / error

Type Incompatibility: 10 / 11

Type casting misconception: 10.5 / 1

Other

1

10.5

(Basic programming knowledge missing.)

I don't know

Question-5 (Q4 in 2023)

5. [Array Comparison] What will be the output of this Java program fragment?

```
int[] a = { 1, 2, 3 };
int[] b = { 1, 2, 3 };
System.out.println(a == b);
```

actual result: false

C: True. (FCC)

Python: True (FCC)

Table-5

	Boolean Knowledge Missing	Value Comparison	"==" Return value misconception	Usage of "==" missing	Correct Answers	Other	Sum
C	1	9	3	0	1	1	15
Python	0	1	0	0	0	0	1
Java	0	0	0	0	2	0	2
C & P	0	11	1	0	1	0	13
C & J	0	1	0	0	1	2	4
C & P & J	0	5	1	0	1	0	7
None	0	4	4	2	2	1	13
Other	0	1	0	1	1	1	4
Sum	1	32	9	3	9	5	59

Correct answers: false

Boolean knowledge missing: 0

Value Comparison: true / 1 / It will give back that array a is the same as array b

"==" Return value misconception: 1,2,3 / {1,2,3} / a=b

Usage of == missing: a==b / {1,2,3}=={1,2,3}

Other

Error: comparison of arrays in print function

Error

I don't know

Question-6 (Q2 in 2023)

6. [Variable Scope] What will be the output of this Java program fragment?

```
for (int i=0; i<2; i++) {  
    String var="Hello";  
    System.out.println(var);  
}  
System.out.println(var);
```

actual result: error when compiling.

C: error when compiling. (TCC)

Python: 3 x "Hello" (FCC)

Table-6

	For-Loop Concept misconception	Variable Scope misconception	Code Execution misconception	Correct Answers	Other	Sum
C	1	7	4	2	0	14
Python	0	0	1	0	1	2
Java	0	1	1	0	0	2
C & P	2	5	3	5	0	15
C & J	0	3	0	1	0	4
C & P & J	1	1	2	2	0	6
None	6	3	2	2	0	13
Other	1	1	0	1	1	4
Sum	11	21	13	13	2	60

Correct answers: Error because the variable var is only known within the for loop - no output / var is not accessible in the last line

Considered as correct: Hello Hello error

For-Loop Concept misconception: Hello x1 / Hello x4 / Hello x3, error

Variable Scope misconception: Hello x3

Code Execution misconception: Hello x2

Other

Var

I don't know

Question-7 (Q6 in 2023)

7. [\[Object Reference Assignment\]](#) What will be the output of this Java program fragment?

```
public class Robot {
    String label;
    int num;
    public Robot(String n, int w) {
        this.label=n;
        this.num=w;
    }
    public void agga() {
        num=num+2;
        System.out.println(num);
    }
    public static void main(String []args) {
        Robot n1=new Robot("Nori", 51);
        Robot n2=new Robot("Alen", 22);
        System.out.println(n1.num);
        n2=n1;
        n1.agga();
        System.out.println(n2.num);
    }
}
```

actual result: 51 53 53

C: 51 53 51 (FCC)

Python: 51 53 53 (TCC)

Table-7

	Assignment misconception (influenced by C)	Basic Assignment Knowledge missing	No Method Knowledge	Code Execution misconception	Assignment not noticed	Correct answers	Other	Sum
C	2	1	1	1	1	4	5	15
Python	0	0	0	0	0	0	2	2
Java	0	0	0	0	0	1	1	2
C & P	1	1	2	1	0	5	4	14
C & J	1	0	1	0	0	2	0	4
C & P & J	0	0	0	1	0	4	0	5
None	3	0	1	1	1	1	5	12
Other	1	0	0	0	0	2	1	4
Sum	8	2	5	4	2	19	18	58

Correct answers: 51 53 53

Considered as correct: Nori 51, Nori 53 / 51 53

Assignment misconception (influenced by C): 51 53 51 / Nori 51, 53, Nori 51

Basic Assignment Knowledge missing: 51 24 / 51 24 22

No method knowledge: 51 51 / 51

Code Execution misconception: 53 55 / 53 24 / 53

Assignment not noticed: 51 22 / N1 Nori 51, N2 Alen 22

Other

Nori Alen / Error / 51 105

Fehler, keine klasse "this"

Fehler, num nicht initialisiert

I don't know

Question-8 (Q10 in 2023)

8. [\[OOP Related\]](#) What will be the output of the following Java program fragments?

```
public class Student_Info {
    private String num;
    private String name;
    private int age;
    public Student_Info (String num,String name,int age) {
        this.num = num;
        this.name = name;
        this.age = age;
    }
    String getNum() {
        return num;
    }
    String getName() {
        return name;
    }
    int getAge() {
        return age;
    }
    void setAge(int age) {
        this.age = age;
    }
    public static void main(String[] args) {
        Student_Info student1 = new Student_Info("001","Max",25);
        System.out.println(student1.getNum());
        System.out.println(student1.getName());
        System.out.println(student1.getAge());
        student1.setAge(23);
        System.out.println(student1.getAge());
    }
}
```

actual result: 001 Max 25 23

C: “I do not know.”, “Compiling error”, and so on. (ATCC)

Python: 001 Max 25 23 (TCC)

Table-8

	No Method Knowledge	Correct answers	Other	Sum
C	2	11	3	16
Python	0	0	1	1
Java	1	1	0	2
C & P	0	11	3	14
C & J	1	3	0	4
C & P & J	0	6	0	6
None	1	7	4	12
Other	1	3	0	4
Sum	6	42	11	59

Correct answers: 001 Max 25 23

No method Knowledge: 001 Max 25 / output: information about student1

Other: 23 / error / possibly nothing at all / I don't know

Question-9 (Q9 in 2023)

9. [\[Array Length\]](#) What will be the output of the following Java program fragments?

```
public class PrintArray {
    public static void printArr(int[][] arr) {
        for(int x=0; x<arr.length; x++) {
            for(int y=0; y<arr[x].length; y++) {
                System.out.print(arr[x][y]+" ");
            }
            System.out.println();
        }
    }
    public static void main(String[] args) {
        int[][] arr = {{1,2,3},{4,5,6},{7,8,9}};
        printArr(arr);
    }
}
```

```
}
}
```

actual result:

1 2 3

4 5 6

7 8 9

C: Error (FCC)

Python: Error/Confusion (ATCC)

Table-9

	Misunderstanding of For-loop nesting	Correct Answers	Other	Sum
C	0	12	3	15
Python	0	0	1	1
Java	0	2	0	2
C & P	1	10	3	14
C & J	0	4	0	4
C & P & J	1	4	1	6
None	0	7	6	13
Other	1	2	1	4
Sum	3	41	15	59

Correct answers: 1 2 3 4 5 6 7 8 9

Considered as Correct: output like a sudoku field / {1, 2, 3, 4, 5, 6, 7, 8, 9} /

{1,2,3},{4,5,6},{7,8,9} / 1 2 3 4 5 6 7 8 9 or an error that int+String does not work

Misunderstanding of For-loop nesting:

{1,2,3,4,5,6}

{4,5,6,7,8,9}

{7,8,9}

11 12 13

24 25 26

37 38 39

arr[3][3]

Other: 26 / error / I don't know / not finished