Introduction to Computer Programming (CSE1001)

Assignment-1

(Elements of Programming)

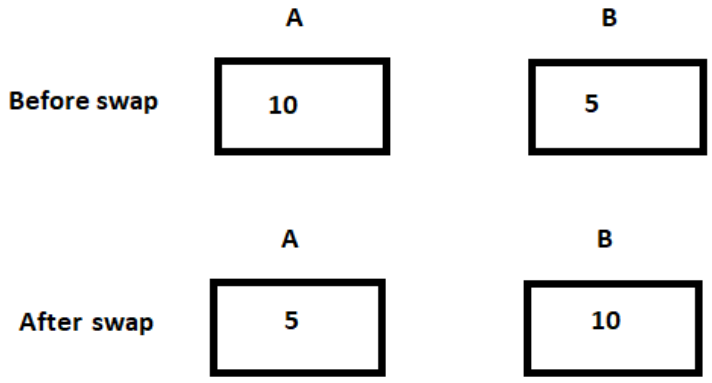
Question No	Questions	Course Outcome
1.	Write a **Java Program** to display following messages: Hello "ITERIAN" Welcome to Siksha 'O' Anusandhan Family. Welcome to "Introduction to Computer Programming Lab" Java is fun for All !!	CO1

2.	Write a **Java Program** to display the following design pattern:
	
	`* * * * * * *  * * * * * * *`
	`* * * * * * *  * * * * * * *`
	`$ $  $ $`
	`* *  * * * * *  * *`
	`* *  * * * * *  * *`
	`$ $  $ $`
	`* * * * * * *  * * * * * * *`
	`* * * * * * *  * * * * * * *`
		CO1

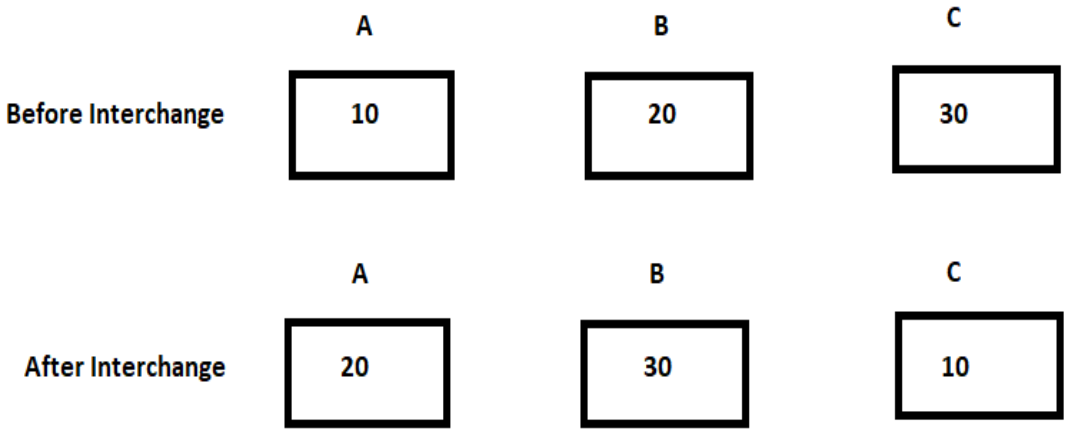
3.	Write a **Java program** that displays your *Name, Branch*, *Year of Study*, and *University Roll Number* in separate lines without using println().
	
	Sample Run:
	`Name: John Doe`
	`Branch: Computer Science and Engineering`
	`Year of Study: 1st Year`
	`University Roll No: 25CSE045`
		CO1

4.	Write a **Java program** to store the following details of a student in variables and display them in a formatted sentence: • *Name* (String) • *Roll Number* (int) • *CGPA* (double) • *Grade* (char) **Sample Run:** "My name is *Rohan*; my roll number is *45*. My CGPA is *8.72*, and I got *A* grade in ICP. "	CO1
5.	Write a **Java program** to initialize the variable *radius* of the circle, compute the perimeter and area of the circle. [Use *Math.PI*] (Assume radius, perimeter, area as double type variable.) **Sample Run:** *Radius* = 7 *Perimeter of circle* = 43.982297150257104 *Area of the circle* = 153.93804002589985	CO1

6.	Write the output of the following **Java Statement:** (A). What do each of the following **print**? *(a) System.out.println(2 + "bc");* *(b) System.out.println(2 + 3 + "bc");* *(c) System.out.println((2+3) + "bc");* *(d) System.out.println("bc" + (2+3));* *(e) System.out.println("bc" + 2 + 3);* (B) Suppose that a variable a is declared as **double a = 3.14159**. What do each of the following ***print***? *a. System.out.println(a);* *b. System.out.println(a+1);* *c. System.out.println(8/(int) a);* *d. System.out.println(8/a);* *e. System.out.println((int) (8/a));*	CO2
7.	What do each of the following **print**? *System.out.println('A' + 1);* *System.out.println("A" + 1);* *System.out.println((char)('A' + 1));* *System.out.println('1' + 1);* *System.out.println("1" + 1);*	CO2

8.	Write a **Java Program** to exchange the values of two variables of integer type A and B.
	(a) Using third temporary variable C.
	(b) Without using third temporary variable:
	
	Example:
	 
	
	Sample Run:
	`Before Swap A = 10, B = 5.`
	`After Swap A = 5, B = 10`
		CO2

9.	Write a **Java Program** to exchange the values of two variables of integer type A, B, and C. (a) Using fourth temporary variable D. (b) Without using fourth temporary variable.	CO2



Sample Run:

```
Before interchange A = 10, B = 20, C = 30
After interchange A = 20, B = 30, C = 10
```

10. Assume a string variable *ruler1* contains "1" initially (CO2)
i.e. *String ruler1* = "1"
Write a **Java program** to print the following output using string concatenation.
(You can take extra string variables)

1
1 2 1
1 2 1 3 1 2 1
1 2 1 3 1 2 1 4 1 2 1 3 1 2 1

HOME ASSIGNMENT

11. Write a java program to store your Bank account no, name and balance in three different variables and display their value on the screen as given: (CO1)
- *Name* (String)
- Account Number (int)
- Balance (double)

Sample Run:
"My name is *Amit Kumar* bearing account number *123456* having balance *7654.98*"

12. Suppose that a variable a is declared as *int a = 2147483647* (or equivalently, **Integer.MAX_VALUE**). (CO2)

What do each of the following print?

```
a. System.out.println(a);
b. System.out.println(a+1);
c. System.out.println(2-a);
d. System.out.println(-2-a);
e. System.out.println(2*a);
f. System.out.println(4*a);
```

13. What do each of the following **print?** (CO2)

```
a) System.out.println('b');
b) System.out.println('b' + 'c');
c) System.out.println((char) ('a' + 4));
```

14.	What do each of the following print?
	
	`char c = 'A';`
	`System.out.println(c);`
	`System.out.println((int)c);`
	`System.out.println((char)(c + 3));`
		CO2

15.	Write a **Java Program** to exchange the value of 4 variables W, G, K, A such that the value of W will move to A, A to K, K to G and finally G to W. Exchange using with and without using extra variables.	CO2
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