

CSC-120 Project 3 - Java Programming Competition
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I affirm that I have carried out my academic endeavours with full academic honesty. [Sol Ben-Ishay]

Question 1 - Short Answer:

Create a program StairCaseBuilder that takes an integer n as a scanner input and prints a staircase of size n using the pound symbol, #. The output of the program should look like:

Enter the size of the staircase: 10

```

  #
 ##
###
####
#####
```

Solution:

```
import java.util.Scanner;

public class StairCaseBuilder {

    static void buildStaircase(int size) {
        int counter=0;
        for(int i=0; i < size;i++) {
            counter++;
            for(int k=size; k>= i;k--) {
                System.out.print(" ");
            }
            for(int j=0; j<=counter-1;j++) {
                System.out.print("#");
            }
            System.out.print("\n");
        }
    }

    public static void main(String[] args) {
        Scanner scnr = new Scanner(System.in);
        System.out.print("Enter the size of the staircase: ");
        int size = scnr.nextInt();
        buildStaircase(size);
        scnr.close();
    }
}
```

}

Question 2 - Multiple Choice/Fill in the Blank

Evaluate the following Java expression, if x=3, y=5, and z=10:

++z + y - y + z + x++

- a. 26
- b. 24
- c. 20
- d. 25

Answer : b, 24

Question 3 - Multiple Choice/Fill in the Blank

Which of the following is the proper way to declare and initialize an int array, intArray of size n?

- a. `int intArray[] = new int[n];`
- b. `int[] intArray = new int[:n];`
- c. `int [] intArray = new int[n];`
- d. `int[] intArray = new int[n];`

Question 4 - Multiple Choice/Fill in the Blank

Complete the missing lines of code below to print out the sum of the inputted integer array:

```
class Sum {  
  
    static int arr[] = {12,3,4,15};  
  
    static int sum() {  
        int sum = 0;  
        int i;  
        "FILL IN HERE"  
        "FILL IN HERE"  
    }  
    return sum;  
}
```

```
        public static void main(String[] args) {  
            System.out.println("Sum of given array is " + sum());  
        }  
    }
```

Answer:

```
class Sum {  
  
    static int arr[] = {12,3,4,15};  
  
    static int sum() {  
        int sum = 0;  
        int i;  
        for (i = 0; i < arr.length; i++) {  
            sum += arr[i];  
        }  
        return sum;  
    }  
  
    public static void main(String[] args) {  
        System.out.println("Sum of given array is " + sum());  
    }  
}
```