JAVA ASSIGNMENT BOOK

```
Life myLife = new Life();
myLife.startLife();
while( !myLife.makeSuccess() ){
    myLife.tryAgain();
    if (myLife.death()){ break; }
}
```

BY
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Instruction for Submission

Hi There,

- To Start the assignments you have to create a package named **com.assignment** in which you can create different directories as per the task number(Such as **com.assignment.task1**) and attempt the questions in the respective directories.

- The Levels of Questions will increase gradually in this manner:
  - Easy => Question 1 - 5
  - Moderate => Question 6-8(Attempt any two)
  - Advanced => Question 9-10(Attempt any one)

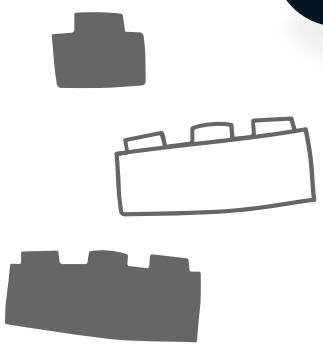
- The Tasks in which there are less than 10 questions, You have to attempt all the questions.
- For Task-7(Programming Questions) you have to attempt all the questions.
- To submit the assignments create a git repository of the package and upload that repository to GitHub and share the respective link to your trainer or support trainer.

Task-1
Basic Exercises

Basics.txt

1. Print your name using a pre-defined variable.
2. Take the user's name as input and print it to the console.
3. Swap two numbers using the third variable as the result name and do the same task without using any third variable.
4. Write a program to add two numbers.
5. Write a program to print the area of circle, Take radius as input from the user.(Area = 3.14*radius*radius)

#Quote #Programming #Selfcare



Task-2
Operators and Decision-Making Statements

If-else.txt

1. Write a program to check whether a number is positive or negative.
2. Write a program to check whether a character is an alphabet or not.
3. Write a program to compute quotient and reminder.
4. Write a program to check whether a year is a leap year.
5. Write a program to assign the grade on the basis of percentage

- if the percentage is above 90, assign grade A
- if the percentage is above 75, assign grade B
- if the percentage is above 65, assign grade C

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If-else.txt

6.Write a program to create a calculator using the switch case.

7.Write a program in JAVA to break and continue if the following cases occur:

- If the user enters a negative number just break the loop and print “It’s Over”
- If the user enters a positive number just continue in the loop and print “Good Going”

8.Calculate income tax paid by an employee to the government as per the slabs mentioned below:

Income Slab	Tax
2.5L - 6.0L	10%
6.0L - 12.0L	18%
Above 12.0L	25%

Note that there is no tax below 2.5L. Take the input amount as input from the user.

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If-else.txt

9.Write a program to input electricity unit charges and calculate total electricity bill according to the given condition:

- For first 60 units Rs. 0.30/unit
- For next 90 units Rs. 0.75/unit
- For next 120 units Rs. 1.10/unit
- For unit above 300 Rs. 2.50/unit
- An additional surcharge of 20% is added to the bill

10.Write a program to input basic salary of an employee and calculate its Gross salary according to following:

- Basic Salary <= 15000 : HRA = 25%, DA = 82%
- Basic Salary <= 20200 : HRA = 27%, DA = 90%
- Basic Salary > 20200 : HRA = 36%, DA = 95%

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Task-3
Looping Statements

Loops.txt

1. Write a program to display Fibonacci Series.
2. Write a program to Find Factorial of a Number.
3. Write a program to Check Palindrome.
4. Write a program to Check Whether a Number is Prime or Not.
5. Write a program to sum first n even numbers using a while loop.
6. Write a do-while loop that asks the user to enter two numbers. The numbers should be added and the sum displayed. The loop should ask the user whether he or she wishes to perform the operation again. If so, the loop should repeat; otherwise it should terminate.

#Quote #Programming #Selfcare

Loops.txt

7.Print the following pattern

```
       *
      **
     ***
    ****
   *****
```

8.Write a program to enter the numbers till the user wants and at the end the program should display the largest and smallest numbers entered. (using loops only)

9.Print the following pattern

```
       *
      * *
     *   *
    *     *
   *       *
    *     *
     *   *
      * *
       *
```

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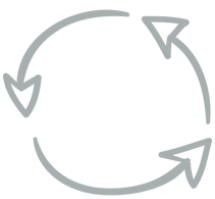
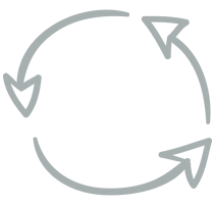


Loops.txt

10.Print the following pattern

```
*                   *
* * *             * * *
* * * * *   * * * * *
* * * * * * * * * * *
```

#Quote #Programming #Selfcare



Task-4
Arrays

Arrays.txt

1. Write a program to print an array populated by the user.
2. Write a program to Calculate Average Using Arrays.
3. Write a program to find out whether a given integer is present in an array or not.(By Linear Search)
4. Write a program to find out whether a given integer is present in an array or not.(By Binary Search)
5. Write a Java program to add two matrices of the same size.
6. Write a Java program to find the sum of the two elements of a given array which is equal to a given integer.
   a. Sample array: [1,2,4,5,6]
   b. Target value: 6

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Arrays.txt

7.Write a program to remove the duplicates from a sorted array, change them into 0 and add 0 in the end.

- input: [2,2,3,3,4,4,4,11,11,11,11]
- output:[2,3,4,11,0,0,0,0,0,0,0]

8.Given an array of n integers, find the third largest element. All the elements in the array are distinct integers.

Input: arr[] = {1, 16, 2, 19, 10, 20}
Output: The third Largest element is 16

9.Given an array of integers, return indices of the two numbers such that they add up to a specific target.

Input: nums = [1,4,10,-3], target = 14
Output: [1,2] or [2,1] # 4 + 10 = 14

10.Write a Java program to check the equality of two arrays?

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Task-6
Class & Objects

OOPs.txt

1. Create a class named 'Student' with String variable 'name' and integer variable 'EnrollmentNo'. Assign the value of EnrollmentNo as '132' and that of name as "Amay" by creating an object of the class Student, And Print the details of Amay.
2. Write a program to print the area and perimeter of a triangle having sides of 3, 4 and 5 units by creating a class named 'Triangle' without any parameter in its constructor.

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OOPs.txt

3.Write a program that would print the information (name, year of joining, salary, address) of three employees by creating a class named 'Employee'. The output should be as follows:

Name	Year of Joining	Address
Robert	1994	64C- Walls Street
Sam	2000	68D- Walls Street
John	1999	26B- Walls Street

4.Write a program to print the names of students by creating a Student class. If no name is passed while creating an object of Student class, then the name should be "Unknown", otherwise the name should be equal to the String value passed while creating an object of Student class. (Hint: Overloading concept)

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OOPs.txt

5.Create a class named 'Rectangle' with two data members- length and breadth and a method to calculate the area which is 'length*breadth'. The class has three constructors which are :

1. having no parameter - values of both length and breadth are assigned zero.
2. having two numbers as parameters - the two numbers are assigned as length and breadth respectively.
3. having one number as a parameter - both length and breadth are assigned that number.

Now, create objects of the 'Rectangle' class having none, one, and two parameters and print their areas.

6.Print the sum, difference, and product of two complex numbers by creating a class named 'Complex' with separate methods for each operation whose real and imaginary parts are entered by the user.

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Task-7
Programming Questions

Programming.txt

1. Program to find the first non-repeated character in the String
2. Program to find the intersection of two arrays in java?
3. Program to find if String has all Unique Characters?
4. Program to Count the number of words in the String?
5. Program to check the Armstrong number?
6. Program to Count occurrences of each character in a string in java?
7. Print all permutations of the String
8. Find the maximum value in Array without using Collection?
9. Find all possible combinations of String? (using recursion)

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Programming.txt

10. Program to sort HashMap in java by keys and values?
11. Program to find all the subarray whose sum is equal to the given number?

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THANK YOU

KEEP LEARNING AND KEEP GROWING !!