

Tasks

Note

- 1.All Questions are mandatory.
2. Time and space **complexity** will be checked.

Q1. Need to implement a spring boot project which has a controller with any database connection. It must have one Api which gives data of User(Like mobile no,Email,Address etc).

Api name: getuserdata

Response

```
{  
  "Name": "xxxxxxx",  
  "Mobile": "xxxxxxxx",  
  ..  
  ..  
  ..  
}
```

Q2. Write a program in the above project to print the following Series and Sum.

1,8,1,9,2,10,3,12,5,15,8.....n terms

where n is even.

Q3. Sudoku Solver

3		6	5		8	4		
5	2							
	8	7					3	1
		3		1			8	
9			8	6	3			5
	5			9		6		
1	3					2	5	
							7	4
		5	2		6	3		

Given a partially filled 9×9 2D array 'grid[9][9]', the goal is to assign digits (from 1 to 9) to the empty cells so that every row, column, and subgrid of size 3×3 contains exactly one instance of the digits from 1 to 9.

Input (i,j,n) where i,j are position and n is filling number

Output

Case 1 Number Already fill

Case 2 Number is Valid

Case 3 Number is invalid

Hint: Write a program in the above project for a given position on sudoku by using sudoku rule to find if the given number is valid or not.

Q4. Write a program in the above project for the following output

Given a 2D Array, :

Example:

```
1 1 2 1
1 1 4 1
5 1 2 1
1 3 4 1
```

Answer:

```
13 12
```

```
15 16
```

We define an hourglass in to be a subset of values with indices falling in this pattern in graphical representation:

```
a b c
  d
e f g
```

There are hourglasses in , and an hourglass sum is the sum of an hourglass' values. Calculate and Print the sum of every hourglass.(hint $1+1+2+1+5+1+2=13$)