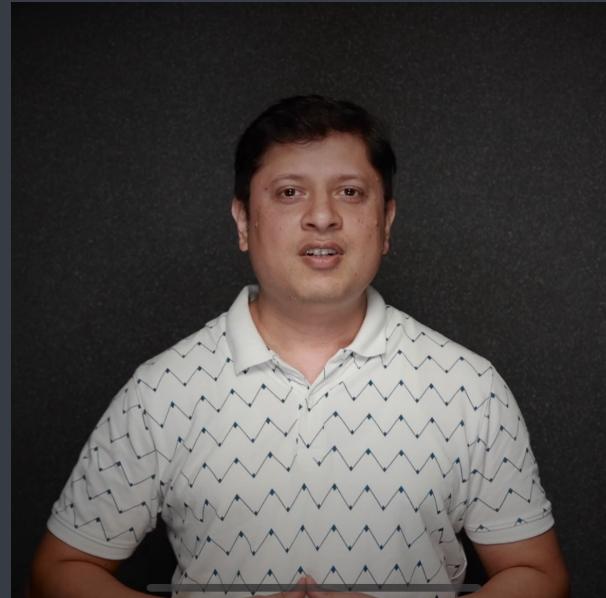


DSA through C++

Assignment-16

Doubt Class



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Q.1

1 2 3 4 ... n

- ① printN(n) 1 2 3 4 ... n
- ② printN(n-1) 1 2 3 4 ... n-1
cout << n;
- ③ n == 0

```
void printN(int n)
{
    if (n > 0)
    {
        printN(n - 1);
        cout << " " << n;
    }
}
```

2

Q.2

n n-1 n-2 ... 4 3 2 1

- ① printNR(n) n n-1 n-2 ... 4 3 2 1
- ② cout << " " << n; n
printNR(n-1); n-1 n-2 n-3 ... 4 3 2 1
- ③ n = 0

```
void printNR (int n)
{
    if (n > 0)
    {
        cout << n << " ";
        printNR (n - 1);
    }
}
```

Q.3

1 3 5 7 ... (n terms)

① printOddN(n) 1 3 5 7 ... n terms
② printOddN(n-1) 1 3 5 7 ... (n-1) terms
cont << " " << 2*n-1;

③ n == 0

```
void printOddN(int n)
{
    if(n>0)
    {
        printOddN(n-1);
        cout << " " << 2*n-1;
    }
}
```

$$\begin{aligned}T_n &= a + (n-1)d \\T_n &= 1 + (n-1)2 \\&= 1 + 2n - 2 \\&= 2n - 1\end{aligned}$$

Q. 4

```
void printOddNR(int n)
{
    if (n > 0)
    {
        cout << 2*n - 1 << " ";
        printOddNR(n - 1);
    }
}
```

~~Q. 5~~

```
void printEvenN( int n )
{
    if (n>0)
    {
        printEvenN( n-1 );
        cout << " " << 2*n;
    }
}
```

Q-6

```
void printEvenNR( int n )
{
    if( n > 0 )
    {
        cout << 2 * n << " ";
        printEvenNR( n - 1 );
    }
}
```

Q.7

$$1^2 \quad 2^2 \quad 3^2 \quad 4^2 \quad \dots \quad n^2$$

```
void printSquare(int n)
{
    if(n>0)
    {
        printSquare(n-1);
        cout << " " << n*n;
    }
}
```

Q-8

```
void printSquareR( int n)
{
    if (n>0)
    {
        cout << n*n << " ";
        printSquareR(n-1);
    }
}
```

~~Q.9~~

```
void printCubes( int n )
{
    if( n > 0 )
    {
        printCubes( n-1 );
        cout << " " << n*n*n;
    }
}
```

Q.10

```
void printCubesR(int n)
{
    if(n>0)
    {
        cout << n*n*n << " ";
        printCubesR(n-1);
    }
}
```