DATA STRUCTURE & ALGORITHMS
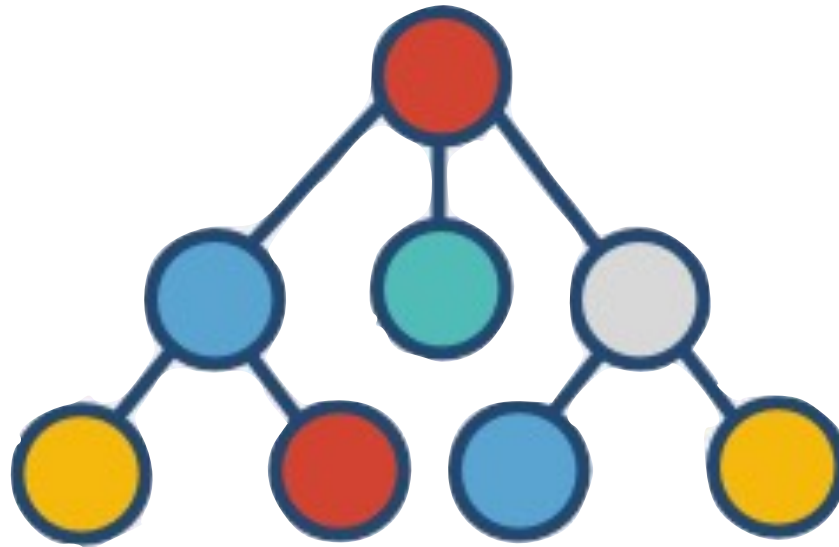
(By Prince Agarwal)
("HELLO WORLD")

SQUARE ROOT

X = 4

Ans = 2

X = 14

Ans = 3

X = 6

Ans = 2

Int **squareRootFloor** (int x)

```
{
        Int i=1;
            While ( I * I  <= x )
                i++;

            Return ( i-1 );
}
```

---

x == 9   i == 1

i == 2

i == 3

i == 4

Return (i-1) = 3;

Hello world

SQUARE ROOT

X = 4

Ans = 2

X = 14

Ans = 3

X = 6

Ans = 2

Int **squareRootFloor** (int x)

{
    Int i=1;

    While (I * I <= x)
        i++;

    Return (i-1);
}

---

x == 15   i == 1

i == 2

i == 3

i == 4

Return (i-1) = 3;

Hello world

SQUARE ROOT

X = 8

Ans =

1	2	3	4	5	6	7	8

Low = 1

high = 8

Mid = 4 $\longrightarrow$ Mid * mid = 16   **8** < 16

mid = (low + high) / 2

High = mid -1 ; // 3

Hello world

SQUARE ROOT

X = 8

Ans = 2

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

Low = 1

high = 3

Mid = 2 ⟶ Mid * mid = 4   8 > 4

mid = (low + high) / 2

Low = mid +1 ; // 3

Hello world

SQUARE ROOT

X = 8

Ans = 2

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
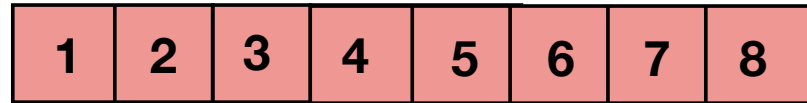
Low = 3

high = 3
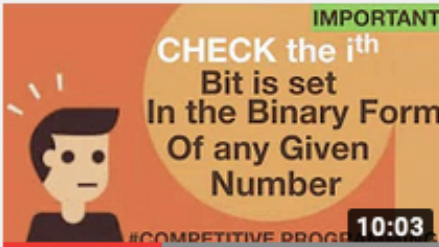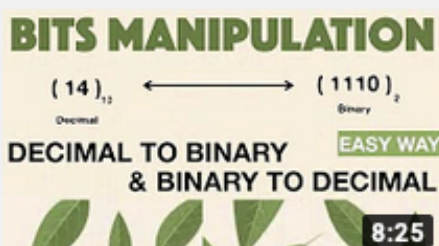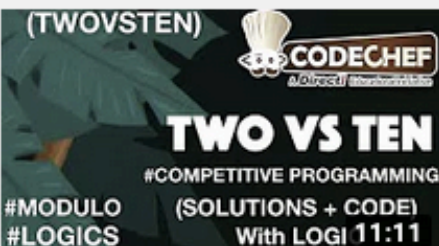
Mid = 3 ⟶ Mid * mid = 9   8 < 9

mid = (low + high) / 2

high = mid -1 ; //2

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

Hello world

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