What this workshop is about?

Mainly its about showing off that we are good at CPP as compared to you :)

Jokes apart.

Lets introduce our coding club

Secretary and Joint Secretary

Dhruv Bhalodia
Secretary

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Let me introduce myself.

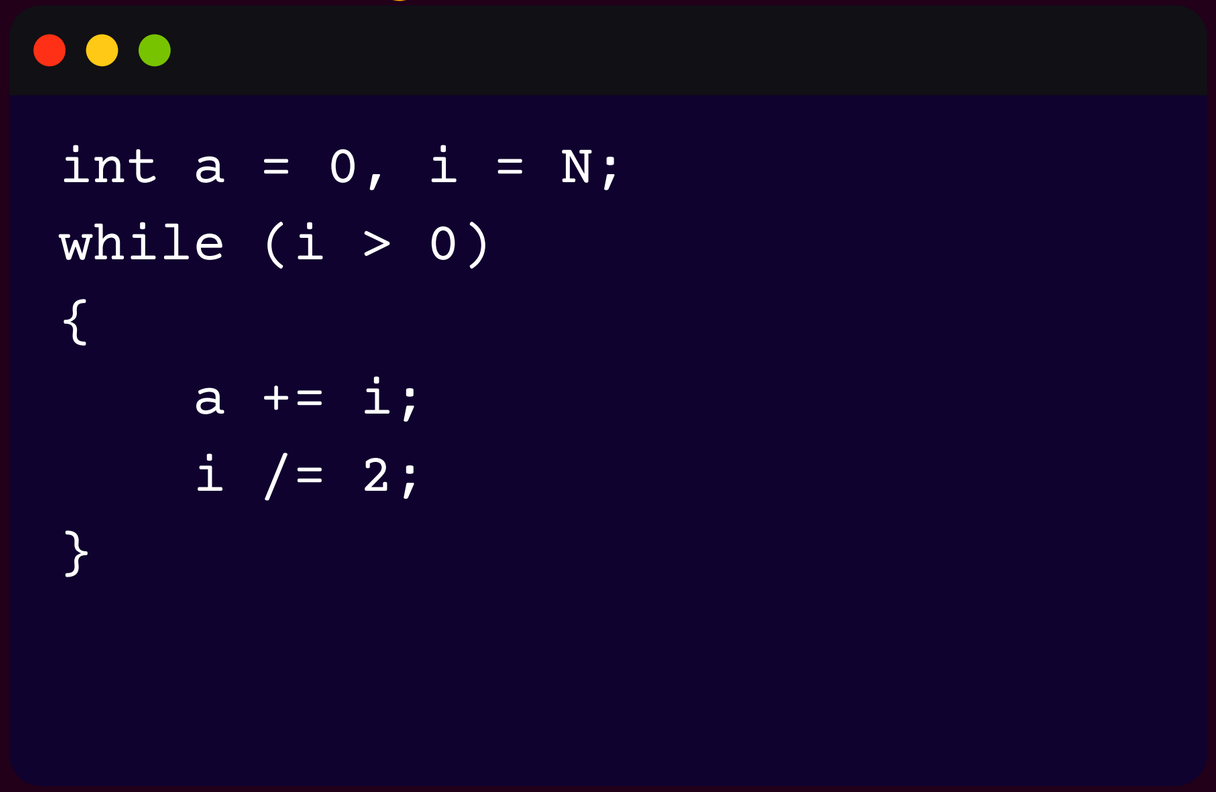
Basic outline of the workshop

1. Time complexity
2. Vector vs Array
3. Iterators
4. Vector inbuild funtions
5. Bonus STL functions

Time complexity

Gaurav sir ne phadaya hai. So lets test ki kitna aata hai.

Question 1



```
int a = 0, i = N;
while (i > 0)
{
    a += i;
    i /= 2;
}
```

Question 2.

```
int i, j, k = 0;
for (i = n / 2; i <= n; i++)
{
 for (j = 2; j <= n; j = j * 2)
 {
    k = k + n / 2;
 }
}
```

Lets start the battle btw

Array and vectors.

- Size
- Performance
- Memory Overhead.

....

iske aage muje samaj aana band ho gya

So why study vectors.

- There are a lot of thing you can't do with array. Example ahead. Sabar kro
- Leetcode
- Better coding practice
- It make coding more easy
- Muje tao itna hi laga. Kisi aur ko kuch aur lagta ho tao apna gyan apne pass rakhe.

Array se ye kr ke dikhao:

- Assume you have a array A of size 4 and now you want to change its size to 5. Think how can you achieve it.

  - Now ye store kr ke dikhao
  - 1
  - 1 2
  - 1 2 3
  - ...

Abb baki khud jaker dekh lena,
sub kuch nahi bata rha mai.

Important part

ITERATOR

- Iterators are used to point at the memory addresses of STL containers. They are primarily used in sequences of numbers, characters etc. They reduce the complexity and execution time of the program.
- First and last definition of the session.
- Important note: Iterator is not specific to vector it is specific to STL.

Different Iterators.

- `Begin() iterator`
- `end() iterator`
- `cbegin() iterator`
- `cend() iterator`
- `rbegin() iterator`
- `rend() iterator`
- `advance() iterator`
- `next()`
- `prev()`

while practicing iterator always refer to docs.

Lets write a code using vector

Vector inbuilt functions

- push_back()
- pop_back()
- clear()
- size()
- empty()
- resize(n)
- ...
- Bhaut sharre hai so docs dekhate hai

Time for coding using inbuilt functions

Question 1

Lets code to resize vector of size 4 to size 5.

Question 2

Lets try to store this pattern.

```
1
1 2
1 2 3 ...
```

Hurray tumne muje abhi tak jhael liya. So bonus.

Sort function.

Accumulate

Thank You