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lec.30

while loop in C++

- executes a block of statements as long as a specified condition is true.

Syntax:-
```
while (condition)
{
  // block of statements
}
```

entry controlled loop

e.g:-
```
int i = 1;
while (i < 3)
{
  cout << i << "\n";
  i++;
}
```

block of statements

⇒ in this case o/p = 1, 2

Here block of statements would be executed over & over again as long as i is less than 3.

NOTES:- Update (increase) the variable i otherwise loop will never end.

Uses:- ① used for input validation

eg:-
```
int number;
cout << "enter number greater than 5:";
cin >> number;
while (number <=5)
{
  cout << "enter number greater than 5";
  cin >> number;
}
cout << "Go Ahead!";
```

Exercise:-

```
int number;
cout << "enter a number between 2 and 10:";
cin >> number;
while( . . .
```

What condition u will write in while loop

Complete the Code.

e.g. ① :-

```
int main()
{
    int num;
    cout << "enter a positive number: start Countdown:";
    cin >> num;
    while (num > 0)
    {
        cout << num << endl;
        num--;
    }
    cout << "let's celebrate";
    return 0;
}
```

Output -

```
enter a positive number:
start Countdown: 5
5
4
3
2
1
let's celebrate
```

example 2:-

```
int main()
{
    int num; int i = 1;
    cout << "enter a positive integer to count upto:";
    cin >> num;
    while (num >= i)
    {
        cout << i << "\n";
        i++;
    }
    return 0;
}
```

example 3:-

```
int main()
{
    bool flag = false;
    int num;
  while ( ! flag )
  {
      Cout << "enter a number between 2 and 7:";
      cin >> num;
      if ( num <= 2 || num >= 7)
          cout << " Try again.. Not valid number.";
      else
       {
          Cout << " Thanks! ";
          flag = true;
       }
  }
  return 0;
}
```

imp

Output:

```
enter a number between 2 and 7 : 1
Try again .. Not valid number
enter a number between 2 and 7: 5
Thanks!
```