

C++ Loops Lecture-5

- 1) Reviee
- 2) Notes
- 3) Assignment

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What and Why?

```
Rounds & Ateration
```

```
7 Repetition
```

```
• Gritalize
```

- e check
- · incide loop
- e increment
- Depeat

Outhut

- · Good Morning
- · Good Morning
- e Good Morning
- God Morning
- · God Morning

5 baar "Good Morning"

1=12346



For Loop

```
for(int i = 1; i<=10; i++){
// code
```



Ques: Print hello world 'n' times. Take 'n' as input from user in seperate lines

```
int n;
cin 77n;
```





How for loop works: the various parameters.

initialization, condition, increment/decrement





Ques: Print numbers from 1 to 100

for loop wala vornable, -> i - iterator





Ques: Print all the even numbers from 1 to 100

```
for(int i=1;i<=10;i++){
   if(i%2==0) cout<<i<<endl;
```

1-123

```
1) Check
```

- 2) Inside Loop
 3) Increment
 6

Outhut.



Ques: Print the table of 19.

for lint
$$i = 19$$
; $i < = 190$; $i + = 19$)?

cont << i < < endl;

Outhut

- 33



Ques: Display this AP - 1,3,5,7,9.. upto 'n' terms.

```
n= 6 10
      1 3 5 7 9 11 13 15 17 19
for (int i=1; i<=2n-1; i+=2)2
      cout << i << endl;
M-I: Mouthernotice -> a = 1, d = 2
    an = a + (n-1)d
                           2<sup>4</sup>n-1
        = 1 + (n-1) \cdot 2
= 1 + 2n - 3 = 2n-1
```



Ques: Display this AP - 1,3,5,7,9... upto 'n' terms.

$$u, 7, 10, 13, 17$$

$$a = u, d = 3$$

$$a_n = a + (n-1)d$$

$$= u + (n-1) \cdot 3$$

$$= u + 3n - 3$$

$$= 3n + 1$$



Ques: Display this GP - 1,2,4,8,16,32,... upto 'n' terms. $n = 3 \text{ yr } \text{ properties } \text{$

1 2 4 16 32 64 128 256

Practice:
$$n \text{ to } 1$$

$$2n \text{ since } n \text{ to } 1$$

$$2n \text{ since } n \text{ to } 1$$

$$3n \text{ since } n \text{ to } 1$$

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$$3n \text{ since } n \text{ to } 1$$

$$3n \text$$



*Ques: Display this AP - 100,97,94,...upto all terms which are positive.

```
Dhancha Method - 1 ton Extra Variable
      \alpha = 100, d = -3, n = ?
  0,50
                   103 > 3n
3n < 103
a + (n-1)d > 0
                                 1 Mast 3 34
\Rightarrow 100 + (n-1)(-3) > 0
                     3 N < 103
\Rightarrow 100 > 3(n-1)
\Rightarrow 100 > 3n - 3
                     3
n 4 34·33
```



While Loop

```
じーイング
```

```
int i = 0;
while(i<10){
   // code
   i++;</pre>
```

```
int i = 1;
while(i<=10){
    i++;
    cout<<i<endl;
}</pre>
```



Predict the output

```
int main() {
   while (j < 10) {
     cout << j << endl;
```

Garboge values



Predict the output

```
int main() {
                      2 - 1 0
   int x = 1;
   while (x == 1) {
      cout << x << end;
```



Do-While Loop Trees

```
do {
//code
```

```
} while (another == 'y');
```



Find the error

```
int main() {
  int x;
  while (x = 0; x <= 255; x++) {
    cout << "Ascii value of Character" << (char)('a' + x);
    cout << " is " << x << endl;
}</pre>
```

SKILLS

gues: Print all alphabets (uppercase) with their ASCII values.

A 6 5

8 6

6 4

68

2



Thank you!