SKILLS

C++
Output and Variables

Lecture- 1

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Today's checklist

1) Basic Printing, \n, printing numbers also with + and -.
2) Variables, printing variables, int, float,bool,char and +,-,*,/ of integers.
3) Modulus operator and increment ,decrement operator
4) Variables naming rules.
5) Comments in C++

Basic program in C++

```
#include<iostream>
using namespace std;
int main(){
    cout<<“hello world”;
    return 0;
}
```

How to move in next line?

Example :

```
cout<<“Hello PW”;

cout<<“Hello CW”;
```

Output will be ?

Use of escape sequence ‘\n’ and endl

Example :

```
cout<<“Hello PW”;

cout<<“\n”; or cout<<endl;

cout<<“Hello CW”;
```

Output will be ?

Use of escape sequence '\n'

Predict the output :

```
main(){
    cout<<"nn\n\nnn\n";
    cout<<"nn/n/nnn/n";
}
```

Printing Numbers (what computer thinks is a number and what is a number)

Examples :

```
cout<<4;

cout<<4+3;

cout<<"4+3";
```

Variables and their Declaration

Let us focus on int data type as of now.

1) Variables as containers :

Printing Variables in C++ & Updation of Variables

```
int x = 5;
cout<<x;
x = 7;
cout<<x;
x = x + 6;
cout<<x;
x = x - 20;
cout<<x;
```

Arithmetic operations on int data type

```
int x = 5;

int y = 2;

cout<<x+y;

cout<<x-y;

cout<<x*y;

cout<<x/y;
```

Increment - Decrement operators and Comments

```
int x = 5;
x++;
cout<<x;
x--;
cout<<x;
++x;
cout<<x;
--x;
cout<<x;
```

Example : Take two integers input, a and b : a>b, and find the remainder when a is divided by b.

Modulus Operator(%)

Used to find the remainder

```
int a=10;
int b=4;
int Remainder = a%b
```

Float data type

```
float x = 3.1;
```

Arithmetic operations on float data type

```
float x = 5;

float y = 2;

cout<<x+y;

cout<<x-y;

cout<<x*y;

cout<<x/y;
```

Example : Calculating percentage of 5 subjects

```
float x1 = 90; // x1 can be physics
float x2 = 91; // x2 can be chemistry
float x3 = 92; // x3 can be maths
float x4 = 93; // x4 can be english
float x5 = 94; // ohh wait comments ke baare me to bataya hi nahi xD
float percent = (x1 + x2 + x3 + x4 + x5)/5;
cout<<percent;
// change the marks and run each time
```

Example : Calculating Area of a Circle

```
float radius = 5;

float pi = 3.1415;

float area = pi*radius*radius;

cout<<area;
```

Boolean data type

```
bool x = true;
```

Example : Find the output

```
#include<iostream>
using namespace std;
void main(){
    bool a = true;
    cout<<a<<endl;
}
```

Example : Find the output

```
#include<iostream>
using namespace std;
    int main(){
    int a = 0,b = 5;
    //cout<<b<<endl;
    cout<<a<<endl;
}
```

Variable Naming rules

1) Variables can start from an alphabet or underscore _ or $.
2) Special characters except _ and $ are not allowed.
3) Some particular keywords are not allowed.
4) Commas or blanks are not allowed.

auto	double	int	break	extern	enum	unsigned	while
case	sizeof	for	const	static	long	continue	float
else	signed	do	short	switch	char	volatile	default
goto	struct	if	union	return	void	register	typedef

Variable Naming rules - Examples

Q. Which of the following are invalid variable names and why?

BASICSALARY	_basic	basic-hra
#MEAN	group.	422
population in 2006	over time	mindovermatter
FLOAT	hELLO	queue.
team’svictory	Plot#3	2015_DDay

Example : Calculating Simple Interest

```
float p,r,t,si;
p = 100;
r = 10;
t = 2;
si = (p*r*t)/100;
cout<<si;
```

Try This!

Predict the output :

```
int main(){
    float a = 5, b = 2;
    int c;
    c = a % b;
    cout<<c;
    return 0;
}
```

What's this line?

```
#include <iostream>
int main(){
    return 0;
}
```

Compilation Process

MCQ Time !

MCQ 1

Which of the following statements is false

(1) Each new C++ instruction has to be written on a separate line

(2) Usually all C++ statements are entered in small case letters

(3) Blank spaces may be inserted between two words in a C++ statement

(4) Blank spaces cannot be inserted within a variable name

MCQ 2

If a is an integer variable, a = 5 / 2 ; will return a value

(1) 2.5

(2) 3

(3) 2

(4) 0

MCQ 3

What will be the value of d if d is a float after the operation d = 2 / 7.0?

(1) 0

(2) 0.2857

(3) Cannot be determined

(4) None of the above

THANK YOU