ASSIGNMENT: OPERATORS

1) Make a PDF file containing description (around 3-4 lines),syntax and example of
   1)Bitwise operators.
   2)Ternary operators.

Ans:1) Bitwise operators: mathematical operations like addition,subtraction,multiplication and division are done in bit level. To perforf bit level operations.

Bitwise operators are : Bitwise AND (&),Bitwise OR (|), Bitwise XOR (^), Bitwise complement (~), Bitwise shift left (<<), bitwise shift right (>>),

1) Bitwise AND: The output of bitwise AND is 1 if the correspondence bit of two operands is 1.If either bit of an operand is 0, the result of the correspomding bit is evaluated to 0.

for example: Bitwise AND operation of two integers 12 and 25

INPUT:

```
#include<stdio.h>
int main()
{
    int a=12,b=25;
    printf("output=%d",a&b);
    return 0;
}
```

OUTPUT:

```
output=8
```

2)Bitwise OR: The output of bitwise OR is 1 if at least one corresponding bit of two operands is 1.

for example: bitwise OR of 12 and 25

INPUT:

```
#include<stdio.h>
int main()
{
    int a=12,b=25;
    printf("output=%d",a|b);
    return 0;
}
```

OUTPUT:

```
output=29
```

3)Bitwise XOR:the result of bitwise XOR is 1 if the corresponding bits of two operands are opposite

for example: bitwise XOR of 12 and 25

INPUT:

```
#include<stdio.h>
int main()
{
    int a=12,b=25;
    printf("output=%d",a^b);
    return 0;
}
```

OUTPUT:

```
output=21
```

4)Bitwise complement: It is an unary operator (works on only one operand). It changes 1 to 0 and 0 to 1.

(bitwise complement of any number N is -(N+1)
for example:

INPUT:

```
#include<stdio.h>
int main()
{
	int a=12,b=25;
	printf("output=%d",~35);
	printf("output=%d",~-12);
	return 0;
}
```

OUTPUT:

```
output=-36
output=11
```

5)right shift operator: It shifts all bits towards right by certain number of specified bits.

INPUT:

```
#include<stdio.h>
int main()
{
	int num=137,i;
	for (i=0;i<=2;++i)
	printf("right shift by %d:%d\n",i,num>>i);
	return 0;
}
```

OUTPUT:

```
right shift by 0:137
right shift by 1:68
right shift by 2:34
```

6)left shift operator:It shift all bits towards left by certain number of specified bits

INPUT:

```
#include<stdio.h>
int main()
{
	int num=137,i;
	for (i=0;i<=2;++i)
	printf("left shift by %d:%d\n",i,num<<i);
	return 0;
}
```

OUTPUT:

```
left shift by 0:137
left shift by 1:274
left shift by 2:548
```

2) Ternary operators : The ternary operator provides a way to shorten a simple if else block but the conditional operator takes less space and helps to write the if else statement in the shortest way possible.

Syntax : The conditional operator is of the form

variable = Expression1 ? Expression2 ? : Expression3

It can be visualise into if-else statement as:

```
if(expression)
```

```
{
	variable= Expression2;
}
else
{
	variable=Expression3;
}
```

Since the conditional operator '?:' takes three operands to work, hence they are also called ternary operators.

Example : program to Store the greatest of the two number.

```
#include<stdio.h>
int main()
{
	int n1=6, n2=8,max;
	max = (n1>n2)?n1:n2;
	printf("largest number between""%d and %d is %d.",n1,n2,max);
	return 0;
}
```

Output:

largest number between 6 and 8 is 8.