

C, C++, DSA in depth

Doubt class assignment 5



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Assr 3
Ex. 8

$$a = a + b$$

$$b = a - b$$

$$a = a - b$$

$$a = a * b$$

$$b = a / b$$

$$a = a / b$$

$$a = a \wedge b$$

$$b = a \wedge b$$

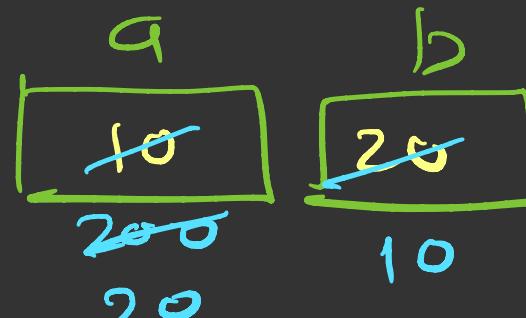
$$a = a \wedge b$$

$$b \rightarrow 10100$$

$$a \wedge b \rightarrow$$

$$a \rightarrow \underline{11110}$$
$$\rightarrow 01010$$

Swap my



$$a \wedge b \wedge a \rightarrow b$$
$$\wedge b \rightarrow a$$



$$\begin{array}{r} \cancel{000001010} \\ \cancel{00011110} \\ 00010100 \end{array}$$

$$\begin{array}{r} 11110 \\ 01010 \\ \hline 10100 \end{array}$$

Ass-3
Q-10



$$a = a + b - \underbrace{(b=a)}_{20}$$

$$a = 30 - 10$$

Ass-5
Q. - 1

```
int main()
{
    int a;
    printf("Enter a number");
    scanf("%d", &a);
    if (a>0)
        printf("Positive");
    else
        printf("Non-Positive");
}
```

Ass-5

Q. 2

a	27.5	0	D
10	107.5	2	ND
12	127.5	0	D
25	257.5	1	ND
26	267.5	2	ND
27	277.5	3	ND
28	287.5		

```
int main()
{
    int a;
    printf("Enter a number");
    scanf("%d", &a);
    if(a%5)
        printf("Not divisible by 5");
    else
        printf("Divisible by 5");
```

3

Ass-5
Q-3

```
int main()
{
    int a;
    printf("Enter a number");
    scanf("%d", &a);
    if(a%2)
        printf("Odd");
    else
        printf("Even");
}
```

Ass-5
Q.6

```
int main()
{
    int x;
    printf("Enter a number");
    scanf("%d",&x);
    if ( x >= 100 && x <= 999 )
        printf("Three digits number");
    else
        printf("Not a three digit no");

}
```

Ass-5
Q.7

```
int main()
{
    int a, b;
    printf("Enter two numbers");
    scanf("%d %d", &a, &b);
    if (a>b)
        printf("%d", a);
    else
        printf("%d", b);
    printf("\n", a>b ? a : b);
}
```

Ass. 5
Q. 8

$$ax^2 + bx + c = 0$$

$$x = \alpha \quad x = \beta$$

2 & 3 are roots

Formula

$$\begin{aligned}a &= 1 \\b &= -5 \\c &= 6\end{aligned}$$

$$x^2 - 5x + 6 = 0$$



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = 2 \quad x = 3$$

$$= \frac{-(-5) \pm \sqrt{25 - 4 \times 1 \times 6}}{2 \times 1} = \frac{(2)^2 - 5(2) + 6}{4 - 10 + 6} = \frac{-6 + 6}{0} = 0$$

$$\begin{aligned}(2)^2 - 5(2) + 6 &= 4 - 10 + 6 \\&= -6 + 6 \\&= 0\end{aligned}$$

$$= \frac{5 \pm \sqrt{25 - 24}}{2}$$

2, 3 are real and distinct

$$= \frac{5 \pm \sqrt{1}}{2}$$

$$b^2 - 4ac > 0$$

Real & Distinct

$$= \frac{5 \pm 1}{2}$$

2, 2 are real and equal

$$b^2 - 4ac = 0$$

Real & equal

$$b^2 - 4ac < 0$$

Imaginary roots

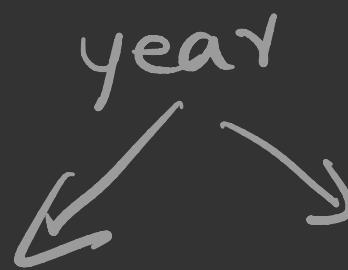
$$\sqrt{-1} = i$$

Ass.-5 Q.9

leap year \rightarrow 366 days

non-leap year \rightarrow 365 days

2020	\rightarrow	LY
2021	\rightarrow	NLY
2022	\rightarrow	NLY
2023	\rightarrow	NLY
2024	\rightarrow	LY
2028	\rightarrow	LY
2032	\rightarrow	LY



Century

2100, 2000, 1900, 1800,

$$\text{year \% } 100 == 0$$

Non Century

2022, 1999, 2007
2004, 2001, 1984

$$\text{year \% } 100 != 0$$

2100 \rightarrow NLY

$\text{year \% } 400 == 0$ $\text{year \% } 400 != 0$

LY NLY

$\text{year \% } 4 == 0$ $\text{year \% } 4 != 0$

LY NLY

if (year % 4 || year % 400)

→ 0 (N) Leap Year

False || True

LY
2020

False || True

NLY

2020
NLY
LY

- Read
- Testcase
- Dry

NLY
↑
1900

Ass-S
a = 10

a b c

if ($a > b \& a > c$)

else

a

if ($b > c$)

b

else

c

x

$a > b$

T

F

$a > c$

T

a

c

$b > c$

T

b

c