Date : 15th - 09 - 2020
Morning Session : 9am – 11.00 PM
By ~ Rohan Kumar

Topics: BITWISE OPERATORS

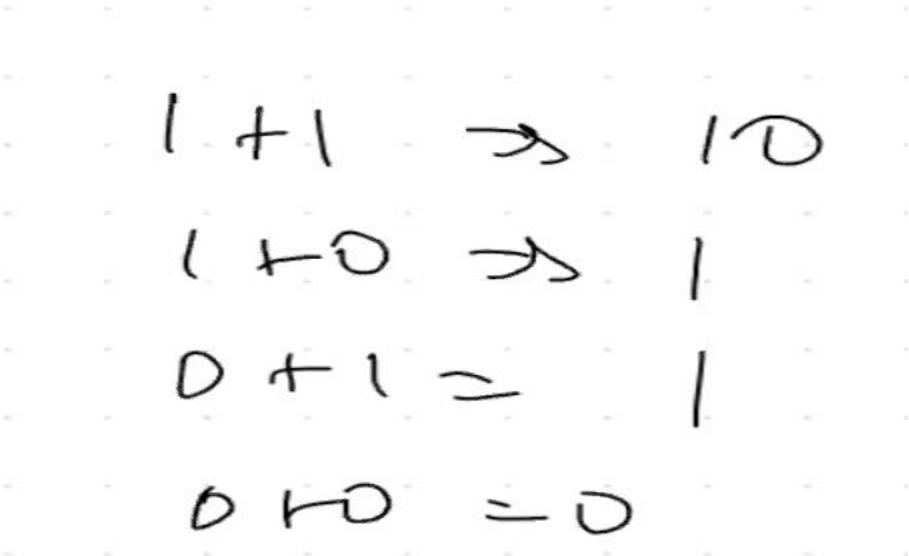
Bit manipulation:

Bitwise Operators : work on Binary digits and return integer.

1) **Complement operator (~)**
2) **Bitwise AND (&)**
3) **Bitwise OR (|)**
4) **XOR (^)**
5) **Left Shift (<<)**
6) **Right Shift (>>)**

In a computer everything stored in binary format(0 or 1)

0 => 0 0 0 0 , 1 => 0 0 0 1 , 2=> 0 0 1 0 , 3 => 0 0 1 1 , 4 => 0 1 0 0 , 5 => 0 1 0 1 , 6 => 0 1 1 0 , 7 => 0 1 1 1 , 8 => 1 0 0 0 , 9 => 1 0 0 1 , 10 => 1 0 1 0 , 11 => 1 0 1 1 , 12 => 1 1 0 0 , 13 => 1 1 0 1, 14 => 0 0 0 0 , 15 => 1 1 1 0 , 16 => 1 1 1 1 .



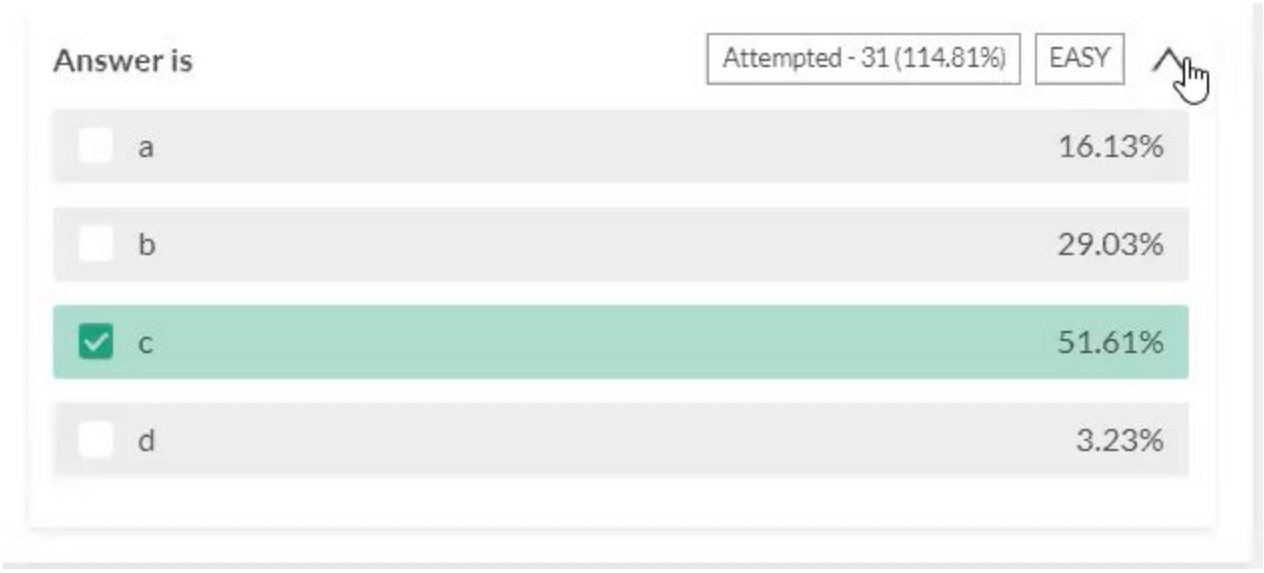
For more Explanation please watch the lecture

http://d3w35yba4tosuh.cloudfront.net/1132bb20-f716-11ea-9cfc-ffcc4567be70.mp4

MCQ 1:

3. Bitwise _____ gives 1 if either of the bits is 1 and 0 when both of the bits are 1.

a) OR
b) AND
c) XOR
d) NOT

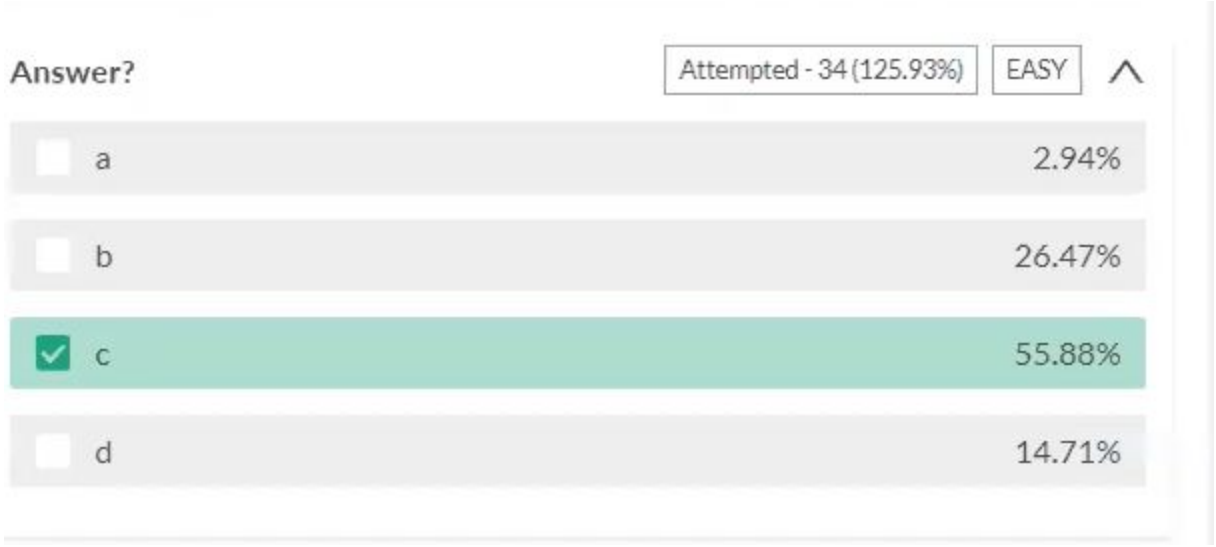


MCQ 2:

4. What will be the output of the following Python expression?

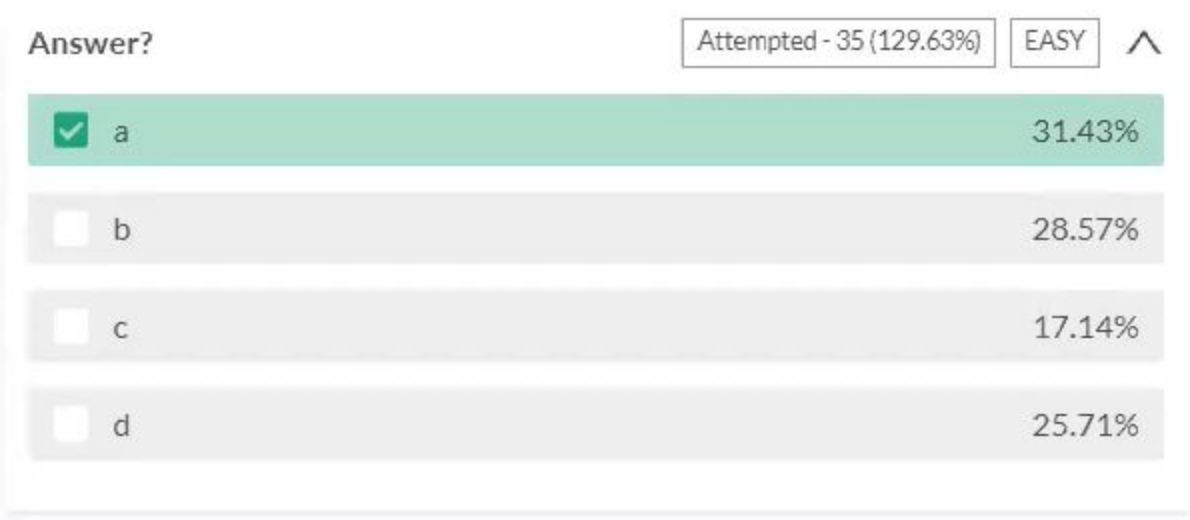
```
4^12
```

a) 2
b) 4
c) 8
d) 12



MCQ 3:

7. Which of the following expressions can be used to multiply a given number 'a' by 4?
a) a<<2
b) a<<4
c) a>>2
d) a>>4

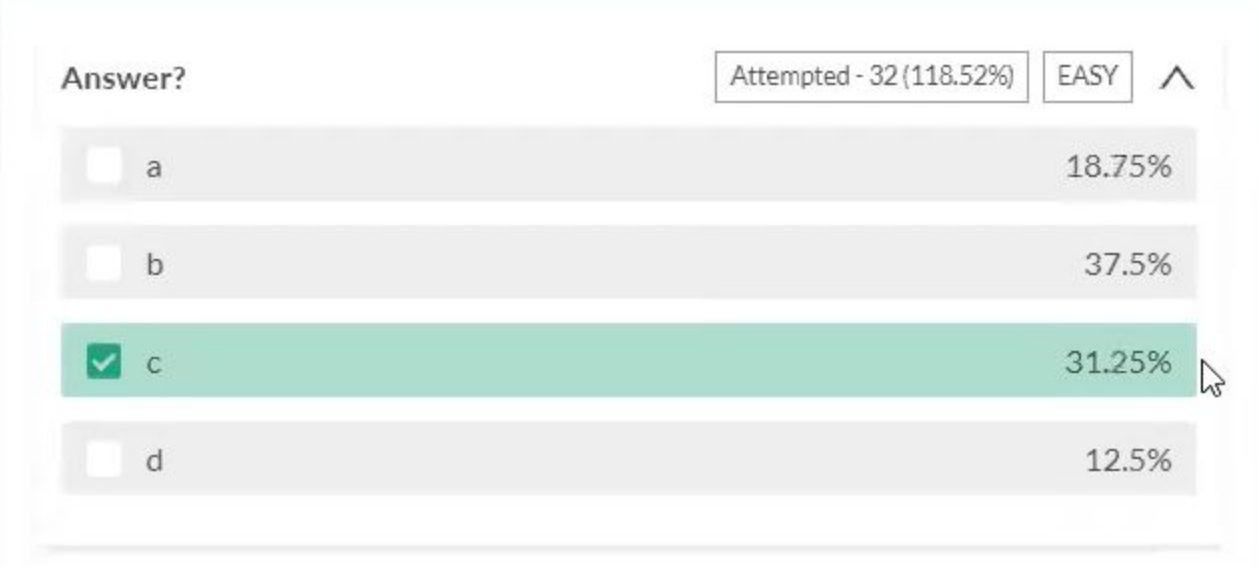


MCQ 4:

8. What will be the output of the following Python code if a=10 and b =20?

```
a=10
b=20
a=a^b
b=a^b
a=a^b
print(a,b)
```

a) 10 20
b) 10 10
c) 20 10
d) 20 20



Resource:

https://www.geeksforgeeks.org/python-bitwise-operators/#:~:text=In%20Python%2C%20bitwise%20operators%20are,perform%20bitwise%20calculations%20on%20integers.&text=Bitwise%20AND%20operator%3A%20Returns%201,bit%20is%201%20else%200.