PYTHON – WORKSHEET 1

Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following operators is used to calculate remainder in a division?
   A) # B) &
   C) % D) $

Answer = C) %

2. In python 2//3 is equal to?
   A) 0.666 B) 0 C) 1 D) 0.67

Answer = B) 0

3. In python, 6<<2 is equal to?
   A) 36 B) 10
   C) 24 D) 45

Answer = C) 24

4. In python, 6&2 will give which of the following as output?
   A) 2 B) True
   C) False D) 0

Answer = A) 2

5. In python, 6|2 will give which of the following as output?
   A) 2 B) 4
   C) 0 D) 6

Answer = D) 6

6. What does the finally keyword denotes in python?
   A) It is used to mark the end of the code
   B) It encloses the lines of code which will be executed if any error occurs while executing the lines of code in the try block.
   C) the finally block will be executed no matter if the try block raises an error or not.
   D) None of the above

Answer = C) he finally block will be executed no matter if the try block raises an error or not.

7. What does raise keyword is used for in python?
   A) It is used to raise an exception. B) It is used to define lambda function
   C) it's not a keyword in python. D) None of the above

Answer = A) It is used to raise an exception.

8. Which of the following is a common use case of yield keyword in python?
   A) in defining an iterator B) while defining a lambda function
   C) in defining a generator D) in for loop.

Answer = A) in defining an iterator

Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.

9. Which of the following are the valid variable names?

A) _abc B) 1abc

C) abc2 D) None of the above

Answer = D) None of the above

10 .Which of the following are the keywords in python?

B) yield B) raise

C) look-in D) all of the above

Answer = D) all of the above

Q11 to Q15 are programming questions. Answer them in Jupyter Notebook.

11. Write a python program to find the factorial of a number.

Answer = Factorial of a non-negative integer, is multiplication of all integers smaller than or equal to n. For example factorial of 6 is 6*5*4*3*2*1 which is 720.

1.Recursive approach:

```
# Python 3 program to find
# factorial of given number
def factorial(n):

# single line to find factorial
return 1 if (n==1 or n==0) else n * factorial(n - 1);

# Driver Code
num = 5;
print("Factorial of",num,"is",
factorial(num))
```

12. Write a python program to find whether a number is prime or composite.

Answer = Given a positive integer N, The task is to write a Python program to check if the number is Prime or not in Python.

Examples:

```
Input: n = 11
Output: True


Input: n = 1
Output: False
```

What is the Prime number

A prime number is a natural number greater than ...

```
num = 11
# If given number is greater than 1
if num > 1:
# Iterate from 2 to n / 2
for i in range(2, int(num/2)+1):
# If num is divisible by any number between
```

13. Write a python program to check whether a given string is palindrome or not.

Answer = Given a string, write a python function to check if it is palindrome or not. A string is said to be a palindrome if the reverse of the string is the same as the string. For example, “radar” is a palindrome, but “radix” is not a palindrome.

Examples:

Recommended: Please try your approach on ***{IDE}*** first, before moving on to the solution.

Method #1

1. Find reverse of the string
2. Check if reverse and original are same or not.

Python

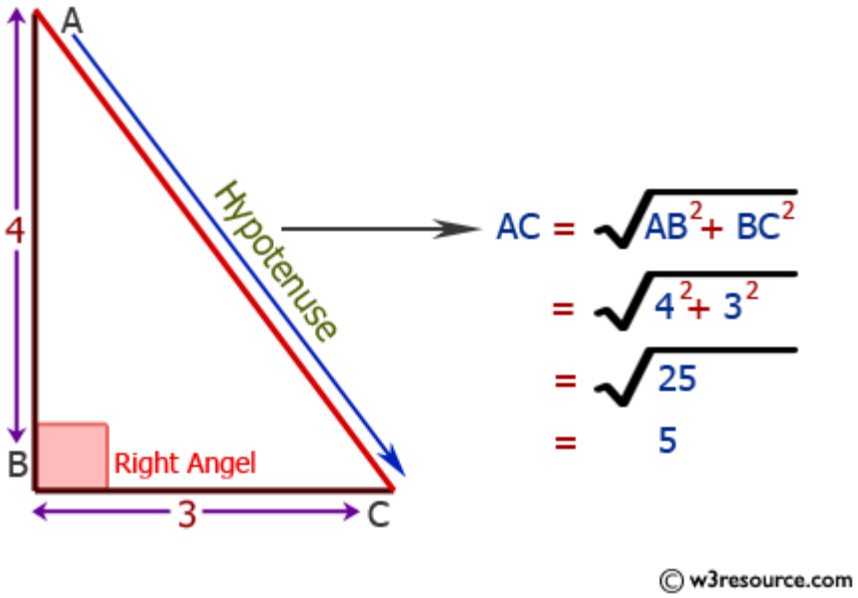
```
# function which return reverse of a string

def isPalindrome(s):
    return s == s[::-1]


# Driver code
s = "malayalam"
ans = isPalindrome(s)

if ans:
    print("Yes")
else:
    print("No")
```

14. Write a Python program to get the third side of right-angled triangle from two given sides.

Answer = Write a Python program to get the third side of a right-angled triangle from two given sides.

Note: Use bitwise operations to add two numbers.

Pictorial Presentation:



Sample Solution:

Python Code:

```
def pythagoras(opposite_side,adjacent_side,hypotenuse):

        if opposite_side == str("x"):

            return ("Opposite = " + str(((hypotenuse**2) -
(adjacent_side**2))**0.5))

        elif adjacent_side == str("x"):

            return ("Adjacent = " + str(((hypotenuse**2) -
(opposite_side**2))**0.5))

        elif hypotenuse == str("x"):

            return ("Hypotenuse = " + str(((opposite_side**2) +
(adjacent_side**2))**0.5))

        else:

            return "You know the answer!"


print(pythagoras(3,4,'x'))

print(pythagoras(3,'x',5))

print(pythagoras('x',4,5))
```

```
print(pythagoras(3,4,5))
```

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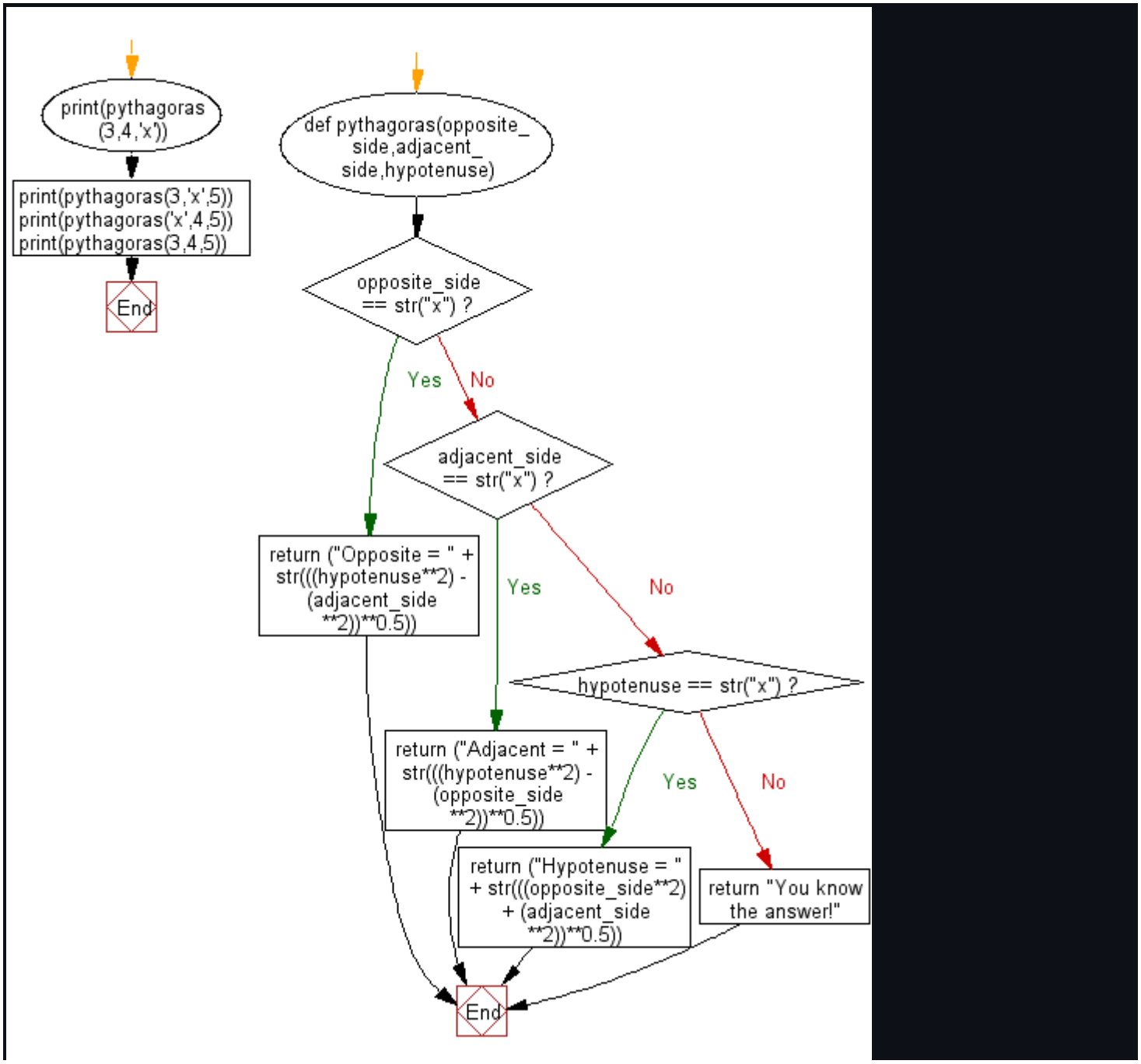
Sample Output:

```
Hypotenuse = 5.0
Adjacent = 4.0
Opposite = 3.0
You know the answer!
```

Flowchart:



15. Write a python program to print the frequency of each of the characters present in a given string.

Answer = Given a string, the task is to find the frequencies of all the characters in that string and return a dictionary with key as the character and its value as its frequency in the given string.

Method #1 : Naive method

Simply iterate through the string an...

```
# Python3 code to demonstrate
# each occurrence frequency using
# naive method

# initializing string
test_str = "GeeksforGeeks"

# using naive method to get count
# of each element in string
all_freq = {}

for i in test_str:
if i in all_freq:
all_freq[i] += 1
```