In [ ]:

Q1. WAP to check whether a number is even or odd.

In [2]:
```python
num=int(input("Enter the number : "))
if num %2 ==0:
    print("The number is even")
else:
    print("The number is odd")
```
```
The number is even
```

Q2. WAP to check whether person is eligible for voting.

In [6]:
```python
age=int(input("Enter your age: "))
if age>=18:
    print("you are eligible for voting")
else:
    print("you are not eligible for voting")
```
```
you are not eligible for voting
```

Q3. WAP to enter a number between 1 to 7 as days of a week and print the day accordingly. (Monday, Tuesday ...) using if elif case.

In [7]:
```python
day=int(input("Enter the number"))
if day==1:
    print("Monday")
elif day==2:
    print("Tuesday")
elif day==3:
    print("Wednesday")
elif day==4:
    print("Thursday")
elif day==5:
    print("Friday")
elif day==6:
    print("Saturday")
elif day==7:
    print("Sunday")
else:
    print("The number enter is invalid")
```
```
Wednesday
```

Q4. WAP to enter a number between 1 to 7 as days of a week and print the day accordingly. (Monday, Tuesday ...) using match case.

In [8]:
```python
day=int(input("Enter the number between (1 to 7)"))
match day:
     case 1:
       print("Monday")
     case 2:
        print("Tuesday")
     case 3:
        print("Wednesday")
     case 4:
       print("Thursday")
     case 5:
         print("Friday")
     case 6:
         print("Saturday")
     case 7:
         print("Sunday")
     case _:
         print("The number enter is not between the (1 to 7)")
```
```
Friday
```

Q5. WAP to check whether a year is a leap year or not. A year is a leap year if "any one of " the following conditions are satisfied: • The year is multiple of 400. • The year is a multiple of 4 and not a multiple of 100

In [10]:
```python
year=int(input("Enter the year : "))
if (year  %400 ==0 ) or (year %4 ==0  and year %100 !=0):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year")
```
```
2023 is not a leap year
```

Q6. WAP to calculate to take in the marks of 5 subjects, compute average and display the grade as per following rules: • average >= 90 : "A" • average >= 80 : "B" • average >= 70 : "C" • average >= 60 : "D"

In [15]:
```python
marks = []
for i in range(5):
    mark = float(input(f"Enter marks for  subjects {i+1}:"))
    marks.append(mark)

average = sum(marks)/5
print("The average marks obtained is:",average)

if average>=90:
    print("The grade obtained is A")
elif average>=80:
    print("The grade obtained is B")
elif average>=70:
    print("The grade obtained is C")
elif average>=60:
    print("The grade obtained is D")
else :
    print("The student is falied in exam!!")
```
```
The average marks obtained is: 81.4
The grade obtained is B
```

Q7. WAP to input a character . Check whether the charecter is vowel or consonant

In [16]:
```python
character= input("Enter a chracter: ")

if len(character) == 1:
    character= character.lower()
    if character in 'a e i o u':
        print("The character is a vowel.")
    else:
        print("The character is a consonant.")
else:
    print("PLease enter a single character ")
```
```
The character is a consonant.
```

Q8. WAP to search an element in a list [use for: else clause]

In [17]:
```python
list= [10,20,30,40,50,60,70,80,90,100]

search_element=int(input("Enter the element to search: "))

for item in list:
    if item== search_element:
        print(f"Element {search_element} found in the list.")
        break
else :
    print(f"Element {search_element} not found in the list")
```
```
Element 50 found in the list.
```

Q9. Write a program to take a single digit number from the key board and print its spelling in English word using if elif.

In [18]:
```python
digit = int(input("Enter a single-digit number (0 to 9): "))

if digit == 0:
    print("Zero")
elif digit==1:
    print("One")
elif digit==2:
    print("Two")
elif digit==3:
    print("Three")
elif digit==4:
    print("Four")
elif digit==5:
    print("Five")
elif digit==6:
    print("Six")
elif digit==7:
    print("Seven")
elif digit==8:
    print("Eight")
elif digit==9:
    print("Nine")
else:
    print("The enter number is not between the (0-9).")
```
```
Six
```

Q10. WAP to input three numbers and arrange them in ascending numbers.

In [19]:
```python
num1=float(input("Enter the frist number: "))
num2=float(input("Enter the second number:"))
num3=float(input("Enter the thrid number:"))

numbers = [num1 ,num2 ,num3]
numbers.sort()
print("Number in ascending order:",numbers)
```
```
Number in ascending order: [1.0, 2.0, 3.0]
```

Q11. Write a program to take a single digit number from the key board and print its spelling in English word using match case

In [20]:
```python
digit=int(input("Enter the single digir number between (0-9):"))

match digit:

    case 0:
        print("Zero")
    case 1:
        print("One")
    case 2:
        print("Two")
    case 3:
        print("Three")
    case 4:
        print("Four")
    case 5:
        print("Five")
    case 6:
        print("Six")
    case 7:
        print("Seven")
    case 8:
        print("Eight")
    case 9:
        print("Nine")
    case _:
        print("The number is not between the (0-9).")
```
```
Five
```

Q.12 WAP to read two numbers and arithmetic operator [+,-,*,/,%] perform the operation and display the computed result. [Hint: use elif statement]

In [21]:
```python
num1= float(input("Enter the Frist number:"))
num2= float(input("Enter the second number:"))

operator = input("Enter an operator ")

if operator== '+' :
    answer= num1+num2
    print(f"The answer is {num1} + {num2}= {answer}" )
elif operator =='-':
     answer= num1-num2
     print(f"The answer is {num1} - {num2}= {answer}" )

elif operator =='*':
     answer= num1*num2
     print(f"The answer is {num1} * {num2}= {answer}" )
elif operator =='/':
     answer= num1/num2
     print(f"The answer is {num1} / {num2}= {answer}" )
elif operator =='%':
     answer= num1%num2
     print(f"The answer is {num1} % {num2}= {answer}" )
```
```
The answer is 2.0 + 6.0= 8.0
```

Q.13 WAP to check whether a inputted character is uppercase or lowercase or digit or any other character.

In [22]:
```python
char = input("Enter a character")
if len(char) !=1:
    print("Please enter only one character.")
else :
    if char.isupper():
        print("The character is uppercase.")
    elif char.islower():
        print("The character is lowercase.")
    elif char.isdigit():
        print("The character is digit.")
    else:
        print("The character is neither uppercase,lowercase , nor a digit.")
```
```
The character is digit.
```

Q14. Develop a number guessing game using loops and conditional statements. Ask user to guess a secret number. If user has not guessed correct number, provide him/her hint.

In [ ]:
```python
import random

secret_number = random.randint(1,100)

print("Welcome to the Number Guessing Game!")
print("I ahev chossen a secret number between 1 and 100")
print("Try to guess it!")

while True:
    guess = input("Enter the guess:")

    if not guess.isdigit():
        print("Please enter a valid number.")
        continue

    guess = int(guess)

    if guess < secret_number:
        print("Too low ! Try again")
    elif guess > secret_number:
        print("too high! Try again.")
    else:
        print("Congratulation! You've guessed the secret number!")
        break
```

Q16. WAP to display numbers from 15 to 1 in descending order.

In [28]:
```python
for num in range (15,0,-1):
    print(num, end=' ')
```
```
15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
```

Q17. WAP to display sum of numbers from 11 to 200 using for loop.

In [29]:
```python
total_sum = 0

for number in range(11 ,201):
    total_sum  += number
print("The sum of number from 11 to 200 is: ", total_sum)
```
```
The sum of number from 11 to 200 is:  20045
```

Q18. WAP to display average of numbers from 5to 15 and 21 to 60.

In [30]:
```python
sum =0
count=0

for num in range (5,16):
    total_sum += num
    count += 1

for num in range (21,60):
    total_sum +=num
    count += 1

average = total_sum/count

print("The average of number from 5 to 15 and 21 to 60 is:",average)
```
```
The average of number from 5 to 15 and 21 to 60 is: 434.3
```

Q19. WAP to display odd numbers from 5 to 30.

In [31]:
```python
5
7
9
11
13
15
17
19
21
23
25
27
29
```
Out[31]:
```
29
```

Q20. WAP to find factorial of a number inputted by the user.

In [32]:
```python
num = int(input("Enter a non-negative integer:"))

if num <0:
    print("Factorial is not defined for negative number")
else :
    factorial=1
    for i in range (1,num +1):
        factorial *= i
    print(f"The factorial of {num} is: {factorial}")
```
```
The factorial of 4 is: 24
```

Q21. WAP to find sum of digits of a int number.

In [60]:
```python
def sum_of_digit(n):
    sum=0
    while n>0:
        digit = n % 10
        sum += digit
        n //=10
```

Q22. WAP to display sum of even numbers between 30 and 50.

In [ ]:
```python
print(sum(range(30,51,2)))
```

Q23. WAP to print multiplication table.

In [65]:
```python
num = int(input("Enter a number: "))
for i in range(1,11):
    print(f"{num} x {i} = {num * i}")
```
```
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
3 x 4 = 12
3 x 5 = 15
3 x 6 = 18
3 x 7 = 21
3 x 8 = 24
3 x 9 = 27
3 x 10 = 30
```

Q24. WAP to print the following patterns: 1 2 2 3 3 3 4 4 4 4

In [66]:
```python
for i in range(1,5):
    print(((str(i)) + ' ' ) * i)
```
```
1
2 2
3 3 3
4 4 4 4
```

Q.25 WAP to print pattern: *

- ▪

- ▪
-

In [67]:
```python
for i in range(1,5):
    print('* ' *i)

for i in range (3,0,-1):
    print('* '  *i)
```
```
*
* *
* * *
* * * *
* * *
* *
*
```

Q.26 WAP to print pattern: A B B C C C

In [68]:
```python
for i in range (1,4):
     print((chr(65 + i -1) + ' ' ) * i)
```
```
A
B B
C C C
```

Q.27 Write a program to find whether given number is an Armstrong Number Hint: Given a number x, determine whether the given number is Armstrong number or not. A positive integer of n digits is called an Armstrong number of order n (order is number of digits) if. abcd = pow(a,n) + pow(b,n) + pow(c,n) + pow(d,n) Ex: 153 is an Armstrong number.

111 + 555 + 333 = 153

In [ ]:
```python
num= int(input("Enter a number"))

if num == sum(int(digit) ** len(str(num)) for digit in str(num)):
    print(num,"is the Armstrong number.")
else:
    print(num,"is not a Armstrong number.")
```

Q28. WAP to generate the Fibonacci series up to n terms. Hint: Fibonacci series: 0 1 1 2 3 5 8 Formulae: Fn = Fn-1 + Fn-2 with seed values : F0 = 0 and F1 = 1.

f1=0, f2=1, f3=f1+f2, f4=f3+f2 f5=f4+f3 ....

In [81]:
```python
n = int(input("Enter the number of terms:"))

f1,f2= 0,1
print("Fibonacci Series: ")
for i in range(n):
    if i==0:
        print(f1,end=' ')
    elif i == 1:
        print(f2, end=' ')
    else:
        f3 = f1 + f2
        print(f3 , end=' ')
        f1,f2 = f2,f3
```
```
Fibonacci Series:
0 1 1
```

Q29. Write a program that check whether a number is prime number or not.

In [82]:
```python
num= int(input("Enter the number: "))

prime_num = True
for i in range(2,num):
    if num %1 ==0:
        prime_num= False
        break

if prime_num:
    print(f"{num} is a prime number.")
else:
    for i in range(2, int(num**0.5) + 1):
        print(f"{num} is a prime number.")
    else:
        print(f"{num} is not primt number.")
```
```
1 is a prime number.
```

Q30. WAP to calculate sum and average of a given array: arr=('i',[1,2,3,4,5])

In [ ]:
```python
arr= ('i' , [1,2,3,4,5,])

num= arr[1]

total_sum = sum(num)
average= total_sum/len(num)

print(f"Sum: {total_sum}")
print(f"Average:{average}")
```

Q31. Write the program to reverse the order of the items in the array

In [90]:
```python
arr= ('i', [1,2,3,4,5,6,7,8])

num=arr[1]

reversed_num= num[::-1]
print("Original array:", num)
print("Reversed array:", reversed_num)
```
```
Original array: [1, 2, 3, 4, 5, 6, 7, 8]
Reversed array: [8, 7, 6, 5, 4, 3, 2, 1]
```

Q32. Write the program to remove duplicate elements in a given arrat of intergers.

In [ ]:
```python
arr=  [1,2,3,4,5,5,6,6,4,6]
unique_num= list(set(arr))

print("Original number:" ,arr)
print("Array without duplication: ", unique_num)
```

Q33.Write a program that takes a string as input and prints it in reverse order.

In [94]:
```python
input_string= input("Enter a string:")
reversed_string= input_string[::-1]

print("Reversed string:", reversed_string)
```
```
Reversed string: 5
```

Q34. Write a program that counts the number of vowels in a given string.

In [95]:
```python
input_string= input("Enter a string:")

vowels = "a e i o u A E I O U"

vowel_count= 0
for char in input_string:
    if char in vowels:
        vowel_count += 1
print("Number of vowel in the string:", vowel_count)
```
```
Number of vowel in the string: 0
```

Q35. Write a program that checks if a given string is a palindrome (reads the same forwards and backwards).

In [97]:
```python
input_string= input("Enter a string: ")

if input_string == input_string[::-1]:
    print(f'"{input_string}" is a palindrome.')
else:
    print(f'"{input_string} is not a palindrome')
```
```
"raginisingh is not a palindrome
```

Q36. Write a program that removes duplicate characters from a string.

In [98]:
```python
input_string= input("Enter  a string: ")

output_string= " "

for char in input_string:
    if char not in output_string:
        output_string += char
print("String after removing duplicates: ", output_string)
```
```
String after removing duplicates:    3
```

Q37. WAP to print even length words in string [hint: split() and for loop]

In [99]:
```python
input_string= "This is sample string  some even length words"

words = input_string.split()

for word in words:
    if len(word) % 2 == 0:
        print(word)
```
```
This
is
sample
string
some
even
length
```

Q38. WAP to remove spaces from given string: "Python is very easy" [Hint: use split() and then join()]

In [100]:
```python
input_string= "Python is very easy"

words= input_string.split()
output_string =''.join(words)

print(output_string)
```
```
Pythonisveryeasy
```

Q39. WAP to convert given list of ASCII value to string. [65, 66, 67, 68, 69] [Hint: use chr() to convert ASCII value to character]

In [101]:
```python
ascii_values= [65,66,67,68,69]

for value in ascii_values:
    print(chr(value), end=' ')
```
```
A B C D E
```

Q40. WAP to print the individual characters of the string inputted by user in the following way Example: H—e—l—l—o

In [102]:
```python
input_string= input("Enter a string: ")
output_string= '-' .join(input_string)
print(output_string)
```
```
1
```