Python Assignment

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

[8]:
```
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.

[10]:
```
age=int(input("Enter your age: "))
if age>=18:
    print("You are eligible for voting")
else:
    print("Your are not eligible for voting")
```

```
Your 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.

[112]:
```
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")
```

```
Tuesday
```

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.

[18]:
```
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)")
```

```
  Cell In[18], line 2
    match day:
          ^
SyntaxError: invalid syntax
```

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

[33]:
```
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"

[55]:
```
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: 83.4
The grade obtained is B
```

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

[115]:
```
character= input("Enter a character: ")

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 vowel.
```

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

[68]:
```
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 100 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.

[74]:
```
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.)")
```

```
The enter number is not between the (0-9.)
```

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

[75]:
```
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

[1]:
```
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).")
```

```
One
```

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

[4]:
```
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 1.0 * 1.0= 1.0
```

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

[5]:
```
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 uppercase.
```

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.

[8]:
```
import random

def number_guessing_game():
    secret_number =  secret_number = 30
    print("Guess the number between 1 to 50")

    while True:
        guess = int(input("Enter your guess: "))
        if guess < secret_number:
            print("Your guess is too low. Try again!")
        elif guess > secret_number:
            print("Your guess is too high. Try again!")
        else:
            print(f"Congratulations! You've guessed the number {secret_number}␣
 ↪correctly.")
            break

# Start the game
number_guessing_game()
```

```
Guess the number between 1 to 50
Your guess is too low. Try again!
Your guess is too high. Try again!
Congratulations! You've guessed the number 30 correctly.
```

Q15. WAP to prompt user to enter name and password until it enters “stud” in name and “pass” in password. Allow only five attempts

[12]:
```
def login():
    attempts=0
    max_attemmpts=5

    while attempts < max_attemmpts:
        name= input("Enter your name: ")
        password= input("Enter your password: ")

        if name =="raj" and password== "123":
            print("Login successful! ")
            return
        else :
            print("Invalid name or password. Please try again.")
            attempts += 1
    print("Maximum attempts reached. Access denied.")
login()
```

```
Login successful!
```

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

[18]:
```
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.

[29]:
```
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.

[30]:
```
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.

[31]:
```
for num in range(5,31):
    if num %2 !=0 :
        print(num)
```

```
5
7
9
11
13
15
17
19
21
23
25
27
29
```

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

[2]:
```
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 12 is: 479001600
```

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

[13]:
```
num= int(input("Enter a number : "))
print("sum of digit:",sum(map(int,str(num))))
```

```
sum of digit: 1
```

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

[1]:
```
print(sum(range(30,51,2)))
```

```
440
```

Q23. WAP to print multiplication table.

[16]:
```
num = int(input("Enter a number: "))
for i in range(1,11):
    print(f"{num} x {i} = {num * i}")
```

```
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
2 x 10 = 20
```

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

[18]:
```
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: * * * * *

[1]:
```
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

[35]:
```
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.

$1^3 + 5^3 + 3^3 = 153$

[2]:
```
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.")
```

```
153 is the 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 ….

[116]:
```
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
```

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

[71]:
```
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.")
```

```
2 is a prime number.
```

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

[72]:
```
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}")
```

```
Sum: 15
Average:3.0
```

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

[73]:
```
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.

[75]:
```
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)
```

```
Original number: [1, 2, 3, 4, 5, 5, 6, 6, 4, 6]
Array without duplication:  [1, 2, 3, 4, 5, 6]
```

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

[79]:
```
input_string= input("Enter a string:")
reversed_string= input_string[::-1]

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

```
Reversed string: 341
```

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

[82]:
```
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: 3
```

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

[88]:
```
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')
```

```
"raajkoli is not a palindrome
```

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

[90]:
```
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:   raijbohulk
```

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

[101]:
```
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()]

[103]:
```
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]

[108]:
```
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

[111]:
```
input_string= input("Enter a string: ")
output_string= '-' .join(input_string)
print(output_string)
```

```
H-e-l-l-o
```