SALWAN PUBLIC SCHOOL

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REPORT FILE

SUBMITTED TO:
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PGT (COMPUTER SCIENCE)
SALWAN PUBLIC SCHOOL

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CLASS: XI-A
SUBJECT: COMPUTER SCIENCE

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ACKNOWLEDGEMENT

It is with pleasure that I acknowledge my sincere gratitude to our teacher, ***Ms.Harshita Agarwal*** who taught and undertook the responsibility of teaching the subject computer science. I have been greatly benefitted from her classes.

My sincere thanks goes to our Principal ***Ms.Priyanka Barara*** who has always been a source of encouragement and support and without whose inspiration, this project would not have been successful.

Finally, I would like to express my sincere appreciation for all the other students of my batch, their friendship & the fine times that we all shared together.

Last but not the least; I would like to thank all those who had helped directly or indirectly towards the completion of this project.

Name: ADITYA WADHAWAN AND YATHARTH DWIVEDI
Class: XI-A (Non-Medical)

Program 1

```
# This program tells us the largest and smallest number in a number list
a = eval(input("Enter list: "))
b = min(a)
c = max(a)
print('largest element-',c)
print('smallest element-',b)
```

Output:

```
Enter list: 7,9,5,0
largest element- 9
smallest element- 0
```

Program 2

```
#fibonacci series
term = int(input("How many terms the user wants to print? "))
a = 0
b = 1
count = 0
if term <= 0:
   print("Please enter a positive integer, the given number is not valid")
elif term == 1:
   print("The Fibonacci sequence of the numbers up to", term, ": ")
   print(a)
else:
   print("The fibonacci sequence of the numbers is:")
   while count < term:
      print(a)
      nth = a + b
      a = b
      b = nth
      count += 1
```

Output

```
How many terms the user wants to print? 8
The fibonacci sequence of the numbers is:
0
1
1
```

```
2
3
5
8
13
```

Program 3

```
# This program asks the user for their marks and determines their grade
user_marks= int(input("please enter your total marks (OUT OF 100): "))
# grading procedure:-

if 25>=user_marks:

    print("Your grade is F")

elif 25<user_marks<=45:

        print("Your grade is E")

elif 50>=user_marks>45:

    print("Your grade is D")

elif 60>=user_marks>50:

    print("Your grade is C")

elif 80>=user_marks>60:

    print("Your grade is B")

elif 100>=user_marks>80:

    print("Your grade is A")
```

Output

```
please enter your total marks (OUT OF 100): 78
Your grade is B
```

Program 4

```
# This program is a guessing game
import random
guess_number = random.randint(10, 100)
a = random.randint(5, 10)
b = random.randint(5, 10)
c = input('would you require a second hint?(y/n)')
print('==========================================================')
print('the number is greater than', guess_number-a)
if c == 'y':
    print('the number is less than', guess_number + b)
guess_count = 0
guess_limit = 5
while guess_count < guess_limit:
    guess = int(input('What is your guess?= '))
    guess_count += 1
    if guess == guess_number:
        print('Congratulations you won!')
        break
    else:
        print('try again')
        if guess < guess_number:
            print('your guess is less than the number')
        elif guess > guess_number:
            print('your guess is greater than the number')
else:
    print('Sorry you lost')
print('the guess number was', guess_number)
```

Output

```
would you require a second hint?(y/n)y
==========================================================
the number is greater than 32
the number is less than 43
What is your guess?= 34
try again
your guess is less than the number
What is your guess?= 40
try again
```

```
your guess is greater than the number
What is your guess?= 39
try again
your guess is greater than the number
What is your guess?= 38
Congratulations you won!
the guess number was 38
```

Program 5

```
# This program asks user the data needed to calculate the attendance and determines if the user will sit in the exam
a = int(input("How many classes did you attend?: "))
b = int(input("How many classes were held?: "))
# calculating percentage
c = a / b
d = c*100
print("your percentage is:-")
print(d)
# determining if user will be allowed to sit in exams
if 75>d:
    print("You are not allowed to sit in the exam")
else:
    print("you are allowed to sit in the exam")
```

Output

```
How many classes did you attend?: 5
How many classes were held?: 8
your percentage is:-
62.5
You are not allowed to sit in the exam
```

Program 6

```
# This program asks the user to input weight and converts it into the unit desired
weight = int(input('what is your weight= '))
unit = (input('please specify if its in Lbs or Kg= '))
if unit.upper() == 'L':
   convert=  weight*0.45
   print(convert,'kgs')
else:
    convert= weight//0.45
```

```
    print(convert,'Lbs')
```

Output

```
what is your weight= 65
please specify if its in Lbs or Kg= kg
144.0 Lbs
```

Program 7

```
# This program asks the user to input three angles and determines if it is a triangle and its type.
a = int(input("What is the first angle: "))
b = int(input("What is the second angle: "))
c = int(input("What is the third angle: "))
if a+b+c == 180:
    print("Angles form a triangle.")
    if a == 90 or b == 90 or c == 90:
        print("Type: Right triangle")
    elif a and b and c == 60:
        print("Type: Equilateral triangle")
    elif a > 90 or b > 90 or b > 90:
        print("Type: Obtuse triangle")
    elif a < 90 or b < 90 or b < 90:
        print("Type: Acute triangle")
else:
    print("Angles do not form a triangle.")
```

Output

```
What is the first angle: 30
What is the second angle: 60
What is the third angle: 90
Angles form a triangle.
Type: Right triangle
```

Program 8

```
# This program determines the BMI of the user
```

```
a = float(input("What is your weight?(in KGS): "))
b = float(input("What is your height?(in M): "))
bmi = a/b**2
print("Your BMI is",round(bmi,-1),"which is considered:-")
if bmi< 18.5:
   print("Underweight")
elif bmi < 25:
   print("Normal")
elif bmi < 30:
   print("Overweight")
else:
   print("Obese")
```

Output

```
What is your weight?(in KGS): 65
What is your height?(in M): 1.65
Your BMI is 20.0 which is considered:-
Normal
```

Program 9

```
# This program flips a coin and plays with the user
import random
a = ["Heads","Tails"]
b = random.choice(a)
c = input("Heads or Tails?")
if b == c:
   print("You won,bot also picked",b)
else:
   print("You lost,bot picked",b)
```

Output

```
Heads or Tails?Heads
You lost,bot picked Tails
```

Program 10

```
# Given the Radius, this Python Program Finds the Area and Circumference of a Circle
radius = int(input("Enter the radius of a circle"))
area_of_a_circle = 3.1415 * radius * radius
```

```
circumference_of_a_circle = 2 * 3.1415 * radius
print(f"Area = {area_of_a_circle} and Circumference = {circumference_of_a_circle}")
```

Output

```
Enter the radius of a circle4
Area = 50.264 and Circumference = 25.132
```

Program 11

```
# A Program to Convert the Given Number of Days to a Measure of Time Given in
#Years, Weeks and Days.
#For Example, 375 Days Is Equal to 1 Year, 1 Week and 3 Days (Ignore Leap Year)
number_of_days = int(input("Enter number of days"))
number_of_years = int(number_of_days/365)
number_of_weeks = int(number_of_days % 365 / 7)
remaining_number_of_days = int(number_of_days % 365 % 7)
print(f"Years = {number_of_years}, Weeks = {number_of_weeks}, Days =
{remaining_number_of_days}")
```

Output

```
Enter number of days405
Years = 1, Weeks = 5, Days = 5
```

Program 12

```
#Program to Check If a Given Year Is a Leap Year
year = int(input('Enter a year'))
if year % 4 == 0:
   if year % 100 == 0:
      if year % 400 == 0:
         print(f'{year} is a Leap Year')
      else:
         print(f'{year} is not a Leap Year')
   else:
      print(f'{year} is a Leap Year')
else:
   print(f'{year} is not a Leap Year')
```

Output

```
Enter a year2020
2020 is a Leap Year
```

Program 13

```
# Program to Find the Average of n Natural Numbers Where n Is the Input from the User
number = int(input("Enter a number up to which you want to find the average"))
i = 0
sum = 0
count = 0
while i < number:
    i = i + 1
    sum = sum + i
    count = count + 1
average = sum/count
print(f"The average of {number} natural numbers is {average}")
```

Output

```
Enter a number up to which you want to find the average10
The average of 10 natural numbers is 5.5
```

Program 14

```
#Program to Find the GCD of Two Positive Numbers
m = int(input("Enter first positive number"))
n = int(input("Enter second positive number"))
if m == 0 and n == 0:
    print("Invalid Input")
if m == 0:
    print(f"GCD is {n}")
if n == 0:
    print(f"GCD is {m}")
while m != n:
    if m > n:
        m = m-n
    if n > m:
        n = n-m
print(f"GCD of two numbers is {m}")
```

Output

```
Enter first positive number7
Enter second positive number9
GCD of two numbers is 1
```

Program 15

```
# A Program to Find the Sum of Digits in a Number
number = int(input('Enter a number'))
result = 0
remainder = 0
while number != 0:
    remainder = number % 10
    result = result + remainder
    number = int(number / 10)
print(f"The sum of all digits is {result}")
```

Output

```
Enter a number4568
The sum of all digits is 23
```

Program 16

```
#Write a Program to Find the Sum of All Odd and Even Numbers up to a Number
Specified by the User.
number = int(input("Enter a number:"))
even = 0
odd = 0
for i in range(number):
    if i % 2 == 0:
        even = even + i
    else:
        odd = odd + i
print(f"Sum of Even numbers are {even} and Odd numbers are {odd}")
```

Output

```
Enter a number:56
Sum of Even numbers are 756 and Odd numbers are 784
```

Program 17

```
# Program to Find the Factorial of a Number
```

```
number = int(input('Enter a number'))
factorial = 1
if number < 0:
   print("Factorial doesn't exist for negative numbers")
elif number == 0:
   print('The factorial of 0 is 1')
else:
   for i in range(1, number + 1):
      factorial = factorial * i
print(f"The factorial of number {number} is {factorial}")
```

Output

```
Enter a number5
The factorial of number 5 is 120
```

Program 18

```
# Program to Check Whether a Number Is Prime or Not
number = int(input('Enter a number > 1: '))
prime = True
for i in range(2, number):
   if number % i == 0:
      prime = False
      break
if prime:
   print(f"{number} is a prime number")
else:
   print(f"{number} is not a prime number")
```

Output

```
Enter a number > 1: 67
67 is a prime number
```

Program 19

```
#a program to input tuple and search given number and display all its positions
T=eval(input("EnterTuple "))
Sno=int(input("Enter number to search"))
Flag=0
for i in range(len(T)) :
```

```
 if T[i]==Sno :
 print("Found at",i+1,"position")
 Flag=1
if Flag==0 :
 print("Number does not exist")
```

Output

```
EnterTuple 1,2,3,4,5,6
Enter number to search2
Found at 2 position
```

Program 20

```
#Write a Program to calculate mean of the given list of numbers
lst=eval(input("Enter list :"))
length=len(lst)
mean=sum=0
for i in range(0,length):
 sum+=lst[i]
mean=sum/length
print( "Given list is:",lst )
print("The mean of the given list is :",mean)
```

Output

```
Enter list :1,8,7,5,6
Given list is: (1, 8, 7, 5, 6)
The mean of the given list is : 5.4
```