TYPE-C:DATA HANDLING:CH-7

1) Write a program to obtain principal amount, rate of interest and time from user and compute simple interest.

sol:

```
p=int(input('enter the principle amount:'))
r=int(input('enter the rate of interest:'))
t=int(input('enter the no.of years:'))
f=p*r*t/100
print('the simple interest is:',f)
```

output:

```
enter the principle amount:15000
enter the rate of interest:5
enter the no.of years:6
the simple interest is: 4500.0
```

2) Write a program to obtain temperatures of 7 days (Monday, Tuesday ... Sunday) and then display average temperature of the week.

sol:

```
t1=int(input('enter the temperature on monday:'))
t2=int(input('enter the temperature on tuesday:'))
t3=int(input('enter the temperature on wednesday:'))
t4=int(input('enter the temperature on thursday:'))
t5=int(input('enter the temperature on friday:'))
t6=int(input('enter the temperature on saturday:'))
t7=int(input('enter the temperature on sunday:'))
av=(t1+t2+t3+t4+t5+t6+t7)/7
print('average is:',av)
```

output:

```
enter the temperature on monday:24
enter the temperature on tuesday:26
enter the temperature on wednesday:25
enter the temperature on thursday:26
enter the temperature on friday:31
enter the temperature on saturday:24
enter the temperature on sunday:25
average is: 25.857142857142858
```

3) Write a program to obtain x, y, z from user and calculate expression : $4x4 + 3y3 + 9z + 6\pi$

sol:

```
x=float(input('enter the num1:'))
y=float(input('enter the num2:'))
z=float(input('enter the num3:'))
f=3.14
a=4*(x**4)
b=3*(y**3)
c=9*z
d=6*f
print(a+b+c+d)
```

output:

```
enter the num1:2
enter the num2:3
enter the num3:5
208.84
```

4) Write a program that reads a number of seconds and prints it in form : mins and seconds, e.g., 200 seconds are printed as 3 mins and 20 seconds.
[Hint. use // and % to get minutes and seconds]

sol:

```
sec=int(input('enter the no.of sec:'))
min=sec//60
newsec=sec%60
print(min,'min and',newsec,'second')
```

output:

```
enter the no.of sec:120
2 min and 0 second
```

5) Write a program to take year as input and check if it is a leap year or not.

sol:

```
year=int(input('enter the year:'))
if year%4==0:
    print('it is a leap year')
else:
    print('not a leap year')
```

output:

```
enter the year:2024
it is a leap year
```

6) Write a program to take two numbers and print if the first number is fully divisible by second number or not.

sol:

```
a=int(input('enter the number1:'))
b=int(input('enter the number2:'))
if a%b==0:
   print('num1 is divisible by num2')
else:
   print('num1 is not divisible by num2')
```

output:

```
enter the number1:6
enter the number2:2
num1 is divisible by num2
```

7) Write a program to take a 2-digit number and then print the reversed number. That is, if the input given is 25, the program should print 52

sol:

```
a=int(input('enter the number:'))
b=a//10
c=a%10
print(c,b,sep='')
```

output:

```
enter the number:56
65
```

8) Try writing program (similar to previous one) for three digit number i.e., if you input 123, the program should print 321.

sol:

```
a=input('enter the number(three digit):')
b=int(a[::-1])
print('reversed number is:',b )
```

output:

```
enter the number(three digit):395
reversed number is: 593
```

9) Write a program to take two inputs for day, month and then calculate which day of the year, the given date is. For simplicity, take 30 days for all months. For example, if you give input as: Day3, Month2 then it should print "Day of the year : 33".

sol:

```
d = int(input("Enter day: "))
m = int(input("Enter month: "))
n = (m - 1) * 30 + d
print("Day of the year:", n)
```

output:

```
   Enter day: 3
```

Enter month: 2
Day of the year: 33

10) Write a program that inputs an age and print age after 10 years as shown below:

What is your age? 17
In ten years, you will be 27 years old!

sol:

```
age=int(input('enter present age:'))
nage=age+10
print('after 10 years your age will be:',nage)
```

output:

enter present age:16
after 10 years your age will be: 26

11) Write a program that asks a user for a number of years, and then prints out the number of days, hours, minutes, and seconds in that number of years.

How many years? 10

10.0 years is:

3650.0 days

87600.0 hours

5256000.0 minutes

315360000.0 seconds

sol:

```
y=int(input('enter the no.of year:'))
d=y*365
print(d,'days')
n=24*d
print(n,'hours')
m=n*60
print(n,'minutes')
s=m*60
print(s,'seconds')
```

output:

enter the no.of year:4
1460 days
35040 hours

35040 minutes
126144000 seconds

12) Write a program to find a side of the triangle whose sides and an angle is given:

sol:

```
import math
a = float(input("Enter base: "))
b = float(input("Enter height: "))
x = float(input("Enter angle: "))
c = math.sqrt(a ** 2 + b ** 2)
print("Hypotenuse =", c)
```

output:

```
Enter base: 24
Enter height: 10
Enter angle: 60
Hypotenuse = 26.0
```

13) Write a program to calculate the radius of a sphere whose area (4πr2) is given.

sol:

```
area=float(input('enter the area:'))
import math
r=math.sqrt(area/(3.14*4))
print('radius is:',r)
```

output:

```
enter the area:57.35
radius is: 2.1368394423886343
```

14) Write a program that inputs a string and then prints it equal to number of times its length, e.g.,
Enter string : "eka"
Result ekaekaeka

sol:

```
s=input('enter the string:')
a=len(s)
print(a*s)
```

output:

```
enter the string:eka
ekaekaeka
```

15) Find the volume of the cylinder (πr2h) as shown:

Radius = 8 cm
Height = 15 cm

sol:

```
pi=3.14
r=8
h=15
volume=pi*(r**2)*h
print('the volume :',volume)
```

output:

```
the volume : 3014.4
```

16) Write a program to input the radius of a sphere and calculate its volume (V = 4/3πr3)

sol:

```
r=float(input('enter the radius:'))
pi=3.14
v=4*pi*(r**3)/3
print('volume is:',v)
```

output:

```
enter the radius:5
volume is: 523.3333333333334
```

17) Write a program to calculate amount payable after simple interest

sol:

```
r=int(input('enter the rate of interest:'))
p=int(input('enter the principle amount:'))
t=int(input('enter the no.of year:'))
print('simple interest is',(r*t*p)/100)
```

output:

```
enter the rate of interest:5
enter the principle amount:5000
enter the no.of year:6
simple interest is 1500.0
```

18) Write a program to calculate amount payable after compound interest.

sol:

```
r=int(input('enter the rate of interest:'))
p=int(input('enter the principle amount:'))
t=int(input('enter the no.of year:'))
print('compound interest is',p*(1+(r/100))**t)
```

output:

```
enter the rate of interest:5
enter the principle amount:5000
enter the no.of year:6
compound interest is 6700.478203125002
```