PYTHON LAB FILE

LAB NO. 1

Question No. 1

Write a program in Python to read name and basic salary of an employee and calculate following perks as per following criteria:

da=40% of basic salary

hra=15% of basic salary

ta=2% of basic salary

also calculate monthly salary and annual salary where

monthly salary=basic salary+da+hra+ta

annual salary=monthly salary*12

Also print Name, and Salary structure as per following:

****

Employee Salary Slip

****

Name=XYZ

Basic Salary=10000

DA= 4000

HRA=1500

TA=200

Monthly Salary=15700

Annual Salary=188400

##########

CODE

```
name=input("Enter Employee Name")
basic=int(input("Enter basic salary"))
da=basic*40/100
hra=basic*15/100
ta=basic*2/100
ms=basic+hra+da+ta
asalary=ms*12
print("")
print("Employee Salary Slip")
print("")
print("Employee Name=",name)
print("Basic Salary=",basic)
print("DA=",da)
print("HRA=",hra)
print("TA=",ta)
print("Monthly Salary=", ms)
print("Annual Salary=", asalary)
print("################################")
```

OUTPUT

```
Enter Employee Name: John Doe
Enter Basic Salary: 10000
************************************
Employee Salary Slip
************************************
Employee Name = John Doe
```

Basic Salary = 10000

DA = 4000.0

HRA = 1500.0

TA = 200.0

Monthly Salary = 15700.0

Annual Salary = 188400.0

##

Question No. 2

Write a program in python to read p, r, and t and and calculate and print simple interest and amount using following formula:

si=prt/100

amount=p+si

CODE

```
# Taking input from user
p = float(input("Enter Principal Amount (P): "))
r = float(input("Enter Rate of Interest (R): "))
t = float(input("Enter Time Period in years (T): "))
# Calculating Simple Interest and Amount
si = (p * r * t) / 100
amount = p + si
# Displaying results
print("\nSimple Interest and Total Amount")
print("---------------------------------")
print(f"Principal Amount = {p}")
print(f"Rate of Interest = {r}%")
print(f"Time Period = {t} years")
print(f"Simple Interest = {si}")
```

```
print(f"Total Amount = {amount}")
```

OUTPUT

```
Enter Principal Amount (P): 5000
Enter Rate of Interest (R): 5
Enter Time Period in years (T): 2
Simple Interest and Total Amount
---------------------------------
Principal Amount = 5000.0
Rate of Interest = 5.0%
Time Period = 2.0 years
Simple Interest = 500.0
Total Amount = 5500.0
```

Question No. 3

Write a program in python to user input Roll no, Name, course, monthly fee, and Annual fees provide a discount of 12% amount fee and print the payable amount fee.

CODE

```
rollno=input("Enter youre Roll No")# taking input
name=input("Enter your Name")
course=input("Enter your course")
mf=float(input("Enter Monthly Fee"))
an=mf*12
d=(an*12)/100
pf=an-d
#Printing Fee Bill
print("++++++++++++++++++++++++++++")
print("Student Fee Bill")
print("++++++++++++++++++++++++++++")
print("Roll No: ",rollno, end='')
```

```
print("Student Name=", name)
print("Annual Fee=",an)
print("Discount=",d)
print("Payable Fee=",pf)
print("$$$$$$$$$$$$$$$$$$$$$$$$$$$$")
```

OUTPUT

```
Enter your Roll No: 101
Enter your Name: Rajesh Kumar
Enter your course: B.Sc
Enter Monthly Fee: 4000
++++++++++++++++++++++++++++
Student Fee Bill
++++++++++++++++++++++++++++
Roll No: 101Student Name= Rajesh Kumar
Annual Fee= 48000.0
Discount= 5760.0
Payable Fee= 42240.0
$$$$$$$$$$$$$$$$$$$$$$$$$$$$
```

Question No. 4

Write a program in python to read any three side of triangle and determène wheather it equilateral triangle, isoscales triangle, or scalene triangle.

CODE

```
# Taking input for three sides of the triangle
side1 = float(input("Enter first side of the triangle: "))
side2 = float(input("Enter second side of the triangle: "))
side3 = float(input("Enter third side of the triangle: "))
# Checking the type of triangle
```

```
if side1 == side2 == side3:
    triangle_type = "Equilateral Triangle"
elif side1 == side2 or side1 == side3 or side2 == side3:
    triangle_type = "Isosceles Triangle"
else:
    triangle_type = "Scalene Triangle"
# Displaying the result
print("\nTriangle Classification")
print("---------------------------")
print(f"Sides: {side1}, {side2}, {side3}")
print(f"Type: {triangle_type}")
```

OUTPUT

```
Enter first side of the triangle: 5
Enter second side of the triangle: 5
Enter third side of the triangle: 5
Triangle Classification
---------------------------
Sides: 5.0, 5.0, 5.0
Type: Equilateral Triangle
```

LAB NO. 2

Question No. 1

Write a program in python to read no. of units used by a consumer of electricity and calculate bill based on following criteria:

no. of units	Rate (per unit in Rs.)
first 100	5/-
for next 100	6.3/-
for next 200	7.5/-
for rest	9/-

plus GST=18% of bill

CODE

```
unit=int(input("enter no. of units used by consumer"))
if unit<=100:
   bill=unit*5
elif unit>100 and unit<=200:
   bill=(100*5)+(unit-100)*6.3
elif unit>200 and unit<=400:
   bill=(100*5)+(100*6.3)+(unit-200)*7.5
else:
   bill=(100*5)+(100*6.3)+(200*7.5)+(unit-400)*9
gst=(bill*18)/100
paybill=bill+gst
print("Total units consumed=",unit)
print("Total Bill=",bill)
print("Total GST=",gst)
print("Total Payable bill=",paybill)
```

OUTPUT

```
enter no. of units used by consumer: 450
Total units consumed = 450
Total Bill = 3450.0
Total GST = 621.0
Total Payable bill = 4071.0
```

Question No. 2

Write a program in python to read name and number of calls made by a post paid mobile customer and calculate its bonus value in Rs. as per following criteria: (1 bonus =Rs 0.25)

No. of Calls Bonus points

up to 300	50
301 to 600	110
601 to 1000	160
for rest	200

CODE

```
name=input("Enter name of customer")
calls=int(input("Enter no. of calls"))
if calls<=300:
   bonus=50
elif calls>300 and calls<=600:
   bonus=110
elif calls>600 and calls<=1000:
   bonus=160
else:
   bonus=200
value=0.25*bonus
print("Customer Name=", name)
print("Total bonus point=",bonus)
print("Total value in Rs.=",value)
```

OUTPUT

```
Enter name of customer: Rahul
Enter no. of calls: 250
Customer Name = Rahul
Total bonus point = 50
Total value in Rs. = 12.5
```

Question No. 3

Write a program in python to read four numbers and using nested if print largest number.

CODE

```
a=int(input("Enter a number"))
b=int(input("Enter a number"))
c=int(input("Enter a number"))
d=int(input("Enter a number"))
if a>b:
    if a>c:
        if a>d:
            print("largest=",a)
        else:
            print("largest=",d)
    else:
        if c>d:
            print("largest=",c)
        else:
            print("largest=",d)
else:
    if b>c:
        if b>d:
            print("largest=",b)
        else:
            print("largest=",d)
    else:
        if c>d:
            print("largest=",c)
        else:
            print("largest=",d)
```

OUTPUT

```
Enter a number: 25
```

Enter a number: 42

Enter a number: 18

Enter a number: 36

largest = 42

Question No. 4

Write a program in python to read a marks scored in physics, chemistry and maths out of 100 in each and allocate stream based on following criteria

Percentage	Stream
>=85 and <=100	Science (PCM) with computer
>=75 and <85	Science (PCM) with Physical Education
>=60 and <75	Science (PCB)
>=50 and <60	Commerce
>=40 and <50	Arts
otherwise	No Stream

Also print Stream Allocation Status as follows:

Total Marks in PCM:

Percentage Marks:

Stream Allocated:

CODE

```
# Taking input for marks
physics = float(input("Enter marks in Physics out of 100: "))
chemistry = float(input("Enter marks in Chemistry out of 100: "))
maths = float(input("Enter marks in Maths out of 100: "))
# Calculating total and percentage
total_marks = physics + chemistry + maths
percentage = (total_marks / 300) * 100
# Allocating stream based on percentage
```

```
if 85 <= percentage <= 100:
    stream = "Science (PCM) with Computer"
elif 75 <= percentage < 85:
    stream = "Science (PCM) with Physical Education"
elif 60 <= percentage < 75:
    stream = "Science (PCB)"
elif 50 <= percentage < 60:
    stream = "Commerce"
elif 40 <= percentage < 50:
    stream = "Arts"
else:
    stream = "No Stream"
# Displaying Stream Allocation Status
print("\nStream Allocation Status")
print("---------------------------------")
print(f"Total Marks in PCM: {total_marks}")
print(f"Percentage Marks: {percentage:.2f}%")
print(f"Stream Allocated: {stream}")
```

OUTPUT

```
Enter marks in Physics out of 100: 90
Enter marks in Chemistry out of 100: 85
Enter marks in Maths out of 100: 80
Stream Allocation Status
---------------------------------
Total Marks in PCM: 255.0
Percentage Marks: 85.00%
Stream Allocated: Science (PCM) with Computer
```

LAB NO. 3

Question No. 1

Write a program to check whether an inputted number is palindrome

CODE

```
n=int(input("enter a number"))
x=n #initialization
s=0
# reversing the number
while(x>0):
    p=x%10 #digit extract
    s=s*10+p #reverse number
    x=x//10
print("Original Number=",n)
print("Reverse Number=",s)
if s==n:
    print("Palindrome number")
else:
    print("Not Palindrome number")
```

OUTPUT

```
enter a number: 121
Original Number= 121
Reverse Number= 121
Palindrome number
```

Question No. 2

Write a program to print the factorial of an inputted number

CODE

```
n=int(input("Enter a number"))
f=1
a=n
while(a>=1):
   f=f*a
   a=a-1
print("Factorial of ", n,"=",f)
```

OUTPUT

```
Enter a number: 7
Factorial of 7 = 5040
```

Question No. 3

Write a program to check whether an inputted number is spy no or not

CODE

```
n=int(input("enter a number"))
prod=1
sum=0
while(n>0):
   p=n%10
   sum=sum+p
   prod=prod*p
   n=n//10
if sum==prod:
   print("Spy number")
else:
   print("Not Spy number")
```

OUTPUT

```
enter a number: 123
Spy number
```

Question No. 4

Write program to check whether an inputted number is perfect number or not

CODE

```
n=int(input("Enter a number"))
i=1
sum=0
while(i<n):
   if n%i==0:
      sum=sum+i
   i=i+1
print("Sum of factors=",sum)
if sum==n:
   print("Perfect Number")
else:
   print("not Perfect Number")
```

OUTPUT

```
Enter a number: 6
Sum of factors = 6
Perfect Number
```

Question No. 5

Write a program generate a Fibonacci-like sequence

CODE

```
a = int(input("Enter the first number: "))
b = int(input("Enter the second number: "))
```

```
n = int(input("Enter the number of terms: "))
i = 1
print(a, ",", b, end=', ')
while i <= n - 2:
    c = a + b
    print(c, end=', ')
    a = b
    b = c
    i = i + 1
```

OUTPUT

```
Enter the first number: 2
Enter the second number: 3
Enter the number of terms: 6
2, 3, 5, 8, 13, 21,
```

Question No. 6

Write a program to print the multiplication table of an inputted number

CODE

```
num = int(input("Enter a number: "))  # Take input from the user
i = 1  # Initialize counter
print(f"\nMultiplication Table of {num}:\n")
while i <= 10:
    print(f"{num} × {i} = {num * i}")  # Print multiplication result
    i += 1  # Increment counter
```

OUTPUT

```
Enter a number: 5
Multiplication Table of 5:


5 × 1 = 5
```

$5 \times 2 = 10$

$5 \times 3 = 15$

$5 \times 4 = 20$

$5 \times 5 = 25$

$5 \times 6 = 30$

$5 \times 7 = 35$

$5 \times 8 = 40$

$5 \times 9 = 45$

$5 \times 10 = 50$