# Lab Assignment 3

1. Write a program to print the commission of Salesman by inputting the monthly sales of him. i.e if the monthly sale is more than 500000 then commission will be 10% of monthly sale otherwise 5%.

```
[1]  sales = float(input("Enter the monthly sales: "))

     if sales > 500000:
         commission = 0.10 * sales
     else:
         commission = 0.05 * sales

     print("The commission is:", commission)
```

```
Enter the monthly sales: 20000
The commission is: 1000.0
```

2. WAP to input any number and print the absolute value of that number.

```
[4]  number = float(input("Enter a number: "))

     absolute_value = abs(number)

     print("The absolute value of", number, "is", absolute_value)
```

```
Enter a number: -999
The absolute value of -999.0 is 999.0
```

3. WAP to input temperature of water and print its physical state.

```
[6]  temperature = float(input("Enter the temperature of water: "))

     if temperature <= 0:
         print("The water is in solid state.")
     elif temperature >= 100:
         print("The water is in gaseous state.")
     else:
         print("The water is in liquid state.")
```

```
Enter the temperature of water: 99
The water is in liquid state.
```

4. WAP to Calculate the average given marks of 5 subjects.

```
[10] marks = []

     for i in range(5):
       marks.append(int(input("Enter the marks: ")))

     avg = sum(marks)/len(marks)
     print(avg)
```

```
Enter the marks: 20
Enter the marks: 25
Enter the marks: 30
Enter the marks: 35
Enter the marks: 40
30.0
```

5. Write a program to enter 3 numbers and print the largest number.

```
[11] numbers = []

     for i in range(3):
       numbers.append(int(input("Enter the number: ")))

     largest = numbers[0]

     for number in numbers:
       if number > largest:
         largest = number

     print("The largest number is:", largest)
```

```
Enter the number: 3
Enter the number: 4
Enter the number: 12
The largest number is: 12
```

6. WAP to Print all Integers that Aren't Divisible by Either 2 or 3 below 100

```
[16] for i in range(1,100):
       if i%2!=0 and i%3!=0:
         print(i, end = " ")
```

```
1 5 7 11 13 17 19 23 25 29 31 35 37 41 43 47 49 53 55 59 61 65 67 71 73 77 79 83 85 89 91 95 97
```

7. WAP to check a number Divisible by Either 2 or 3.

```
[17] #WAP to check a number Divisible by Either 2 or 3.

     num = int(input("Enter the number: "))

     if num%2==0 or num%3==0:
       print("Divisible")
     else:
       print("Not Divisible")
```

```
Enter the number: 7
Not Divisible
```

8. Create a program for a library that calculates late fees for overdue books based on the number of days they're overdue.

```
[3]  def calculate_late_fee(days_overdue):
       base_fee = 10
       daily_rate = 2
       late_fee = base_fee + (days_overdue * daily_rate)
       return late_fee

     days_overdue = 7
     late_fee = calculate_late_fee(days_overdue)
     print("Late fee:", late_fee)
```

```
Late fee: 24
```

9. Implement a simple login system that prompts the user for a username and password. If the username and password match predefined values, grant access; otherwise, deny access.

```
[18] correct_username = "admin"
     correct_password = "admin"

     username = input("Enter your username: ")
     password = input("Enter your password: ")

     if username == correct_username and password == correct_password:
         print("Access granted.")
     else:
         print("Access denied.")
```

```
Enter your username: admin
Enter your password: admin
Access granted.
```

10. Create a ticket pricing system for a cinema where the price depends on factors like age, time of day, and movie type (e.g., regular, 3D, IMAX).

```
customer_age = int(input("Enter your age: "))
show_time = input("Enter the time of day (morning/afternoon/evening):
").lower()
movie_category = input("Enter the movie type (regular/3D/IMAX): ").lower()

if customer_age < 12:
    ticket_price = 5
elif customer_age >= 60:
    ticket_price = 6
else:
    ticket_price = 10

if show_time == "morning":
    price_discount = 2
else:
    price_discount = 0

if movie_category == "3d":
    additional_charge = 3
elif movie_category == "imax":
    additional_charge = 5
else:
    additional_charge = 0

final_ticket_price = ticket_price + additional_charge - price_discount

print("Your ticket price is:", final_ticket_price)
```

```
Enter your age: 22
Enter the time of day (morning/afternoon/evening): evening
Enter the movie type (regular/3D/IMAX): 3D
Your ticket price is: 13
```

11. Write a program that takes three numbers as input and returns them in ascending order.

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

if a > b:
    temp = a
    a = b
    b = temp
if a > c:
    temp = a
    a = c
    c = temp
if b > c:
    temp = b
    b = c
    c = temp

print(a, b, c)
```

```
Enter the first number: 55
Enter the second number: 23
Enter the third number: 99
23 55 99
```

12. Accept the three sides of a triangle and print it is an equilateral, isosceles or scalene triangle.

```
[10] a = int(input("Enter the sides in order: "))
     b = int(input("Enter the sides in order: "))
     c = int(input("Enter the sides in order: "))

     a1 = a*a
     b1 = b*b
     c1 = c*c

     if a==b==c:
       print("Equilateral Triangle")
     elif a==b or b==c or c==a:
       print("Isosceles Triangle")
     elif c1==a1+b1 or a1==b1+c1 or b1==a1+c1:
       print("Right-angled Triangle")
     else:
       print("Scalene Triangle")
```

```
Enter the sides in order: 3
Enter the sides in order: 4
Enter the sides in order: 2
Scalene Triangle
```

13. Write a python program to print the sum of two matrices.

```
[15] a = [
         [1,2],
         [3,4]
     ]
     b = [
         [6,7],
         [8,9]
     ]
     add = [
         [0,0],
         [0,0]
     ]
     for i in range(0,2):
       for j in range(0,2):
         add[i][j] = a[i][j]+b[i][j]

     for i in range(0,2):
       print(add[i])
```

```
[7, 9]
[11, 13]
```

14. Write a python program to print the difference of two matrices.

```
[17] a = [
         [1,2],
         [3,4]
     ]
     b = [
         [6,7],
         [8,9]
     ]
     add = [
         [0,0],
         [0,0]
     ]
     for i in range(0,2):
       for j in range(0,2):
         add[i][j] = b[i][j]-a[i][j]

     for i in range(0,2):
       print(add[i])
```

```
[5, 5]
[5, 5]
```

15. Write a python program to print the transpose of a matrix.

```
def transpose_matrix(matrix):
  rows = len(matrix)
  cols = len(matrix[0])
  transpose = [[0] * rows for _ in range(cols)]

  for i in range(rows):
    for j in range(cols):
      transpose[j][i] = matrix[i][j]

  return transpose

matrix = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
transposed_matrix = transpose_matrix(matrix)

print("Original matrix:")
for row in matrix:
  print(row)

print("\nTransposed matrix:")
for row in transposed_matrix:
  print(row)
```

```
Original matrix:
[1, 2, 3]
[4, 5, 6]
[7, 8, 9]

Transposed matrix:
[1, 4, 7]
[2, 5, 8]
[3, 6, 9]
```

16. Create a python program to do the following

a. Create a list list1 =["100", "200", "300", "400", "500"]
b. Create the reverse of list1 and store to list2
c. Create a list list3=['100500', '200400', '300300', '400200', '500100'] and print

```
[2] list1 = ["100", "200", "300", "400", "500"]
    list2 = list1[::-1]
    list3 = [list1[i] + list2[i] for i in range(len(list1))]

    print(list3)
```

```
['100500', '200400', '300300', '400200', '500100']
```