Machine Learning Laboratory

(410302)

BE Sem I Honors in AI/ML

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Lab Assignment No.1

Name: Aboli Marathe
Roll Number: 41301
Branch: Department of Computer Engineering

Lab Exercise 1

Q.1 Write a program that asks the user for his name and then welcomes him. The output should look like this:
Enter your name: Saksham
Hello Saksham

```
name = input("Enter your name: ")
print("Hello " + name)
```

```
Enter your name: Saksham
Hello Saksham
```

Q.2 Write a program that prompts the user to enter two integers and display the total on the screen.

```
val1 = float(input("Enter the first number: "))
val2 = float(input("Enter the second number: "))
print("The total is " + str(val1+val2))
```

```
Enter the first number: 1
Enter the second number: 2
The total is 3.0
```

Q.3 Write a program that prompts the user to input a Celsius temperature and outputs the equivalent temperature in Fahrenheit. The formula to convert the temperature is: F = 9/5 C + 32

where F is the Fahrenheit temperature and C is the Celsius temperature.

```
celcius = float(input("Enter the temperature in Celsius: "))
fahrenheit = 9/5*celcius + 32
print("The equivalent temperature in Fahrenheit is: " + str(fahrenheit))
```

```
Enter the temperature in Celsius: 31.5
The equivalent temperature in Fahrenheit is: 88.7
```

Q.4 Write a program which accept principle, rate and time from user and print the simple interest. The formula to calculate simple interest is: simple interest = principle x rate x time / 100

```
principal = float(input("Enter the principal amount: "))
rate = float(input("Enter the interest rate (in decimal without the percentage sign): "))
timep = float(input("Enter the time period: "))
interest = (principal * rate * timep)/100
print("The simple interest is: " + str(interest))
```

```
Enter the principal amount: 1000
Enter the interest rate (in decimal without the percentage sign): 1
Enter the time period: 10
The simple interest is: 100.0
```

Q.5 Write a program that accepts seconds from keyboard as integer. Your program should converts seconds in hours, minutes and seconds. Your output should like this :
Enter seconds: 13400
Hours: 3
Minutes: 43
Seconds: 20

```
inp = int(input("Enter seconds: "))
hrs = inp // 3600
inp = inp % 3600
mins = inp //60
inp = inp % 60
seconds = inp // 1
print("\nHours: " + str(hrs) + "\nMinutes: " + str(mins) + "\nSeconds: " + str(seconds))
```

```
Enter seconds: 4480

Hours: 1
Minutes: 14
Seconds: 40
```

Q.6 Write a program that prompts the user to enter number in two variables and swap the contents of the variables.

```
var1 = 3
var2 = 5
temp = var1
```

```
temp = var2
var1 = var2
var2 = temp
print("First variable: " + str(var1) + "\nSecond variable: "  + str(var2))
```

```
First variable: 5
Second variable: 3
```

Q.7 Write a program that prompts the user to enter number in two variables and swap the contents of the variables. (Do not declare extra variable.)

```
var1 = 3
var2 = 5
var1,var2 = var2,var1
print("First variable: " + str(var1) + "\nSecond variable: "  + str(var2))
```

```
First variable: 5
Second variable: 3
```

Q.8 Write a program that prompts the user to input the radius of a circle and outputs the area and circumference of the circle.

```
radius = float(input("Enter the radius: "))
area = 3.14 * (radius**2)
circumference = 2 * 3.14 * radius
print("Area is : " + str(area) + "\nCircumference is: " + str(circumference))
```

```
Enter the radius: 4
Area is : 50.24
Circumference is: 25.12
```

Q.9 Write a program that prompts the user to input the length and the width of a rectangle and outputs the area and circumference of the rectangle.

```
length = float(input("Enter the length: "))
breadth = float(input("Enter the breadth: "))
area = length * breadth
circumference = 2 * (length + breadth)
print("Area is : " + str(area) + "\nCircumference is: " + str(circumference))
```

```
Enter the length: 10
Enter the breadth: 20
Area is : 200.0
Circumference is: 60.0
```

Q.10 Write a program that asks the user to input the length of sides of the triangle and print the area.

```
import math
```

```
a = float(input("Enter the side a: "))
b = float(input("Enter the side b: "))
c = float(input("Enter the side c: "))
s = (a + b + c)/2
area = math.sqrt(s * (s-a) * (s-b) * (s-c))
print("Area is : " + str(area))
```

```
Enter the side a: 5
Enter the side b: 12
Enter the side c: 13
Area is : 30.0
```

Q.11 Write a program which prompts the user to input principle, rate and time and calculate compound interest.

```
principal = float(input("Enter the principal amount: "))
rate = float(input("Enter the interest rate (in decimal without the percentage sign): "))
timep = float(input("Enter the time period: "))
interest = principal * (1 + (rate/100))**timep
print("The compound interest is: " + str(interest))
```

```
Enter the principal amount: 10000
Enter the interest rate (in decimal without the percentage sign): 10
Enter the time period: 5
The compound interest is: 16105.100000000006
```

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