Submitted by- Syed Muhammad Sajjad Haider

Submitted to- Maam Mufeeza

Roll no- FA24-BBA-078

Lab Exercise

Question 1:

Create a variable name to store your name and print it.

```
name = "sajjad haider"
print("my name is=",name)
```

```
my name is= sajjad haider
```

Question 2:

Store two numbers in variables a and b, then print their sum

```
a = 5
b = 7
print(a + b)
```

```
12
```

Quetsion 3:

Create one integer and one float variable, then display their data types

```
x = 10
y = 5.5
print("the data type of x is",type(x),"the data type of y is", type(y))
```

```
the data type of x is <class 'int'> the data type of y is <class 'float'>
```

Question 4:

Store the string "Hello, Python" in a variable and print its length.

```
text="Hello, Python"
print(len(text))
```

```
13
```

Question 5:

Assign a number to a variable x and print its square

```
x = 8
print(x ** 2)
```

```
64
```

Question 6:

Take an input from the user and display its data type.

```
user_input = input("Enter something: ")
print(type(user_input))
```

```
Enter something: Hy everone
<class 'str'>
```

Question 7:

Store a Boolean value in a variable and check whether it is True or not

```
x=True
if x:
    print("True value")
else:
    print("False value")
```

```
True value
```

Question 8:

Use string formatting (f-strings) to print your name and age in one line

```
name = "sajjad Haider"
age = 20
print(f"My name is {name} and I am {age} years old.")
```

```
My name is sajjad Haider and I am 20 years old.
```

Question 9:

Convert an integer variable x = 10 to a float and print the result

```
x = 10
print(float(x))
```

```
10.0
```

Question 10:

Create a complex number and print its real and imaginary parts.

```
z = 6 + 9j
print(z.real, z.imag)
```

```
6.0 9.0
```

Question 11:

Perform addition, subtraction, multiplication, and division on two numbers.

```
a, b = 10, 4
print(a + b, a - b, a * b, a / b)
```

```
14 6 40 2.5
```

Question 12:

Use the floor division (//) operator to get the integer result of division.

```
print(a // b)
```

```
0
```

Question 13:

Use the modulus operator (%) to find the remainder of two numbers.

```
print(a % b)
```

```
12
```

Question 14:

Use the exponentiation operator (**) to calculate the power of a number

```
print(a ** b)
```

```
365726198800883719671408230265503083402743722803 2
```

Question 15:

Use comparison operators (>,<,==,!=) to compare two variables.

```
print(a > b, a < b, a == b, a != b)
```

```
False True False True
```

Question 16:

Use logical operators (and, or, not) to test a condition

```
print(a > 7 and b < 14)
print(a > 7 or b < 14)
print(not(a > 7))
```

```
True
True
False
```

Question 17:

Write an expression that demonstrates operator precedence in Python.

```
print(1 + 6 * 8)
```

```
49
```

Question 18:

Use compound assignment operators (+=, -=) in a short program

```
x = 7
x += 8
x -= 4
print(x)
```

```
11
```

Question 19:

Take two numbers from the user and calculate their average.

```
a = 4
b = 8
avg = (a + b) / 2
print(avg)
```

```
6.0
```

Question 20:

Use a conditional expression (ternary operator) to check if a number is even or odd

```
num = 5
print("Even" if num % 2 == 0 else "Odd")
```

```
Odd
```

Question 21:

Write a program to check whether a number is positive, negative, or zero.

```
num = -3
if num > 0:
    print("Positive")
elif num < 0:
    print("Negative")
else:
    print("Zero")
```

```
Negative
```

Question 22:

Write a program that checks if a number entered by the user is even or odd.

```
num = int(input("Enter a number: "))
print("Even" if num % 2 == 0 else "Odd")
```

```
Enter a number: 78
Even
```

Question 23:

Take the user's age and print whether they are an adult or a minor.

```
age = int(input("Enter age: "))
print("Adult" if age >= 18 else "Minor")
```

```
Enter age: 20
Adult
```

Question 24:

Find and print the largest of three given numbers.

```
a, b, c = 11,56,71
print(max(a, b, c))
```

```
71
```

Question 25:

Write a program that assigns a grade based on marks:

- 90 and above → A
- 80–89 → B
- 70–79 → C
- 60–69 → D
- Below 60 → F

```
marks = 70
if marks >= 90:
    print("A")
elif marks >= 80:
    print("B")
elif marks >= 70:
    print("C")
elif marks >= 60:
    print("D")
else:    print("F")
```

```
C
```

Question 26:

Check whether a given year is a leap year.

```
year = 2025
if year % 4 ==0:
    print("Leap year")
else:
    print("Not a leap year")
```

```
Not a leap year
```

Question 27:

Take the temperature as input and print “Hot”, “Warm”, or “Cold” based on the value.

```
temp = 19
if temp > 30:
    print("Hot")
elif temp >= 20:
    print("Warm")
else:
    print("Cold")
```

```
Cold
```

Question 28:

Create a password-checking program that prints “Access Granted” if the password matches.

```
password = input("Enter password: ")
if password == "python123":
    print("Access Granted")
else:
    print("Access Denied")
```

```
Enter password: python123
Access Granted
```

Question 29:

Input a single character and check whether it is a vowel or a consonant.

```
ch = input("Enter a letter: ").lower()
if ch in 'aeiou':
    print("Vowel")
else:
    print("Consonant")
```

```
Enter a letter: aeiou
Vowel
```

Question 30:

Write a conditional program that prints the day of the week based on a number (1–7).

```
day = int(input("Enter number (1 to 7): "))
if day == 1:
    print("Monday")
elif day == 2:
    print("Tuesday")
elif day == 3:
    print("Wednesday")
elif day == 4:
    print("Thursday")
elif day == 5:
    print("Friday")
elif day == 6:
    print("Saturday")
elif day == 7:
    print("Sunday")
else:
    print("Invalid number! Please enter between 1-7.")
```

```
Enter number (1 to 7): 5
Friday
```

Question 31:

Create a list of fruits and print it.

```
fruits = ["orange", "grapes", "cherry "]
print(fruits)
```

```
['orange', 'grapes', 'cherry ']
```

Question 32:

Add an element to the list using append() and remove one element using remove().

```
fruits = ["orange", "grapes", "cherry"]
print(fruits)
fruits.append("mango")
fruits.remove("grapes")
print(fruits)
```

```
['orange', 'grapes', 'cherry']
['orange', 'cherry', 'mango']
```

Question 33:

Find and print the sum of all numbers in a list.

```
numbers = [6, 8, 9, 10, 11]
print(sum(numbers))
```

```
44
```

Question 34:

Print the maximum and minimum elements in a list

```
numbers = [6, 7, 8, 9,10 ]
print(max(numbers), min(numbers))
```

```
10 6
```

Question 35:

Use list slicing to print the first three and last three elements of a list.

```
print(numbers[:4])
print(numbers[-4:])
```

```
[6, 7, 8, 9]
[7, 8, 9, 10]
```

Question 36:

Replace an element in a list at a specific index.

```
numbers = [10, 20, 30, 40, 50]
numbers[2] = 99
print(numbers)
```

```
[10, 20, 99, 40, 50]
```

Question 37:

Reverse a list using slicing or the reverse() method.

```
numbers = [1, 2, 3, 4, 5]
numbers.reverse()
print(numbers)
```

```
[5, 4, 3, 2, 1]
```

Question 38:

Count how many times a specific element appears in a list.

```
numbers = [2, 3, 2, 5, 2, 7]
print(numbers.count(2))
```

```
3
```

Question 39:

Concatenate two lists and print the new combined list.

```
list1 = [1, 2, 3]
list2 = [4, 5, 6]
combined = list1 + list2
print(combined)
```

```
[1, 2, 3, 4, 5, 6]
```

Question 40:

Use list comprehension to generate a list of squares from 1 to 10.

```
squares = [x**2 for x in range(1, 11)]
print(squares)
```

```
[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
```

Question 41:

Create a tuple and print all its elements.

```
my_tuple = (10, 20, 30, 40)
print(my_tuple)
```

```
(10, 20, 30, 40)
```

Question 42:

Perform tuple unpacking and assign its values to individual variables.

```
t = (5, 10, 15)
a, b, c = t
print(a, b, c)
```

```
5 10 15
```

Question 43:

Find the index and count of a specific value in a tuple

```
t = (1, 2, 3, 2, 4)
print(t.index(3))
print(t.count(2))
```

```
2
2
```

Question 44:

Convert a tuple to a list, modify an element, and convert it back to a tuple.

```
t = (10, 20, 30)
temp_list = list(t)
temp_list[1] = 99
t = tuple(temp_list)
print(t)
```

```
(10, 99, 30)
```

Question 45:

Concatenate two tuples and print the resulting tuple.

```
t1 = (1, 2, 3)
t2 = (4, 5, 6)
t3 = t1 + t2
print(t3)
```

```
(1, 2, 3, 4, 5, 6)
```