Lab Programs 2

Variables & Data Types

Objectives

In this lab programs, you learn about

- Variables Declaration
- Variable Assignment
- Literal Assignment
- Types of Literals
- Integer Literals Notations
- Octal Literals
- Hexa Decimal Literals
- Python Valid Identifiers
- Real Numbers
- float Data Type
- String Literals
- String Literals – Escape Quotes
- String Operations

Prerequisites

Before working on this lab program, you must know

- How to develop python programs.
- How to declare variables.
- How to use literals.
- About the expressions & operators.

Estimated time to complete this lab programs: 150 minutes

❖ Lab Program 01

1. Open the **LiClipse Python** project called **<Your-Name-Project**.>
2. **Create a package** called **CH02** in **<Your-Name-Project>.**
3. Create a new Python file called **B01VariableDeclarationEx1.py** in the **CH02 Package**.
4. Type the below code

```
a = 10
b = 20
c = 21.2
pi = 3.14
print (pi)
```

5. Save the program.
6. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 02

1. Create a new Python file called **D01ZeroPrefixEx1.py** in the **CH02 Package**.
2. Type the below code

```
print(07)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 03

1. Create a new Python file called **D11OctalEx1.py** in the **CH02 Package**.
2. Type the below code

```
print(0O7)
print(0o10)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 04

1. Create a new Python file called **D21HexaDecimalEx1.py** in the **CH02 Package**.
2. Type the below code

```
print(0x7)
print(0XA)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 05

1. Create a new Python file called **D31ValidIdentifierEx1.py** in the **CH02 Package**.
2. Type the below code

```
firstName = 'Mary'
lastName1 = "Brown"

institute_Name = "WISEN"



# $country = "India"
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

5. Delete the # symbol before the $country variable.
6. Save the program.
7. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 06

1. Create a new Python file called **D51SmallAdditionProblemEx1.py** in the CH02 Package.
2. Type the below code

```
_total = 0.0
for i in range(10):
   _total += 0.1
```

```
print(_total)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 07

1. Create a new Python file called **E01StringQuotesEx1.py** in the **CH02 Package**.
2. Type the below code

```
print( "Hello WISEN" )

print( 'Hello WISEN' )
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 08

1. Create a new Python file called **E11StringEscapeQuotesEx1.py** in the **CH02 Package**.
2. Type the below code

```
print("Let's achieve Our Dream Career")

print('Let"s achieve Our Dream Career')

print("Let\"s achieve Our Dream Career")

print('Let\'s achieve Our Dream Career')
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

5. Delete the \ (forward slash).
6. Save the program.
7. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 09

1. Create a new Python file called **E21SpecialCharactersEx1.py** in the **CH02 Package**.
2. Type the below code

```
print("Mary \t Brown")
print()
print("John \n Peter")
print()
print("James \\ Harper")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 10

1. Create a new Python file called **E31RawStringsEx1.py** in the **CH02 Package**.
2. Type the below code

```
print(r"Mary \t Brown")
print()
print(R"John \n Peter")
print()
print(r"James \\ Harper")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 11

1. Create a new Python file called **E41LiteralsInMultilinesEx1.py** in the **CH02 Package**.
2. Type the below code

```
print(""" WISEN
    IT
 SOLUTIONS""")

print("'Chennai
   TN
      India'")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 12

1. Create a new Python file called **E51MultiLineLiteralsNewLineEx1.py** in the **CH02 Package**.
2. Type the below code

```
print("""
WISEN
 SOLUTIONS""")

print('''\
Chennai
      India''')

print('''
Mary
   Brown''')
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 13

1. Create a new Python file called **E61StringConcatUsingPlusEx1.py** in the **CH02 Package**.
2. Type the below code

```
firstName = "Mary "
lastName = "Brown"

print(firstName+lastName)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 14

1. Create a new Python file called **E71StringConcatUsingLiteralsNextEx1.py** in the CH02 Package.
2. Type the below code

```
print('WISEN ' 'IT '          "SOLUTIONS")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 15

1. Create a new Python file called **E81StringConcatUsingLiteralsNextProblemEx1.py** in the **CH02 Package**.
2. Type the below code

```
place = "Chennai"
print(place "India")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 16

1. Create a new Python file called **F011StringRepeatUsingStarEx1.py** in the **CH02 Package**.
2. Type the below code

```
word = "ha "

print(word * 5)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 17

1. Create a new Python file called **F11StringIndexEx1.py** in the **CH02 Package**.
2. Type the below code

```
instituteName = "WISEN"
print(instituteName[-1])
print(instituteName[-2])
print(instituteName[-5])
print()
print("India"[-2])

print("\nReverse Index")

print(instituteName[-1])
print(instituteName[-2])
print(instituteName[-5])
```

3. Save the program.

4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 18

1. Create a new Python file called **F21StringIndexOutOfRangeEx1.py** in the **CH02 Package**.
2. Type the below code

```
country = "India"

print(country[5])
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 19

1. Create a new Python file called **F31StringSlicingEx1.py** in the **CH02 Package**.
2. Type the below code

```
institute_Name = "WISEN"

print( institute_Name[1:4] )
print()
print( "India"[1:4] )
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 20

1. Create a new Python file called **F41StringSlicingIndexOmittedEx1.py** in the **CH02 Package**.
2. Type the below code

```
institute_Name = "WISEN"

print( institute_Name[:4] )

print( institute_Name[1:] )
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 21

1. Create a new Python file called **F51StringSlicingNegativeIndexEx1.py** in the **CHP02 Package**.
2. Type the below code

```
institute_Name = "WISEN"
print( "India"[-4:-2] )
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 22

1. Create a new Python file called **F61StringSlicingNegativeIndexesOmittedEx1.py** in the **CHP02 Package**.
2. Type the below code

```
institute_Name = "WISEN"

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

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 23

1. Create a new Python file called **F71StringSlicingOutOfRangeEx1.py** in the **CHP02 Package**.
2. Type the below code

```
country = "India"

print( country[ 3 : 10] )

print( country[  5  :  10] )
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 24

1. Create a new Python file called **F81StringLengthEx1.py** in the **CHP02 Package**.
2. Type the below code

```
country = "India"

print(len(country));
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 25

1. Create a new Python file called **F91StringImmutableEx1.py** in the **CHP02 Package**.
2. Type the below code

```
data = "MyValue"

data[2] = "A"
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 26

5. Create a new Python file called **XXX.py** in the CHP02 Package.
6. Type the below code

7. Save the program.
8. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 27

9. Create a new Python file called **XXX.py** in the **CHP02 Package**.
10. Type the below code

11. Save the program.
12. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 28

13. Create a new Python file called **XXX.py** in the **CHP02 Package**.
14. Type the below code

15. Save the program.
16. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 29

17. Create a new Python file called **XXX.py** in the **CHP02 Package**.
18. Type the below code

19. Save the program.
20. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 30

21. Create a new Python file called **XXX.py** in the **CHP02 Package**.
22. Type the below code

23. Save the program.
24. Execute the program.

Program Output

What you learnt from this program?