**Shashwat Tripathi**

**D10A 58**

**BATCH: C**

**PYTHON LAB**

**Assignment No: 1**

**Q)** Grading a MCQ test using Multi-dimensional arrays.



**Shashwat Tripathi**

**D10A 58**

**Batch: C**

**PYTHON LAB**

**Exp No: 1**

**AIM:** Write python programs to understand

a) Basic data types, Operators, expressions and Input Output Statements

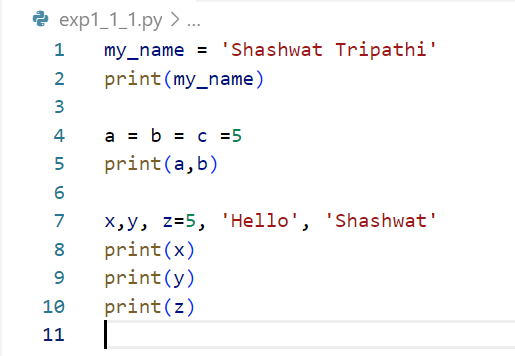
b) Control flow statements: Conditional statements (if, if...else, nested if)

c) Looping in Python (while loop, for loop, nested loops)

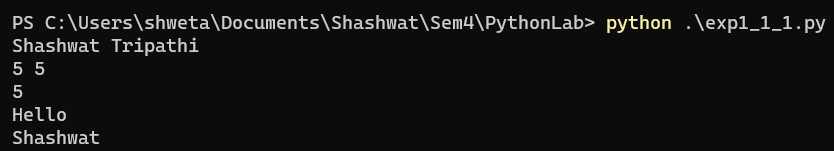
d) Iterators and Generators.

**PRINT STATEMENT**

Code:

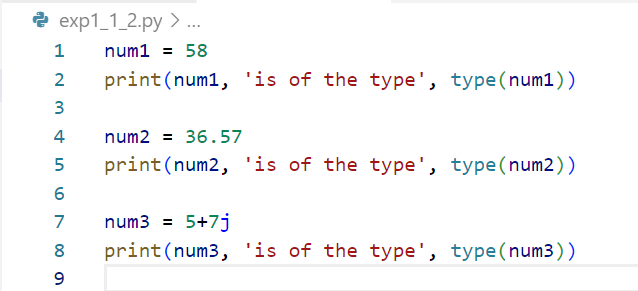


Output:

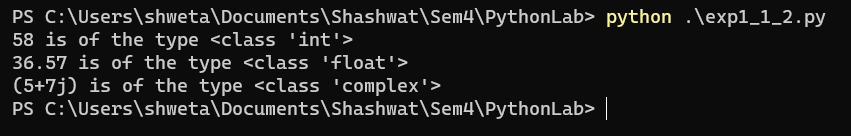


**IDENTIFY TYPES**

Code:

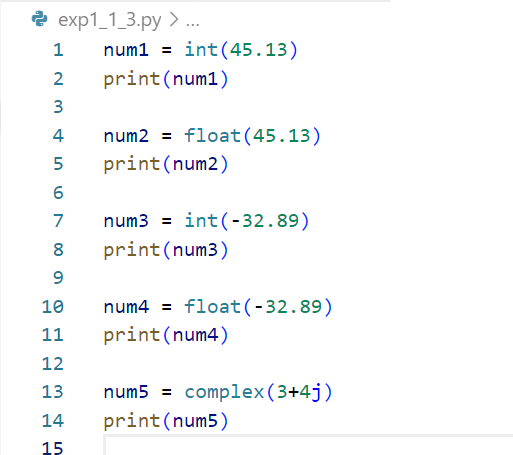


Output:

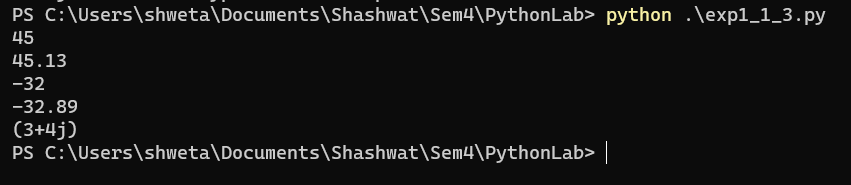


**PRINT DATA OF TYPES**

Code:

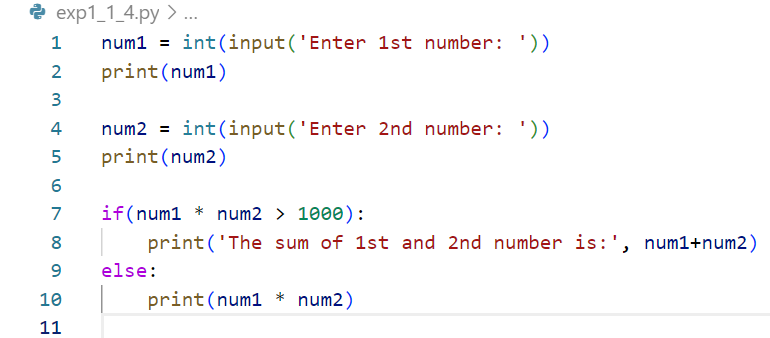


Output:

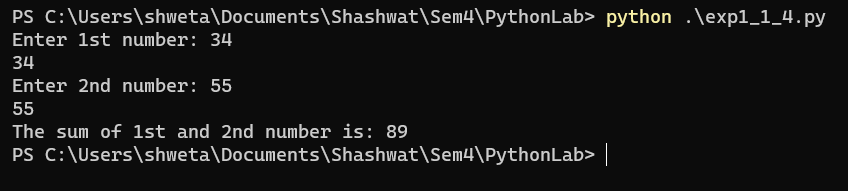


**ADDITION OF TWO NUMBERS**

Code:

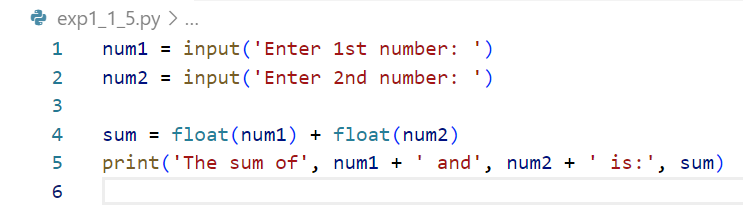


Output:

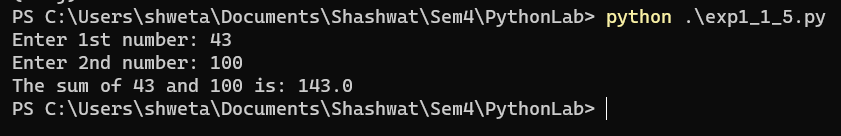


**DATA FROM USER**

Code:

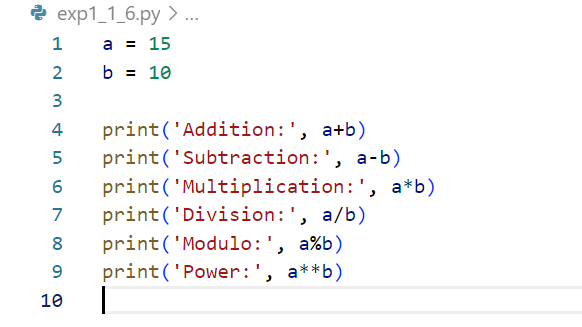


Output:

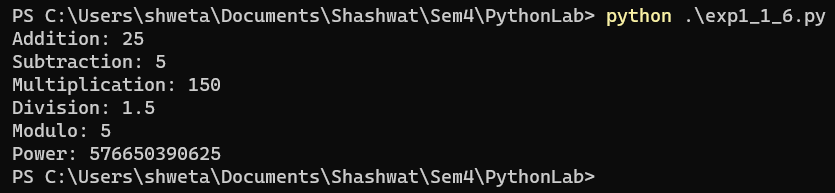


**ARITHMETIC OPERATORS**

Code:

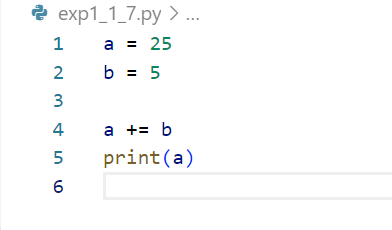


Output:

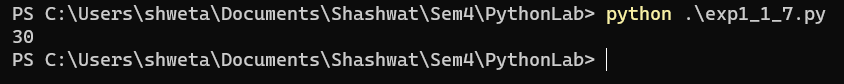


**ASSIGNMENT OPERATORS**

Code:

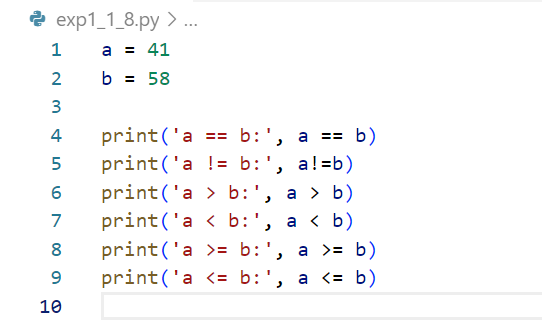


Output:

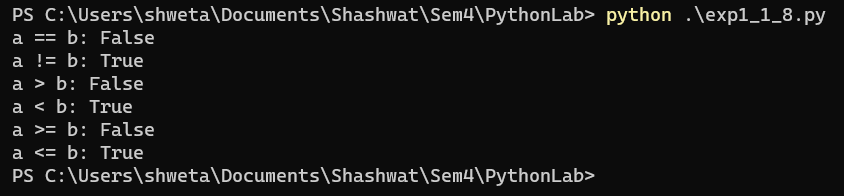


**COMPARISON OPERATORS**

Code:

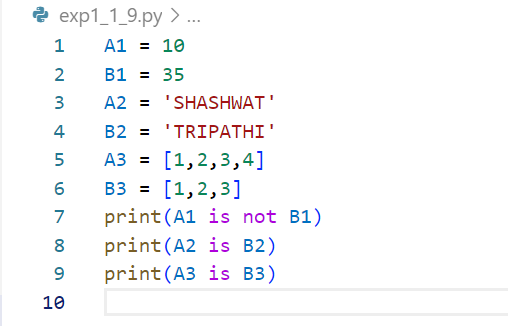


Output:

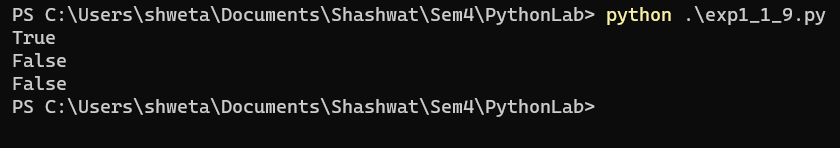


**IDENTITY OPERATOR**

Code:

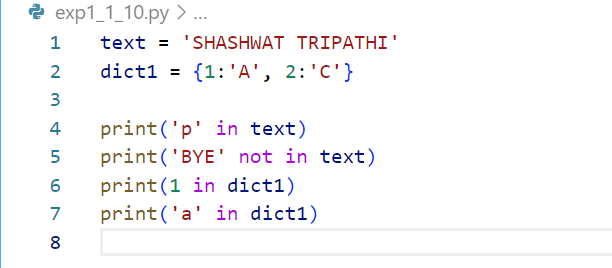


Output:

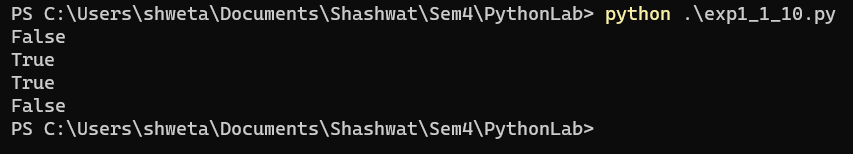


**MEMBERSHIP OPERATOR**

Code:



Output:



**Conclusion:** The concepts of basic data types, operators, expressions, conditional statements, looping in Python were studied and successfully implemented.

**Shashwat Tripathi**

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**PYTHON LAB**

**Exp No: 2**

**AIM:** Write python programs to understand

a) Different List and Tuple operations using Built-in functions

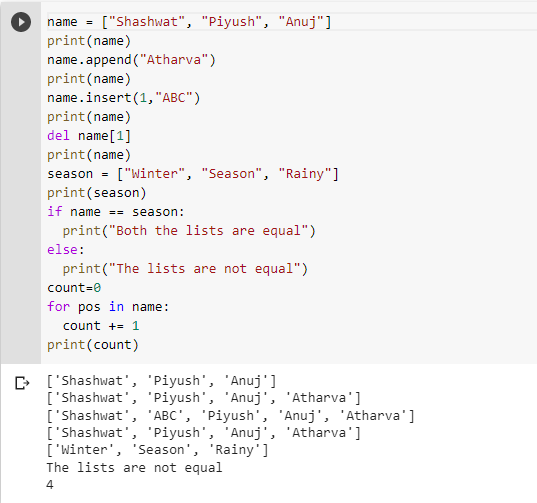
b) Built-in Set and String functions

c) Basic Array operations on 1-D and Multidimensional arrays using Numpy

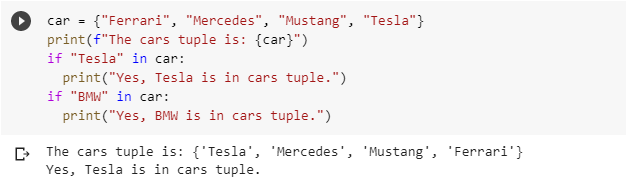
d) Implementing User defined and Anonymous Functions

**A) LIST, TUPLES, DICTIONARY**

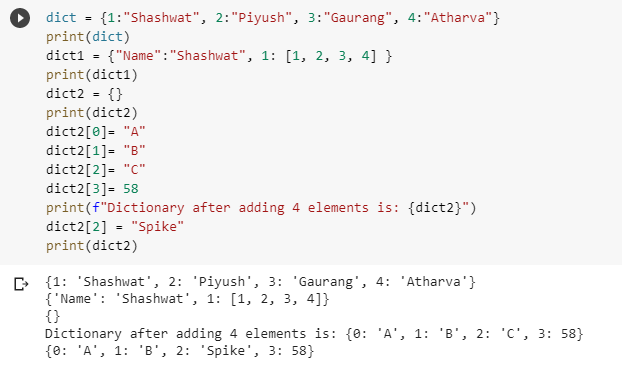
**LIST:**



**TUPLE**

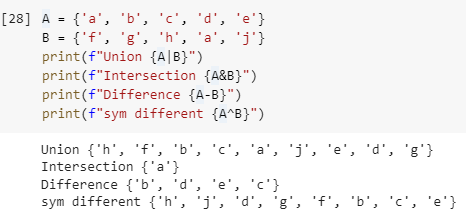
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**DICTIONARY**

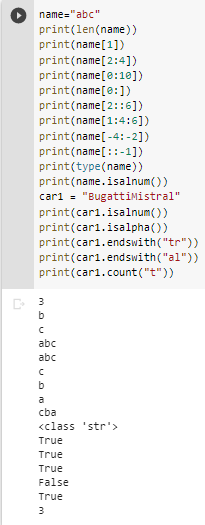
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**B) BUILT-IN SET AND STRING FUNCTIONS**

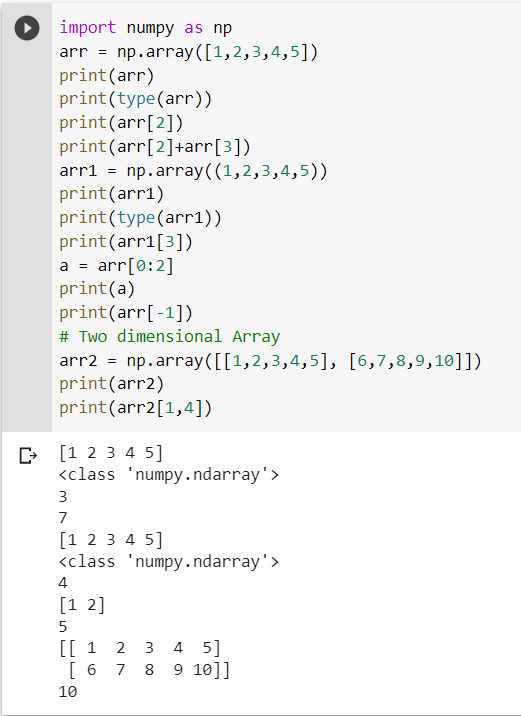
**SETS:-**

****

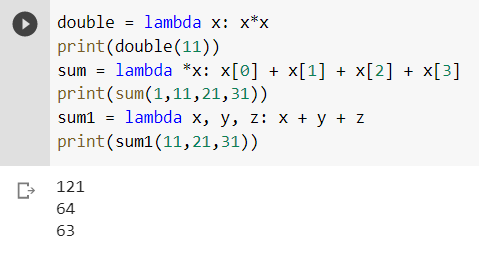
**STRING FUNCTIONS:-**

****

**C) BASIC ARRAY OPERATIONS ON 1-D AND MULTIDIMENSIONAL ARRAYS USING NUMPY**

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**D) IMPLEMENTING USER DEFINED AND ANONYMOUS FUNCTIONS**

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**Conclusion:** Thus we have studied and executed different List and Tuple operations, built-in Set and String functions, basic Array operations on 1-D and Multidimensional arrays using Numpy, Implementing User defined and Anonymous Functions.

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**PYTHON LAB**

**Exp No: 3**

**AIM:** Write python programs to understand

A) Classes, Objects, Constructors, Inner class and Static method

B) Different types of Inheritance

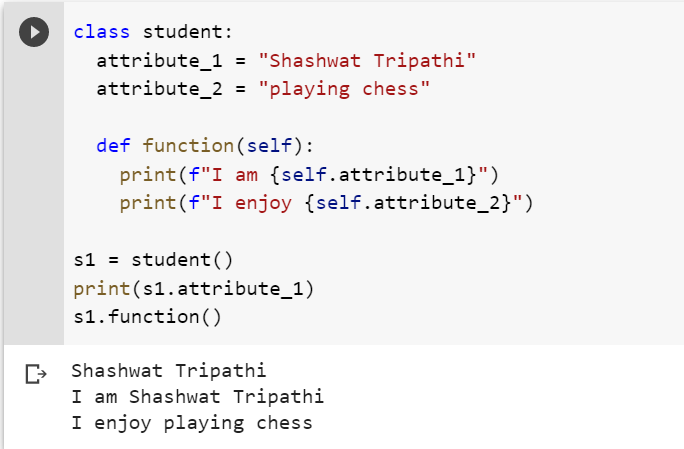
C) Polymorphism using Operator overloading, Method overloading, Method

overriding in Python.

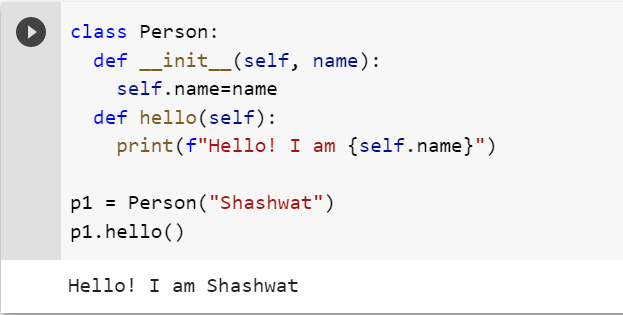
**A) CLASSES, OBJECTS, CONSTRUCTORS, INNER CLASS AND STATIC METHOD**

**CODE:**

**Class & Object**

****

**Constructor**

****

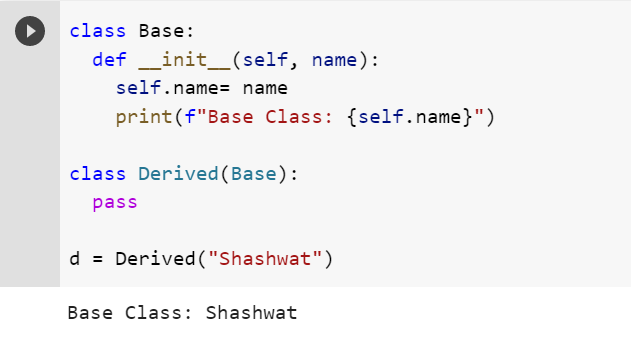
**INNER CLASS**

****

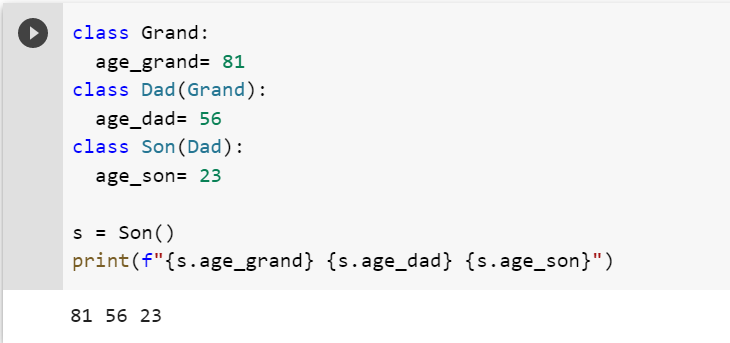
**B) DIFFERENT TYPES OF INHERITANCE**

**CODE:**

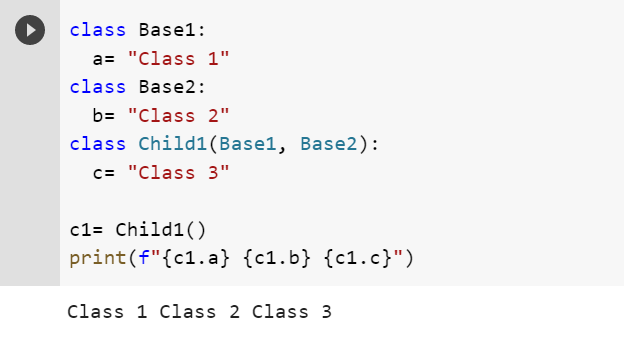
**SIMPLE INHERITANCE**

****

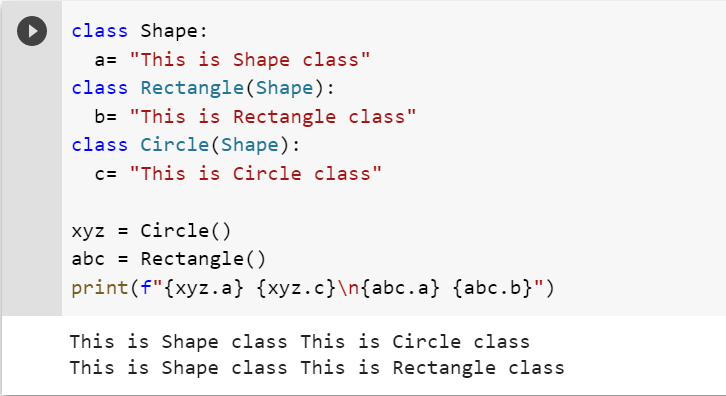
**MULTILEVEL**

****

**MULTIPLE**

****

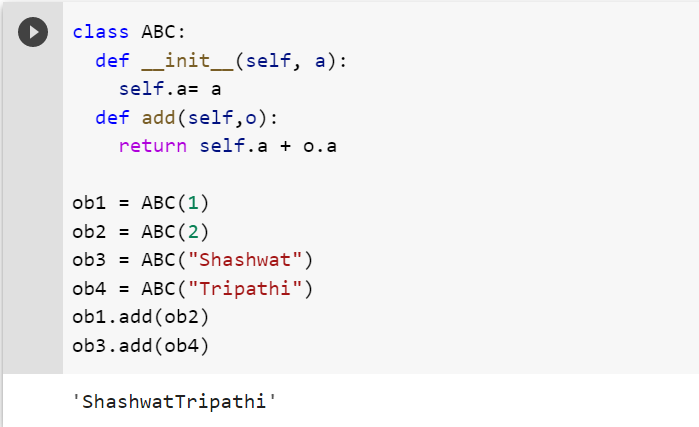
**HIERARCHICAL**

****

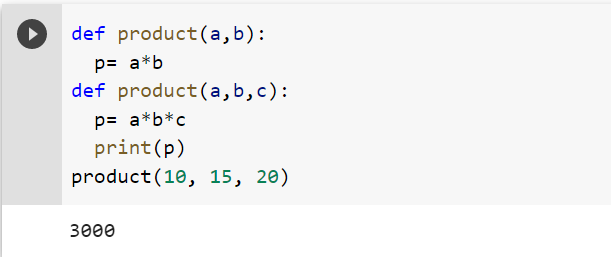
**C) POLYMORPHISM USING OPERATOR OVERLOADING,METHOD OVERLOADING,METHOD OVERRIDING,ABSTRACT CLASS,ABSTRACT METHOD AND INTERFACES**

**CODE:**

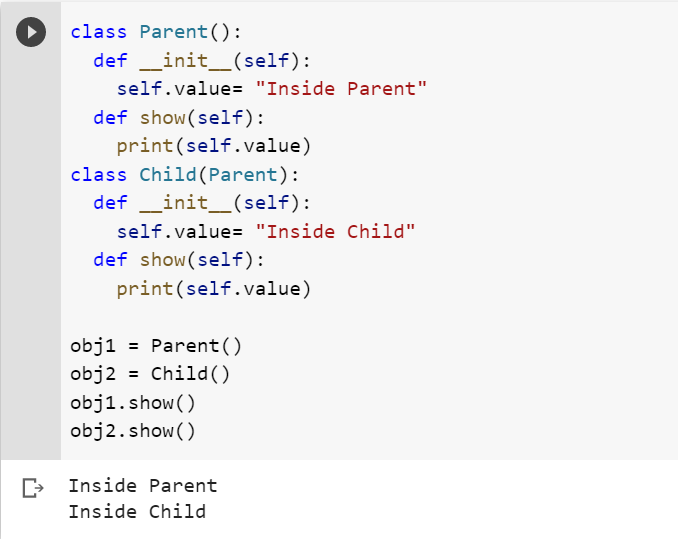
**OVERLOADING**

****

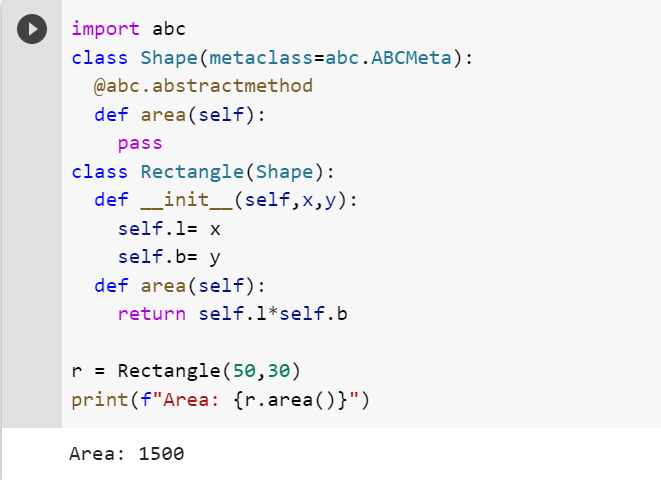
**METHOD OVERLOADING**

****

**METHOD OVERRIDING**

****

**ABSTRACT CLASS AND METHOD**

****

**INTERFACE**

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**Conclusion -** Concepts of object-oriented programming were learned and implemented.

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**PYTHON LAB**

**Exp No: 4**

**AIM:** Write python programs to understand

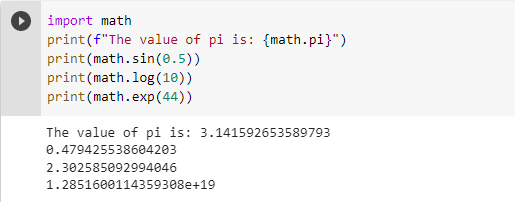
a) Creating User-defined modules/packages and import them in a program.

b) Python program to illustrate the concept of threading importing the threading module.

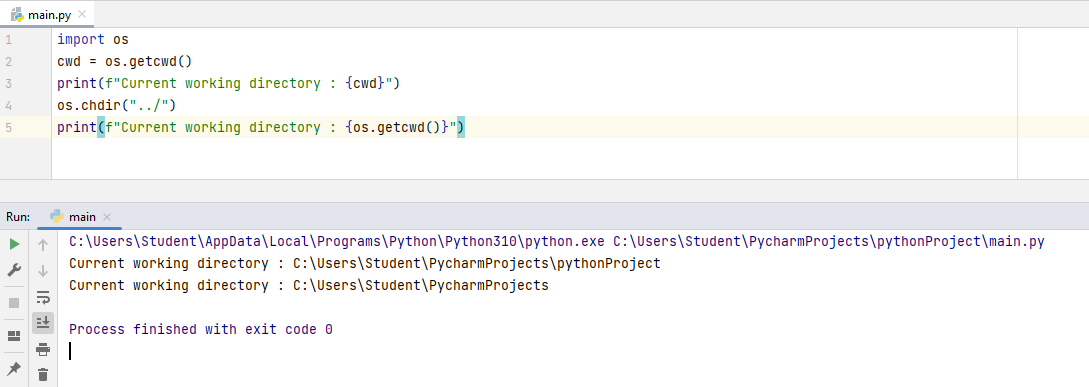
c) Creating a menu driven application which should cover all the built-in exceptions in python.

**CODE:**

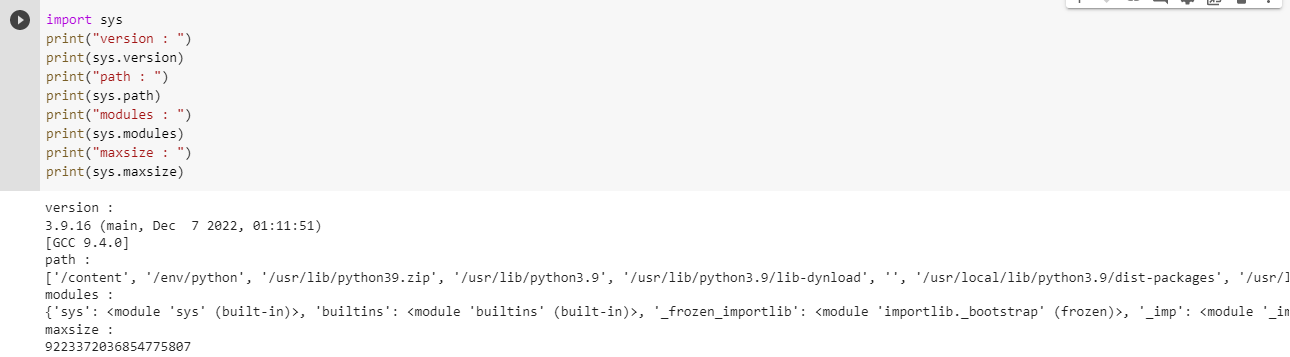
**Math Module**

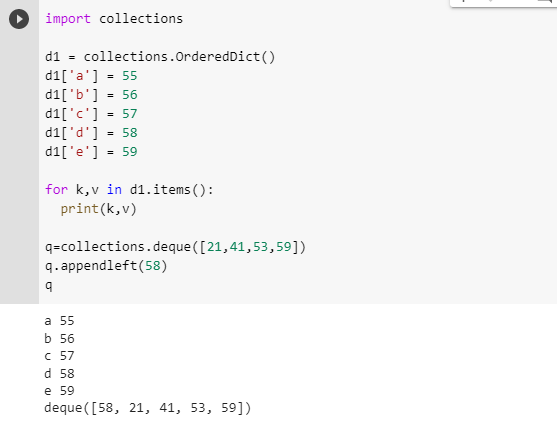


**OS Module**

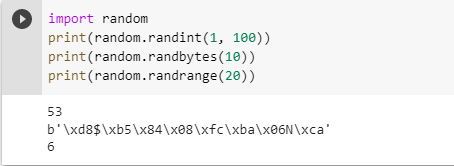


**SYS Module**

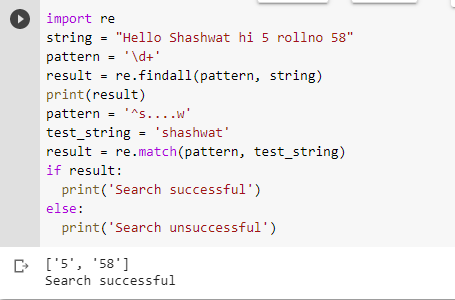
****

****

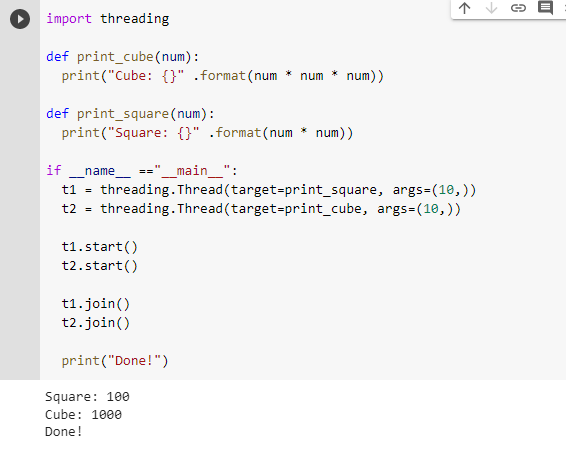
**Random Module**

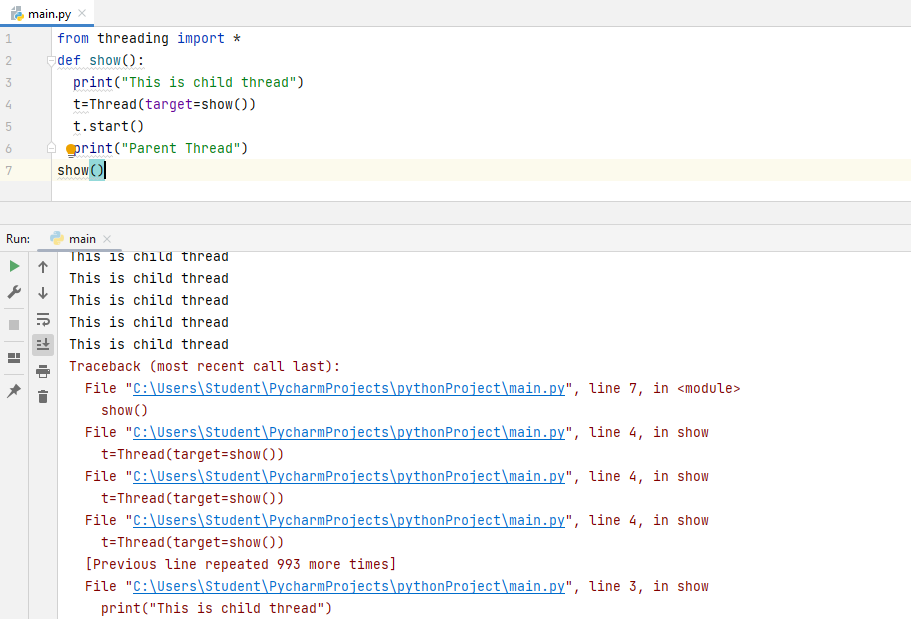
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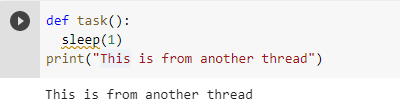
**Regular expression module**

****

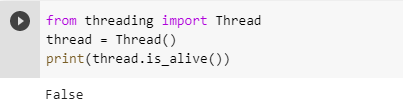
**Threading**

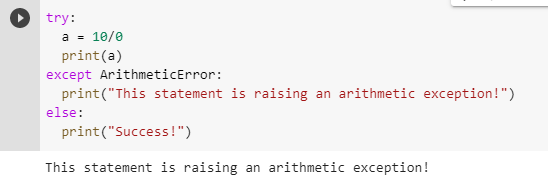
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**Conclusion:** Thus we have created User-defined modules/packages and imported them in our program.

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**BATCH: C**

**PYTHON LAB**

**Exp No: 5**

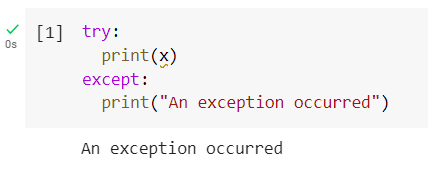
**AIM:** 1. Demonstrate a python code to print try, except and finally block statements.

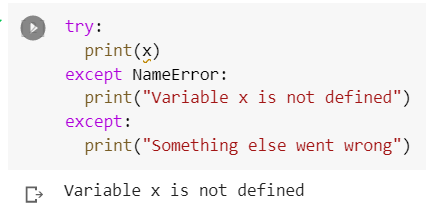
2. Demonstrate a python code to Compile time errors.

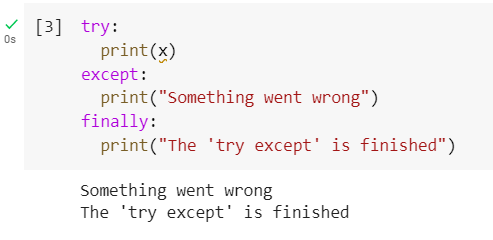
3. Demonstrate a python code to Run time errors.

**CODE:**

1. **Try,Except,Finally**

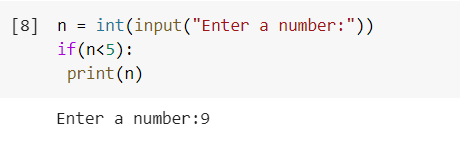
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****

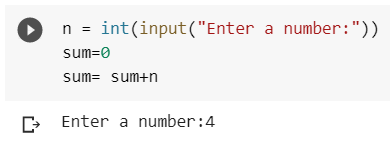
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1. **Compile Time Errors**

Syntax Errors-

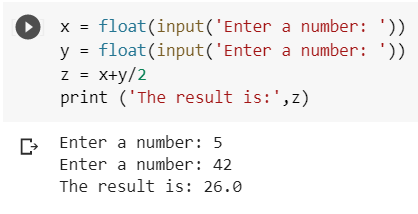
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Semantics Errors-

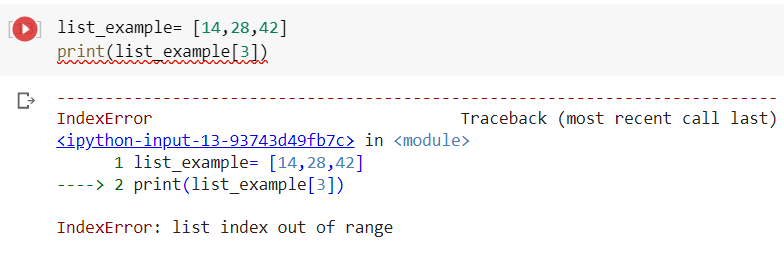


1. **Runtime Errors**

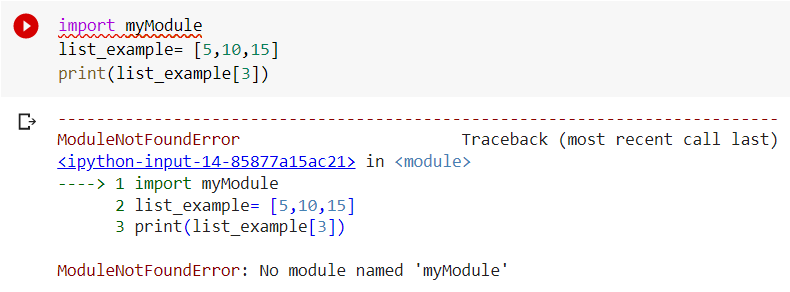
Logical error-



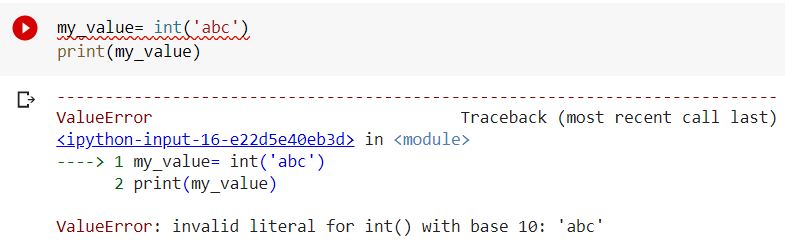
Index error-



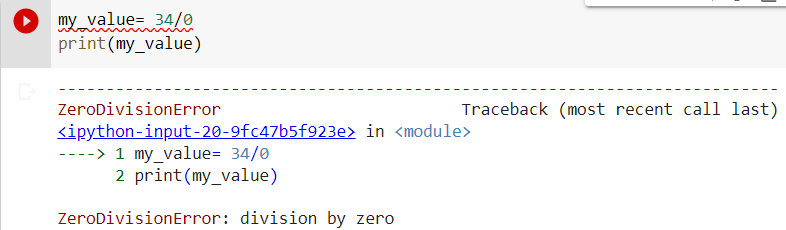
Module error-



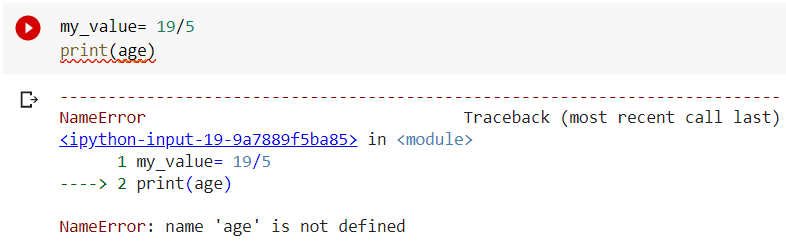
Value error-

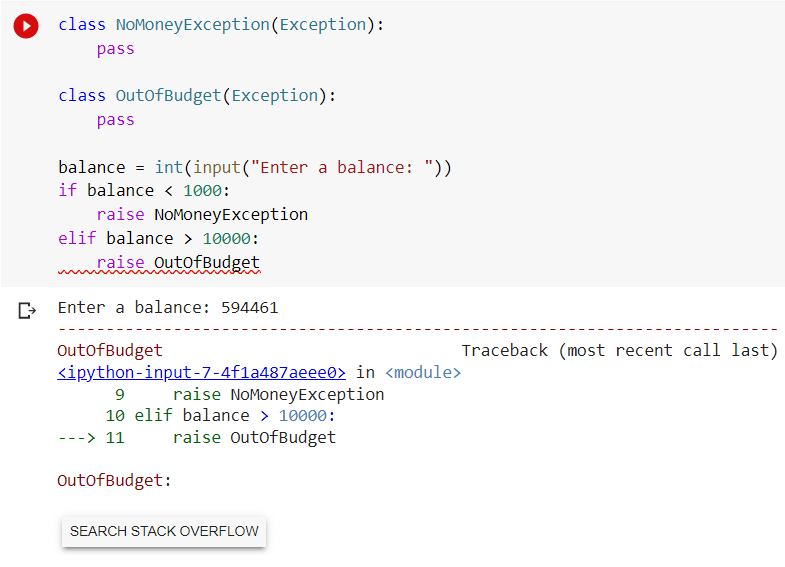


Divide by zero-



Name error-



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**Conclusion:** Thus the concepts of exception handling and errors were studied and implemented.