

## **PYTHON PROGRAMMING LAB**



**Prepared by:**

Name of Student: \_\_\_Shikha singh\_\_\_\_\_

Roll No: \_\_\_25\_\_\_\_\_

Batch: 2023-27

### **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

<b>Ex p. No</b>	<b>List of Experiment</b>
1	1.1 Write a program to compute Simple Interest.

	1.2 Write a program to perform arithmetic, Relational operators.
	1.3 Write a program to find whether a given no is even & odd.
	1.4 Write a program to print first n natural number & their sum.
	1.5 Write a program to determine whether the character entered is a Vowel or not .
	1.6 Write a program to find whether given number is an Armstrong Number.
	1.7 Write a program using for loop to calculate factorial of a No.
	1.8 Write a program to print the following pattern
	i) *  * *  * * *  * * * *  * * * * *
	ii) 1 2 2 3 3 3 4 4 4 4 5 5 5 5 5
	iii) *  * * *  * * * * *  * * * * * * *  * * * * * * * *

2	2.1 Write a program that define the list of defines the list of define countries that are in BRICS.
	2.2 Write a program to traverse a list in reverse order. 1.By using Reverse method. 2.By using slicing
	2.3 Write a program that scans the email address and forms a tuple of username and domain.
	2.4 Write a program to create a list of tuples from given list having number and add its cube in tuple. i/p: c= [2,3,4,5,6,7,8,9]
	2.5 Write a program to compare two dictionaries in Python? (By using == operator)
	2.6 Write a program that creates dictionary of cube of odd numbers in the range.
	2.7 Write a program for various list slicing operation.  a= [10,20,30,40,50,60,70,80,90,100]  i. Print Complete list ii. Print 4th element of list iii. Print list from 0th to 4th index. iv. Print list -7th to 3rd element v. Appending an element to list. vi. Sorting the element of list. vii. Popping an element. viii. Removing Specified element. ix. Entering an element at specified index. x. Counting the occurrence of a specified element. xi. Extending list. xii. Reversing the list.
3	3.1 Write a program to extend a list in python by using given approach. i. By using + operator. ii. By using Append () iii. By using extend ()

	3.2 Write a program to add two matrices.
	3.3 Write a Python function that takes a list and returns a new list with distinct elements from the first list.
	3.4 Write a program to Check whether a number is perfect or not.
	3.5 Write a Python function that accepts a string and counts the number of upper and lower-case letters. string_test= 'Today is My Best Day'
4	4.1 Write a program to Create Employee Class & add methods to get employee details & print.
	4.2 Write a program to take input as name, email & age from user using combination of keywords argument and positional arguments (*args and **kwargs) using function,
	4.3 Write a program to admit the students in the different Departments(pgdm/btech)and count the students. (Class, Object and Constructor).
	4.4 Write a program that has a class store which keeps the record of code and price of product display the menu of all product and prompt to enter the quantity of each item required and finally generate the bill and display the total amount.
	4.5 Write a program to take input from user for addition of two numbers using (single inheritance).
	4.6 Write a program to create two base classes LU and ITM and one derived class. (Multiple inheritance).
	4.7 Write a program to implement Multilevel inheritance, Grandfather → Father- → Child to show property inheritance from grandfather to child.

	4.8 Write a program Design the Library catalogue system using inheritance take base class (library item) and derived class (Book, DVD & Journal) Each derived class should have unique attribute and methods and system should support Check in and check out the system. (Using Inheritance and Method overriding)
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5	5.1 Write a program to create my_module for addition of two numbers and import it in main script.
	5.2 Write a program to create the Bank Module to perform the operations such as Check the Balance, withdraw and deposit the money in bank account and import the module in main file.
	5.3 Write a program to create a package with name cars and add different modules (such as BMW, AUDI, NISSAN) having classes and functionality and import them in main file cars.
6	6.1 Write a program to implement Multithreading. Printing “Hello” with one thread & printing “Hi” with another thread.
7.	7.1 Write a program to use ‘whether API’ and print temperature of any city, also print the sunrise and sunset times for the same humidity of that area.
	7.2 Write a program to use the ‘API’ of crypto currency.

**Name of Student:** Shikha  
singh\_\_\_\_\_

**Roll Number:** \_\_\_\_25\_\_\_\_\_

**Experiment No: 1.1**

**Title:** Write a program to compute Simple Interest.

**Theory:**

We will first declare three variables, P, R and T. These variable stores principal amount,

interest rate and time for lending, respectively. Then, interest is calculated using the formula  $\text{Interest} = (P \cdot R \cdot T) / 100$ . The interest is printed using the printf function.

**Code:** `def simpleinterest(principal, rate, time):`

```
    simpleinterest = (principal * rate * time) / 100
```

```
    return simpleinterest
```

```
principalamount = float(input("Enter the principal amount: "))
```

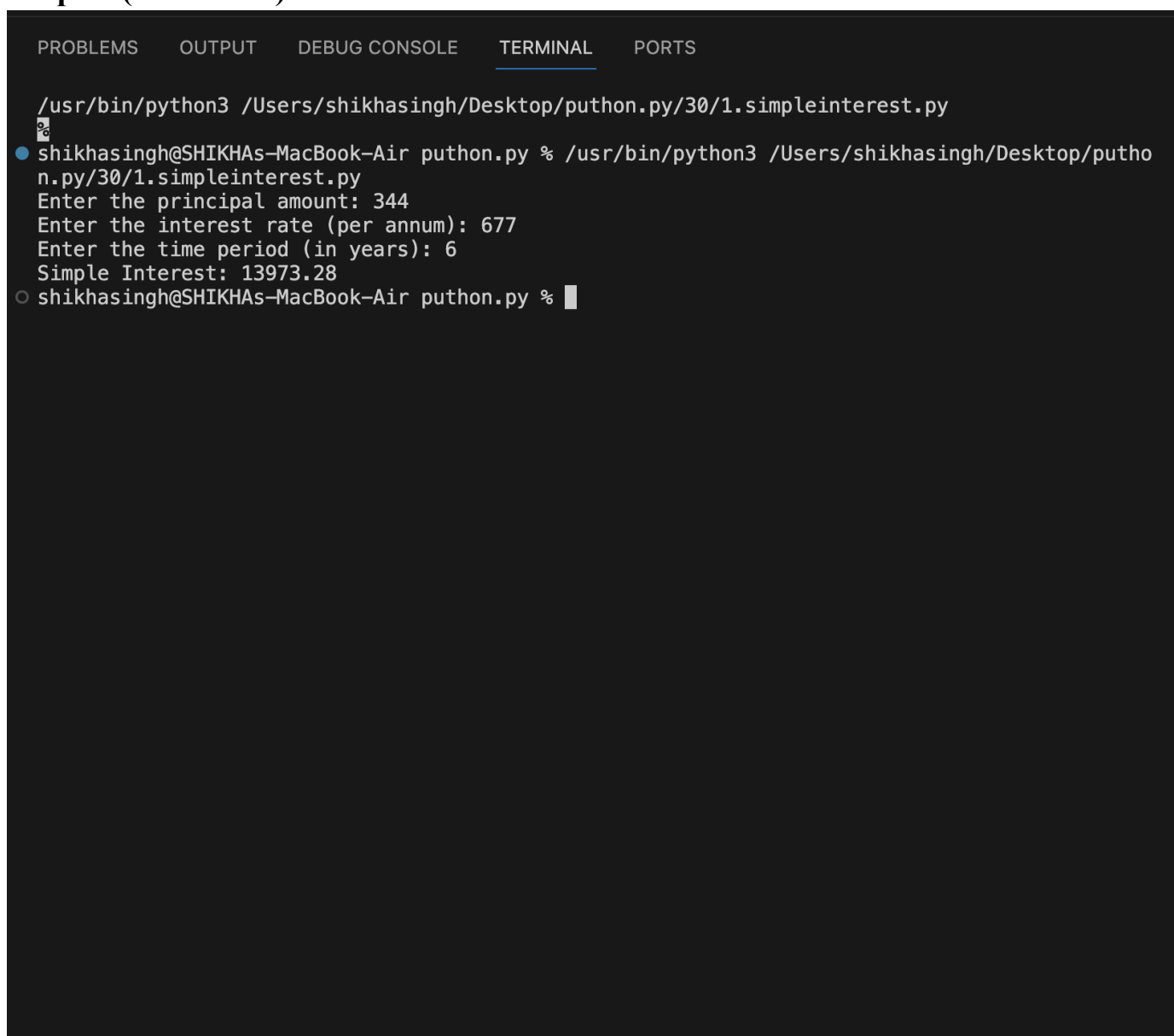
```
interestrate = float(input("Enter the interest rate (per annum): "))
```

```
timeperiod = float(input("Enter the time period (in years): "))
```

```
result = simpleinterest(principalamount, interestrate, timeperiod)
```

```
print("Simple Interest:", result)
```

## Output: (screenshot)

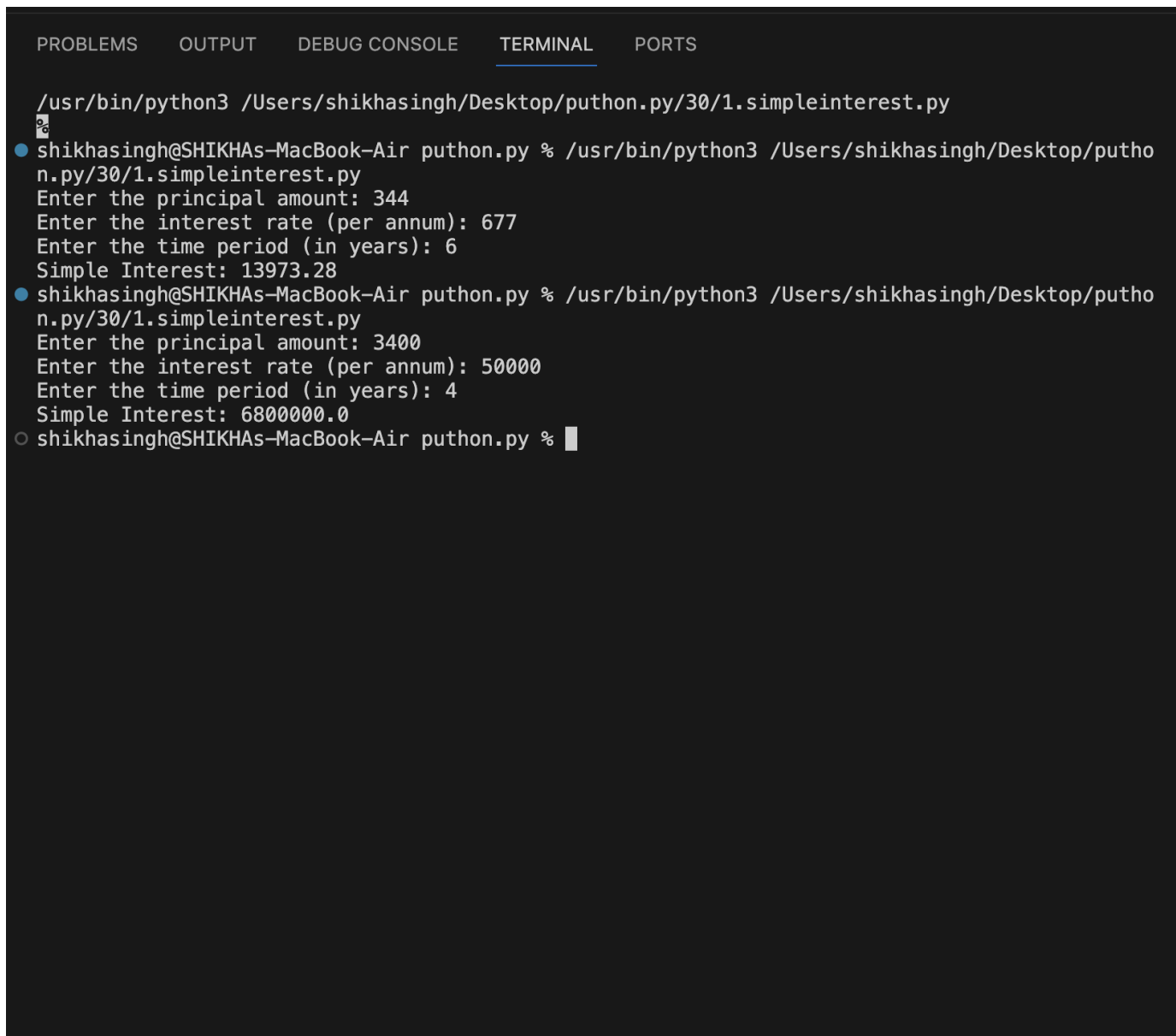


The screenshot shows a code editor with a dark theme. At the top, there is a tab bar with five tabs: "PROBLEMS", "OUTPUT", "DEBUG CONSOLE", "TERMINAL" (which is selected and underlined), and "PORTS". Below the tabs, the terminal window displays the following text:

```
/usr/bin/python3 /Users/shikhasingh/Desktop/puthon.py/30/1.simpleinterest.py
shikhasingh@SHIKHAS-MacBook-Air puthon.py % /usr/bin/python3 /Users/shikhasingh/Desktop/puthon.py/30/1.simpleinterest.py
Enter the principal amount: 344
Enter the interest rate (per annum): 677
Enter the time period (in years): 6
Simple Interest: 13973.28
shikhasingh@SHIKHAS-MacBook-Air puthon.py %
```



**Test Case: Any two (screenshot)**



The screenshot shows a terminal window with a dark background and light-colored text. At the top, there are tabs labeled 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', 'TERMINAL' (which is selected and underlined), and 'PORTS'. Below the tabs, the terminal displays the command `/usr/bin/python3 /Users/shikhasingh/Desktop/puthon.py/30/1.simpleinterest.py` followed by a cursor. Two test cases are shown, each preceded by a blue bullet point. The first test case shows the user entering '344' for the principal amount, '677' for the interest rate, and '6' for the time period, resulting in a 'Simple Interest' of '13973.28'. The second test case shows the user entering '3400' for the principal amount, '50000' for the interest rate, and '4' for the time period, resulting in a 'Simple Interest' of '6800000.0'. The terminal ends with a prompt `shikhasingh@SHIKHAS-MacBook-Air puthon.py %` and a cursor.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

/usr/bin/python3 /Users/shikhasingh/Desktop/puthon.py/30/1.simpleinterest.py
%
● shikhasingh@SHIKHAS-MacBook-Air puthon.py % /usr/bin/python3 /Users/shikhasingh/Desktop/puthon.py/30/1.simpleinterest.py
Enter the principal amount: 344
Enter the interest rate (per annum): 677
Enter the time period (in years): 6
Simple Interest: 13973.28
● shikhasingh@SHIKHAS-MacBook-Air puthon.py % /usr/bin/python3 /Users/shikhasingh/Desktop/puthon.py/30/1.simpleinterest.py
Enter the principal amount: 3400
Enter the interest rate (per annum): 50000
Enter the time period (in years): 4
Simple Interest: 6800000.0
○ shikhasingh@SHIKHAS-MacBook-Air puthon.py % █
```

**Conclusion:** Money lending and

Interest is an old phenomenon in

human history. We can calculate

simple interest using the formula

$I = (P \cdot R \cdot T) / 100$ . When

programming in python, we must

store variables in the appropriate

data type, i.e. float.