RAJALAKSHMI ENGINEERING COLLEGE

RAJALAKSHMI NAGAR, THANDALAM – 602 105

RAJALAKSHMI
ENGINEERING COLLEGE

CS23221
PYTHON PROGRAMMING LAB

Laboratory Observation Note Book

Name : THARUN RAJ I

Year / Branch / Section : 1st/CSE/F

Register No. : 230701362

Semester : 2nd

Academic Year : 2023-24

INDEX

Reg. No. : 230701362 Name : THARUN RAJ I

Year : 1st Branch : CSE Sec : F

S. No.	Date	Title	Page No.	Teacher's Signature / Remarks
Introduction to python-Variables-Datatypes-Input/Output-Formatting				
1.1		Converting Input Strings		
1.2		Gross salary		
1.3		Square Root		
1.4		Gain percent		
1.5		Deposits		
1.6		Carpenter		
Operators in Python				
2.1		Widgets and Gizmos		
2.2		Doll Sings		
2.3		Birthday party		
2.4		Hamming Weight		
2.5		Compound Interest		

2.6		Eligible to donate blood		
2.7		C or D		
2.8		Troy Battle		
2.9		Tax and Tip		
2.10		Return last digit of the given number		
Selection Structures in Python				
3.1		Admission eligibility		
3.2		Classifying triangles		
3.3		Electricity Bill		
3.4		IN/OUT		
3.5		Vowel or Constant		
3.6		Leap Year		
3.7		Month name to Days		
3.8		Pythagorean triple		
3.9		Second Last Digit		
3.10		Chinese Zodiac		
Algorithmic Approach: Iteration Control Structures				
4.1		Factors of a Number		
4.2		Non-Repeated Digits Count		
4.3		Prime Checking		
4.4		Next Perfect Square		
4.5		Nth Fibonacci		
4.6		Disarium Number		
4.7		Sum of Series		
4.8		Unique Digits Count		
4.9		Product of single digits		
4.10		Perfect Square After adding One		
Strings in Python				

5.1		Count chars		
5.2		Decompress the String		
5.3		First N Common Characters		
5.4		Remove Characters		
5.5		Remove Palindrome Words		
5.6		Return Second Word in Uppercase		
5.7		Reverse String		
5.8		String characters balance Test		
5.9		Words of Minimum length		
5.10		Find if substring		
List in Python				
6.1		Monotonic array		
6.2		Check pair with difference k .		
6.3		Count Elements		
6.4		Distinct Elements in an Array		
6.5		Element Insertion		
6.6		Position in Domain		
6.7		Intersection Of sorted Arrays		
6.8		Merge Two Sorted Arrays Without Duplication		
6.9		Print Element Location		
6.10		Strictly increasing		
Tuples & Set				
7.1		Binary String		
7.2		Print repeated no		
7.3		Remove repeated		
7.4		malfunctioning keyboard		

7.5		American keyboard		
Dictionary				
8.1		Uncommon Words		
8.2		Sort Dictionary By Values Summation		
8.3		Winner Of Election		
8.4		Student Record		
8.5		Scramble Score		
Functions				
9.1		Automorphic number or not		
9.2		Check Product of Digits		
9.3		Coin Change		
9.4		Difference Sum		
9.5		Ugly number		
Searching & Sorting				
10.1		Merge Sort		
10.2		Bubble Sort		
10.3		Peak Element		

10.4		Bubble Sort(sorted array display)		
10.5		Frequency of Numbers		

01 - Introduction to Python-Variables-Datatypes

Input/Output-Formatting

Ex. No. : 1.1 **Date:**

Register No.: 230701362 **Name: Tharunraj I**

Converting Input Strings

Write a program to convert strings to an integer and float and display its type.

Sample Input:

10

10.9

Sample Output:

10,<class 'int'>

10.9,<class 'float'>

For example:

Input	Result
10 10.9	10,<class 'int'> 10.9,<class 'float'>

CODE:

```
a=int(input())

print(a,type(a),sep=",")

b=float(input())

print(round(b,1),type(b),sep=","
```

Ex. No. : 1.2 **Date:**

Register No.: 230701362 **Name: Tharunraj I**

Gross Salary

Ramesh's basic salary is input through the keyboard. His dearness allowance is 40% of his basic salary, and his house rent allowance is 20% of his basic salary. Write a program to calculate his gross salary.

Sample Input:

10000

Sample Output:

16000

For example:

Input	Result
10000	16000

CODE:

```
sal=int(input())
gross=(40/100*sal)+(20/100*sal)+sal
print(round(gross))
```

Ex. No. : 1.3 **Date:**

Register No.: 230701362 **Name: Tharunraj I**

Square Root

Write a simple python program to find the square root of a given floating point number. The output should be displayed with 3 decimal places.

Sample Input:

8.00

Sample Output:

2.828

For example:

Input	Result
14.00	3.742

CODE:

```
import math
n=float(input())
print("%.3f"%math.sqrt(n))
```

Ex. No. : 1.4 **Date:**

Register No.: 230701362 **Name: Tharunraj I**

Gain percent

Alfred buys an old scooter for Rs. X and spends Rs. Y on its repairs. If he sells the scooter for Rs. Z (Z>X+Y). Write a program to help Alfred to find his gain percent. Get all the above-mentioned values through the keyboard and find the gain percent.

Input Format:

The first line contains the Rs X

The second line contains Rs Y

The third line contains Rs Z

Sample Input:

10000

250

15000

Sample Output:

46.34 is the gain percent.

For example:

Input	Result
45500 500 60000	30.43 is the gain percent.

CODE:

```
a=int(input())
b=int(input())
c=int(input())
gain=c-(a+b)
gp=(gain/(a+b))*100
print("%.2f is the gain percent."%(gp))
```

Ex. No. : 1.5 **Date:**

Register No.: 230701362 **Name:THARUN RAJ**

Deposits

In many jurisdictions, a small deposit is added to drink containers to encourage people to recycle them. In one particular jurisdiction, drink containers holding one liter or less have a $0.10 deposit and drink containers holding more than one liter have a $0.25 deposit. Write a program that reads the number of containers of each size(less and more) from the user. Your program should continue by computing and displaying the refund that will be received for returning those containers. Format the output so that it includes a dollar sign and always displays exactly two decimal places.

Sample Input

10

20

Sample Output

Your total refund will be $6.00.

For example:

Input	Result
20 20	Your total refund will be $7.00.

CODE:

```
a=int(input())
b=int(input())
```

```
print("Your total refund will be $%.2f."%((a*0.10)+(b*0.25)))
```

Ex. No. : 1.6 **Date:**

Register No.:230701362 **Name:THARUN RAJ I**

Carpenter

Justin is a carpenter who works on an hourly basis. He works in a company where he is paid Rs 50 for an hour on weekdays and Rs 80 for an hour on weekends. He works 10 hrs more on weekdays than weekends. If the salary paid for him is given, write a program to find the number of hours he has worked on weekdays and weekends.

Hint:

If the final result(hrs) are in -ve convert that to +ve using abs() function

The abs() function returns the absolute value of the given number.

```
number = -20
absolute_number = abs(number)
print(absolute_number)
# Output: 20
```

Sample Input:

450

Sample Output:

weekdays 10.38

weekend 0.38

For example:

Input	Result
450	weekdays 10.38 weekend 0.38

CODE:

```
n=int(input())
we=(n-500)/130
print("weekdays %.2f"%(abs(we)+10))
print("weekend %.2f"%(abs(we)))
```