IARE

INSTITUTE OF AERONAUTICAL ENGINEERING

(An Autonomous Institute affiliated to JNTUH, Hyderabad)

Dundigal, Hyderabad - 500 043

# LABORATORY WORK BOOK

Name of the Student: HIMAKAR C

Roll Number: 2 1 9 5 1 A 0 5 6 5

Class: CSE-B Semester: VI

Course Code: ACIC09 Course Name: SQAT laboratory

Name of the Course Faculty: Mr. Suresh Babu Faculty ID: IARE 10996

Exercise Number: Week Number: 04 Date: 18/4/24

| S. No. | Exercise Number | EXERCISE NAME | MARKS AWARDED | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Aim/ Preparation | Algorithm / Procedure / Performance in the Lab | | Source Code / Calculations and Graphs | Program Execution / Results and Error Analysis | Viva - Voce | Total |
| | | | 4 | 4 | | 4 | 4 | 4 | 20 |
| 1 | 4.1 | Triangle Problem | 4 | | 4 | 4 | 4 | 4 | 20 |
| 2 | 4.2 | Next Date Program | | | | | | | |
| 3 | 4.3 | Commission Problem | | | | | | | |
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Signature of the Student

Signature of the Faculty

4-1 Triangle problem

Design and develop a program in any language to solve triangle problem. Determine if three values represent an equilateral triangle, isosceles (or) scalene triangle or they do not form at all. Assume upper limit for size of side is 10.

```
a, b, c = map(int, input('Enter three sides: ').split())
if a < 11 and b < 11 and c < 11:
    if a+b > c or b+c > a or a+c > b:
        if a != b and b != c and c != a:
            print('Scalene Triangle')
        elif a == b == c:
            print('Equilateral Triangle')
        else:
            print('Isoceles Triangle')
    else:
        print('Triangle can\'t be formed')
else:
    print('Side limit exceeded')
```

Test case - 1: All sides are equal

Enter three sides: 1 1 1

Equilateral Triangle

Test case - 2: Two sides are equal

Enter three sides: 1 1 2

Isosceles Triangle

Test case - 3: No side is equal

Enter three sides: 1 2 3

Scalene Triangle

Test case - 4: Side is greater than 10

Enter three sides : 11 1 1

Side limit exceeded

Test Report

| case Id | Description | Input Data | | | Expected Output | Actual Output | Comments |
|---|---|---|---|---|---|---|---|
| | | a | b | c | | | |
| 1 | All sides are Equal | 1 | 1 | 1 | Equilateral Triangle | Equilateral Triangle | Success |
| 2 | Two sides are equal | 1 | 1 | 2 | Isosceles Triangle | Isosceles Triangle | Success |
| 3 | No side is equal | 1 | 2 | 3 | Scalene Triangle | Scalene Triangle | Success |
| 4 | Side is greater than 10 | 11 | 1 | 1 | Side limit exceeded | Side limit exceeded | Success |

ROLL NUMBER

4.2 Next Date program

Design, develop, code & run program in language to implement the Next Date function.

```
from datetime import datetime, timedelta
d = int(input('Enter today date: '))
m = int(input('Enter month in value: '))
y = int(input('Enter year: '))
d = datetime(y, m, d)
print('Next Date is: ', d + timedelta(1))
```

INPUT/OUTPUT:

```
Enter today date: 15
Enter month in value: 04
Enter year: 2024
Next Date is: 2024-04-16
```

Test Report

| case ID | Description | Input Data | | | Expected Output | Actual Output | Comments |
|---|---|---|---|---|---|---|---|
| | | a | b | c | | | |
| 1 | Today's Date | 15 | 04 | 2024 | 2024-04-16 | 2024-04-16 | Successful |
| 2 | Random Date | 12 | 12 | 2012 | 2012-12-13 | 2012-12-13 | Successful |
| 3 | Year's last Date | 31 | 12 | 2012 | 2013-01-01 | 2013-01-01 | Successful |

ROLL NUMBER :

4.3 Commission problem

Design, Develop, code and run the program in any suitable language to solve the commission Problem.

```
c = 0
l = int(input('Enter total no.of locks: '))
s = int(input('Enter total no.of stocks: '))
b = int(input('Enter total no.of barrels: '))
if l <= 0 or s <= 0 or b <= 0 or l > 70
    or s > 80 or b > 90:
    print ('Invalid Input')
else:
    tS = (l * 45) + (s * 30) + (b * 25)
    if ts <= 1000:
        c = 0.1 * tS
    elif ts < 1800:
        c = 100 + (0.15 * (tS - 1000))
    else:
        c = 220 + (0.2 * (tS - 1800))
    print (f'The total sales is {tS} and
            The commission is {c}')
```

ROLL NUMBER :

INPUT/OUTPUT:

Enter total no.of locks: 8
Enter total no.of stocks: 25
Enter total no.of barrels: 65
The total sales is 2735 and
The commission is 407.0

Test case for Invalid Input:

Enter total no.of locks: 2
Enter total no.of stocks: 25
Enter total no.of barrels: 3356
Invalid Input

Test Report:

| Case ID | Description | Input Data | | | Expected output | Actual Output | Comments |
|---|---|---|---|---|---|---|---|
| | | a | b | c | | | |
| 1 | valid Testcase | 8 | 25 | 65 | Total sales is 2735 and commission is 407.0 | Total sales is 2735 and commission is 407.0 | Successful |
| 2 | Invalid Testcase | 2 | 25 | 3356 | Invalid Input | Invalid Input | Successful |
| 3 | All eavual values Testcase | 25 | 25 | 25 | Total sales is 2500 and commission is 360.0 | Total Sales is 2500 and commission is 360.0 | Successful |