National University of Computer and Emerging Sciences

Lab Manual

for

Programming Fundamentals

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Problem 1:

Creates a small phone book. An array is used to store a list of names and another array is used to store the phone numbers that go with each name. For example, Michael Myers' phone number is 333-8000 and Ash Williams' phone number is 333-2323. Write the function lookupName so the code properly looks up and display the phone number for the input target name.

Problem 2:

A local zoo wants to keep track of how many pounds of food each of its three monkeys eats each day during a typical week. Write a program that stores this information in a two dimensional 3x5 array, where each row represents a different monkey and each column represents a different day of the week. The program should first have the user input the data for each monkey. Then it should create a report that includes the following information:

- Average amount of food eaten per day by the whole family of monkeys.
- The least amount of food eaten during the week by any one monkey.
- The greatest amount of food eaten during the week by any one monkey.

Input Validation: Do not accept negative numbers for pounds of food eaten.

Problem 3:

Write a program that ask user which operation you perform

1. Sum of two Matrices
2. Subtract of two Matrices
3. Multiplication of two matrices
4. Transpose of a matrix
5. Determinant of a 2 by 2 matrix.
6. Check square matrix
7. Calculate trace of a square matrix.

Note:

For each operation your make function, it takes matrices, rows and column of each matric as arguments. And also check input order of a matrix (i.e. number of rows and columns).

Problem 4:

An amateur meteorologist wants to keep track of weather conditions during the past year's three-month summer season and has designated each day as either rainy ('R'), cloudy ('C'), or sunny ('S'). Write a program that stores this information in a 3X30 array of characters, where the row indicates the month (0 = June, 1 = July, 2 = August) and the column indicates the day of the month. Note that data are not being collected for the 31st of any month.

It should create a report that displays, for each month and for the whole three-month period, how many days were rainy, how many were cloudy, and how many were sunny. It should also report which of the three months had the largest number of rainy days.