

National University of Computer and Emerging Sciences



Lab Manual
for
Object Oriented Programming

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| Section | OOP BSE-B |
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Lab Manual 1

Objectives:

After performing this lab, students shall be able to:

- ✓ Have an improved understanding of pointers.
- ✓ Declaring and Initializing pointers
- ✓ Pointer Operations

Problem 1

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: Write the following code and observe the output:

- 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 2

Write the following code and observe the output:

```
int a=1, b=3, c=5;
int * p;
int * q;
int * r;
p=& a;
q=& b;
r=& c;

cout<< a<<"\t"<<p<<"\t"<<*p<<"\t"<<&p<<"\t"<<&a<<endl;
cout<<b<<"\t"<<q<<"\t"<<*q<<"\t"<<&q<<"\t"<<&b<<endl;
cout<< c<<"\t"<<r<<"\t"<<*r<<"\t"<<&r<<"\t"<<&c<<endl;
```

Problem 3

Given two interger x and y (take input from user), write a C++ program that finds their sum, difference, product and square using pointers.

For Example:

Input:

Please enter first number: 3
Please enter second number: 2

Output:

Sum of numbers is: 5
Difference of numbers is: 1
Product of numbers is: 6
Square of numbers are: 9, 4

Problem 4

Write a C++ program that takes input height and width of rectangle and COMPUTE area using pointers.

Example Input:

Height : 12
Width : 3

Output:

Area: 36

Problem 5

Write a C++ program that finds and prints the mean of following three integers using pointer variables.

int a=10;

int b=15;

int c=12;

Problem 6

Write a C++ program that takes 3 numbers from user and print largest and smallest number using pointer variables.

Example Input:

Enter three numbers

Num1: 3

Num2: 1

Num3: 5

Output:

Num3 is largest number

Num2 is smallest number