DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

KATHMANDU UNIVERSITY

COMP 116: Object Oriented Programming

LAB SHEET

Submitted by

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Submitted to

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Date:

Sample:

Programming Set #1: Introduction (Chapter 1)

Theory: (Write short notes about important topics in the Chapter; for example, below is the short note about introduction to C++ programming from Chapter 1)

Object-oriented programming (OOP) is a programming paradigm based upon objects (having both data and methods) that aims to incorporate the advantages of modularity and reusability. Objects, which are usually instances of classes, are used to interact with one another to design applications and computer programs.

The important features of object–oriented programming are:

- Bottom–up approach in program design
- Programs organized around objects, grouped in classes
- Focus on data with methods to operate upon object's data
- Interaction between objects through functions
- Reusability of design through creation of new classes by adding features to existing classes

Some examples of object-oriented programming languages are C++, Java, Smalltalk, Delphi, C#, Perl, Python, Ruby, and PHP…

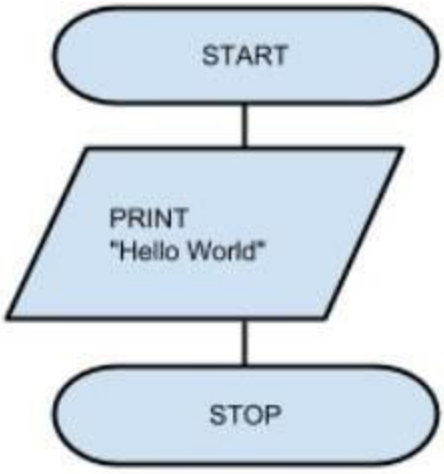
(Add more in your own words)

1. A Sample C++ program.

Algorithm:

1. START
2. PRINT "Hello World"
3. STOP

Flowchart:



Source Code:

```
#include<iostream>
using namespace std;
int main()
{
    // cout<< displays the string inside quotation
    cout<<"Hello, World!";
    return 0;
}
```

Input /

Output:

Input: No

Output:
"Hello World"

LAB WORK QUESTIONS

Programming Set #1: Introduction

1. Write a C++ program that reads three coefficients a, b and c for quadratic equation and finds whether the solutions are in real or imaginary.
   Hints: (ax2 + bx + c = 0 if b2-4ac >=0 then the solutions are real.)

2. Write a C++ program that reads ten positive numbers from user and finally prints the largest of all. (Use for loop, if condition and function.)

3. Write a C++ program to create student class, read and print N number of students details (Using array and array of objects)

Assignment Set #1

1. What do you mean by function? Illustrate the difference between pass by value and pass by reference.
2. Define Structure. How does it differ with Union? Illustrate with an example.
3. What is the difference between array and pointer variable? In what way are they similar?

Assignment Set #2

1. What do you mean by Function Overloading? Illustrate with an example.
2. What do you mean by Inline Function? In what ways it is advantageous?

Note:: ***The deadline for submission of Lab works and Assignment is on or before 24th April 2019 (Strictly follow the patterns for lab works and also for assignment(Theory questions)).***