**CS120 Fundamental of Programming**

**Lab No. 4: Logical Operators and Decision Structure**

**Objective:**

The objective of this lab is to practice decision structures in C and logical operators.

**Example 1:**

This program demonstrates use of logical operators (e.g. AND).

#include<stdio.h>

int main()

{

int age;

printf("Enter age");

scanf("%d",&age);

if( (age>0) && (age<14) )

printf("child");

if ( (age>=14) && (age<18) )

printf("teenager);

if(age>=18)

printf("adult");

return 0;

}

**Example 2:**

This program demonstrates the use of switch and case structures.

#include <stdio.h>

int main()

{

int grade;

printf("Enter grade of student (between 0 and 4) : ");

scanf("%d", &grade);

switch (grade) {

case 4: printf("Excellent");

break;

case 3: printf("Good");

break;

case 2: printf("Average");

break;

case 1: printf("Poor");

break;

case 0: printf("Failing");

break;

default: printf("Illegal grade");

break;

}

system("pause");

return 0;

}

**Exercises**

1. Write a program that accepts an integer number and prints whether the entered number is a 1-digit (0-9), two digit (10-99), three digit(100-999), four digit(1000-9999), or a five-or-more digit number.
2. Write a program that accepts a three digit number (e.g. 121) as input and prints whether the number is palindrome or not. A number is palindrome if it reads the same forward and backward (e.g. 121, 131, 232). Hint: you can use the division and remainder operators to find out the right-most and left-most digits. Comparing the right-most and left-most digits would provide the answer.
3. Write a program that displays whether a number input from the keyboard is even or odd number. Use switch and case structure to print the correct output.