North South University
Department of Electrical and Computer Engineering
CSE 115L: Programming Language I Lab
Week 02 – IF-ELSE AND CONDITIONAL STATEMENTS

Basic syntax of if-else statement in C.

If(**condition**){
    Statements;
}else{
    Statements;
}

Condition is a Boolean expression written with only relational operators or Boolean operator or combination of both.

Example 1: any non 0 value is considered true

```
#include<stdio.h>
int main()
{
   if(1)
   {
       printf("The statement is true!!\n");
   }
   return 0;
}
```

Ex-2(if-else with relational operators and Boolean operators combination)

```
#include<stdio.h>
int main()
{
   int num;
   printf("Enter a number:");
   scanf("%d",&num);

   if(num>=90)
      printf("Grade is A!");
   else if(num>= 80 && num < 90)
      printf("Grade is B!");
   else if(num>=70 && num<80)
      printf("Grade is C!");
   else
      printf("Fail!");
   return 0;
}
```

Ex-3(The 'Or' operator)

```
#include<stdio.h>
int main()
{
   char c;
   printf("Enter a character:");
   scanf("%c",&c);

   if(c=='a' || c=='A')
      printf("You pressed A!!");
   else if(c=='B' || c=='b')
      printf("You pressed B!!");
   else if(c=='c' || c=='C')
      printf("You pressed C!!");
   else
      printf("You pressed
different key!\n");
   return 0;
}
```

Operators

Relational operators	
Op1 > Op2	Op1 Greater than Op2
op1 >= op2	Op1 greater than or equal to op2
op1 < op2	Op1 less than op2
op1 <= op2	Op1 less than r equal to op2
op1 == op2	Op1 equal to op2
op1 != op2	Op1 not equal to op2

Boolean operators	
&&	AND
||	Or
!	Not
!=	Not equal

Lab Tasks (If and else)

1. Determine whether an integer input is odd or even.

2. Write a program that checks whether a particular year is leap year or not. To determine whether a year is leap year or not use the following rule.

   A leap year must satisfy any or both of the following conditions:

   - Divisible by 400
   - Divisible by 4 and not divisible by 100

3. Write a program to check and output whether a char input is digit, uppercase letter or lowercase letter. Use the following information:

- Digit: 0-9: ASCII value (48-57)
- Uppercase alphabet: A-Z: ASCII value (65-90)
- Lowercase alphabet: a-z: ASCII value (97-122)

4. Write a program that finds the maximum of the three numbers. Take numbers as input

Syntax of switch in C	Ex-4 (switch demo)	Ex-5(two or more cases sharing one break statements)

switch (expression) { case label1 : body1 break; case label2 : body2 break; case label3 : body3 break; default : default-body break; } next-statement;	#include<stdio.h>
	int main()
	{
	int n;
	printf("Enter a number between (1-3):");
	scanf("%d",&n);
	
	switch(n)
	{
	case 1:
	printf("Pressed 1!\n");
	break;
	case 2:
	printf("Pressed 2!\n");
	break;
	case 3:
	printf("Pressed 3!\n");
	break;
	default :
	printf("You did not press between (1-3)\n");
	
	}
	}
		#include<stdio.h>
		int main()
		{
		char c;
		printf("Enter a Grade letter:");
		scanf("%c",&c);
		switch(c)
		{
		case 'A':
		case 'a':
		printf("You got A! \n");
		break;
		case 'B':
		case 'b':
		printf("You got B! \n");
		break;
		case 'C':
		case 'c':
		printf("You got C! \n");
		break;
		default:
		printf("Invalid Grade! \n");
		}
		return 0;
		}

Switch Task

1. Write a program that asks user for an arithmetic operator (+, - , * or /) and two operands (say a and b). Display result of the corresponding calculation using **switch** statement.

   *Enter the operator: **
   Enter a: 50
   Enter b: 3
   Result: 150

Home Tasks

1. Take an integer input from user and check the following conditions:
   - If the number is divisible by both 2 and 3 : Print “Divisible by both”
   - If the number is divisible by either 2 or 3 : Print “Divisible by 2 or 3”
   - If none of the above conditions is true, print “Not divisible by 2 or 3”

2. Write a C program to input month number and print number of days in that month. You must use switch-case to solve this problem. Assume February has 28 day