GEDIZUNIVERSITY

izmir

Faculty of Engineering and Architecture

Computer Engineering Department

COM 101 – INTRODUCTION TO PROGRAMMING

Homework   #1

Academic Year :   Fall 2015-2016

Due Date :   October 29, 2015 hr. -5pm (Thursday)

Course Instructor : Inst. Gökhan Akyol

Course Assistants : Res.Asst. Arzum Karataş & Res. Asst. Feyza Galip

Question 1: (20 points)

In the following code, there may be/ may be not some logical and syntactic errors.
Please, remove the all errors inside of the code if there are any.

```c
#include <stdio.h>
#include <stdlib.h>
/*
 * This program calculates Body Mass Index and informs the user about he/she belongs to which category.
 * Author: Feyza Galip
 * Date: 22/10/2015
 */
int main()
{
    // get the height and weight from the user
    printf("Please enter your weight (kg):\n");
    scanf("&d,",weight);

    printf("Please enter  your height (m):\n")
    scanf("&d,",height);

    double height;
    double weight;
    double bmi;

    printf("This program calculates Body Mass Index and informs the user about he/she belongs to which category.\n\n");



    //calculate body mass index. Formula is weight/(height^2)
    bmi = weight/height*height;

    //if bmi <= 18.5, then underweight. if bmi is between 18.5 and 24.9, then normalweight
    //if bmi is between 24.9 and 29.9, then overweight. if bmi >= 30, then obesity.
    if(bmi <= 18.5);
        printf("Your BMI is %d and you are Underweight\n");
    if(bmi <= 24.9);
        printf("Your BMI is %d and you are Normalweight\n");
```

```
    if(bmi <= 29.9);
        printf("Your BMI is %d and you are Overweight\n");
    if(bmi >= 30);
        printf("Your BMI is %d and you are Obesity\n");

}
```

Question 2: (20 points)

Exclusive disjunction is a logical operation that outputs true only when both inputs differ. That is, the output of this operation is true when one input is true, the other one is false. Let's assume that **p** and **q** are the inputs, and 1 represents true while 0 represents false. Make it clear, examine the following table.

p	q	output
0	0	0
0	1	1
1	0	1
1	1	0

Output is calculated by using the formula: $(p \lor q) \land \neg(p \land q)$

Write a C program implements exclusive disjunction operation. That is, your program should produce the correct output value for the inputs according to the table above.

Note:
$\lor$ represents "logical or"
$\land$ represents "logical and"
$\neg$ represents "negation"

Question 3: (30 points)

Binary Number Checker:

Write a C program that takes a 5-digit numbers from the user,detects whether the number is a binary number or not,and then writes out the **"The entered number is a binary number"** if it is so; otherwise writes out **"The entered number is not a binary number!"**

Question 4: (30 points)

Mini Turkey-X Country Hour Converter:

Write a C program that finds the current hour in another country when the hour in Turkey given by the user. It is enough to make conversion for the countries in the following table. Assume that hours of a day represented in 24 hours. That is, there is no am/pm time division.

Country(X)	Time Difference
America	- 9 hours
Germany	- 1 hour
France	+1 hour
Italy	- 1 hour
Belgium	- 1 hour

For example, if 22.00 is given in Turkey, the time is 23.00 in France.

P.S.:

1. You are required to work alone. Teamwork is NOT allowed. Copy detection will done and it is punished strictly.

2. In your codes, you are expected to use good programming practices like naming conventions, indentations and comments. They will be graded, too.

3. Put your homework projects into **a** zipped folder(.zip or .rar are accepted). Do NOT send separate zip file for each question. Use the following convention for this folder.

COM101_HmwX_StudentName.zip
Ex: COM101_Hmw1_AliceBlack.zip

4. You should submit your homework to **gedizcom101lab@gmail.com**

5. Late submissions will be graded by using the formula $100 - 10*d^2$ where d is the number of late submission days.