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**MAT. NO:** 18/ENG06/043

**DEPT.:** Mechanical Engineering

1. Write a C program to convert 1343 days into years, weeks and days

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int years, weeks, days;
    days=1343;

    years= days/365;
    weeks= (days % 365)/7;
    days= days - ((years*365) + (weeks*7));

    printf("Years: %d\n", years);
    printf("Weeks: %d\n", weeks);
    printf("Days: %d\n", days);

    return 0;
}
```

The screenshot shows the Code::Blocks IDE interface. The code editor window displays the provided C program. The output window shows the results of the program's execution: Years: 3, Weeks: 35, Days: 3. The status bar at the bottom provides build information: C:\Users\Malik\Documents\Prog ass\1st q.c, C/C++, Windows (CR+LF), WINDOWS-1252, Line 4, Col 9, Pos 51.

```

2. Write a C program to calculate the distance between two points
   Formula:  $\sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$ 

#include <stdio.h>
#include <stdlib.h>

int main()
{
    float x1, x2, y1, y2, d;

    printf("\n x Co-ordinates of point 1:");
    scanf("%f", &x1);

    printf("\n y Co-ordinates of point 1:");
    scanf("%f", &y1);

    printf("\n x Co-ordinates of point 2:");
    scanf("%f", &x2);

    printf("\n y Co-ordinates of point 2:");
    scanf("%f", &y2);

    d=((x2-x1)*(x2-x1)) + ((y2-y1)*(y2-y1));
    printf("Distance between the points = %f", sqrt(d));

    return 0;
}

```

The screenshot shows the Code::Blocks IDE interface. The top menu bar includes File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, Doxygen, Settings, and Help. The toolbar below has various icons for file operations like Open, Save, and Build. The main workspace shows three tabs: '1st q.c', '2ndq.c', and '3rd q.c'. The '2ndq.c' tab is active, displaying the C code for calculating the distance between two points. To the right of the code editor is a terminal window showing the program's output. The terminal output is as follows:

```

x Co-ordinates of point 1:5
y Co-ordinates of point 1:6
x Co-ordinates of point 2:8
y Co-ordinates of point 2:0
Distance between the points = 6.708204
Process returned 0 (0x0) execution time : 36.879 s
Press any key to continue.

```

At the bottom of the interface, there is a 'Logs & others' section and a status bar indicating the current file is 'C:\Users\Malik\Documents\Prog ass\2ndq.c', the build configuration is 'C/C++', the platform is 'Windows (CR+LF)', the build number is 'WINDOWS-1252', the line number is 'Line 21, Col 55, Pos 474', and the status is 'Insert'.

3. Write a C program that reads 3 floating values and checks if it is possible to make a triangle with them. Also, calculate the perimeter of the triangle if the said values are valid

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    float x, y, z, P, A;
    printf("\nInput 1st number:");
    scanf("%f", &x);
    printf("\nInput 2nd number:");
    scanf("%f", &y);
    printf("\nInput 3rd number:");
    scanf("%f", &z);

    if(x<(y+z) && y<(x+z) && z<(x+y))
    {
        P = x+y+z;
        printf("Triangle can be formed");
        printf("\nPerimeter = %.lf\n", P);
    }
    else
    {
        printf("Not possible to create a triangle");
    }

    return 0;
}
```

The screenshot shows the Code::Blocks IDE interface. The left pane displays the project structure under 'Management' with files 1st.q.c, 2ndq.c, and 3rd q.c. The right pane shows the code editor with the 3rd q.c file open, containing the provided C code. The bottom right pane shows the terminal window with the output of the program running, including user input and the resulting perimeter value. The bottom status bar shows the file path C:\Users\Malik\Documents\Prog ass\3rd q.c, the compiler C/C++, the encoding Windows (CR-LF), the line number 14, column 38, position 297, and other status indicators.

```
C:\Users\Malik\Documents\Prog ass\3rd q.c
```

```
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
```

```
<global>
```

```
main(): int
```

```
Management X
```

```
Projects Files FSymbols X
```

```
Workspace Prog ass.
```

```
Sources 1st.q.c 2ndq.c 3rd q.c
```

```
1 #include <stdio.h>
2 #include <stdlib.h>
3
4 int main()
5 {
6     float x, y, z, P, A;
7     printf("\nInput 1st number:");
8     scanf("%f", &x);
9     printf("\nInput 2nd number:");
10    scanf("%f", &y);
11    printf("\nInput 3rd number:");
12    scanf("%f", &z);
13
14    if(x<(y+z) && y<(x+z) && z<(x+y))
15    {
16        P = x+y+z;
17        printf("Triangle can be formed");
18        printf("\nPerimeter = %.lf\n", P);
19    }
20    else
21    {
22        printf("Not possible to create a triangle");
23    }
24 }
```

```
"C:\Users\Malik\Documents\Prog ass\bin\Debug\Prog ass.exe"
```

```
Input 1st number:3
Input 2nd number:5
Input 3rd number:7
Triangle can be formed
Perimeter = 15

Process returned 0 (0x0) execution time : 10.460 s
Press any key to continue.
```

```
Logs & others
```

```
Code:Blocks X Search results X Cccc X Build log X Build messages X
```

```
See variable PATH=C:\Program Files\MinGW\bin;C:\Program Files\MinGW\lib\gcc\4.6.2\program\files\;C:\Windows\Win32\Management\Engine\Components\I2C\;C:\Windows\Win32\Management\Engine\Components\I2S;C:\Windows\System32\WindowsPowerShell\v1.0;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL;C:\Program Files\Intel\Intel(R) Management Engine Components\DAL\;C:\Program Files\Intel\Intel(R) Management Engine Components\IPMI;C:\Program Files\Intel\Intel(R) Management Engine Components\IPMI\;C:\Program Files\MATLAB\R2017a\bin;C:\Users\Malik\AppData\Local\Microsoft\WindowsApps
Executing: "C:\Program Files\Codeblocks\cb_console_runner.exe" "C:\Users\Malik\Documents\Prog ass\bin\Debug\Prog ass.exe" (in C:\Users\Malik\Documents\Prog ass\..)
```

```
C:\C++ Windows (CR-LF) WINDOWS-1252 Line 14, Col 38, Pos 297 Insert Read/Write default
```

4. Write a c program to read the ages of 20 people and count total baby age school age and adult age

```
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int age;
    int cnt_baby=0, cnt_school=0, cnt_adult=0;
    int count=0;

    while(count<20)
    {
        printf("Input age(%d) :", count+1);
        scanf("%d", &age);
        if(age>=0 && age<=4)
            cnt_baby++;
        else if(age>=5 && age<=17)
            cnt_school++;
        else
            cnt_adult++;

        count++;
    }

    printf("Still a baby: %d\n", cnt_baby);
    printf("Attending school: %d\n", cnt_school);
    printf("Adult(s): %d\n", cnt_adult);

    return 0;
}
```

```
4th q.c [Prog ass.] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
Management <global> main(): int
Projects Files FSymbols
1st q.c 2ndq.c 3rd q.c 4th q.c
Workspace Prog ass.
Sources 1st q.c 2ndq.c 3rd q.c 4th q.c
Management
4th q.c [Prog ass.] - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help
Management <global> main(): int
Projects Files FSymbols
1st q.c 2ndq.c 3rd q.c 4th q.c
Workspace Prog ass.
Sources 1st q.c 2ndq.c 3rd q.c 4th q.c
Input age(1):0
Input age(2):4
Input age(3):2
Input age(4):17
Input age(5):21
Input age(6):33
Input age(7):40
Input age(8):27
Input age(9):31
Input age(10):19
Input age(11):80
Input age(12):18
Input age(13):13
Input age(14):11
Input age(15):10
Input age(16):2
Input age(17):6
Input age(18):1
Input age(19):9
Input age(20):6
Still a baby: 7
Attending school: 12
Adult(s): 1
process returned 0 (0x0) execution time : 55.586 s
press any key to continue.

Logs & others
C:\Program Files\MinGW\bin\>C:\Program Files\MinGW\bin\>C:\Program Files(x86)\Intel\Intel(R) Management Engine Components\iCLS\>
\Program Files\Intel\Intel(R) Management Engine Components\iCLS\>C:\Windows\System32\wheaui\>C:\Windows\System32\WindowsPowerShell
\v1.0\>C:\Program Files(x86)\Intel\Intel(R) Management Engine Components\DAL\>C:\Program Files\Intel\Intel(R) Management Engine Components\DAL\>C:\Program Files
(x86)\Intel\Intel(R) Management Engine Components\IPT\>C:\Program Files\Intel\Intel(R) Management Engine Components\IPT\>C:\Program Files\MATLAB\R2017a\>runtime
\win64\>C:\Program Files\MATLAB\R2017a\bin\>C:\Users\Malik\AppData\Local\Microsoft\Windows\apps
Executing: "C:\Program Files\CodeBlocks\cb_console_runner.exe" "C:\Users\Malik\Documents\Prog ass\bin\Debug\Prog ass.exe" (in C:\Users\Malik\Documents\Prog
ass\..)
```

5. Write a c program to read a random number and then ask user to guess it (from 0 - 100)

```

#include <stdio.h>
#include <stdlib.h>
#include <time.h>

int main()
{
    int random_genNo=0, count=0, num;
    int stime;
    long ltime;

    ltime = time(NULL);
    stime = (unsigned) ltime/2;
    srand(stime);

    random_genNo=rand()%100;

    while(1)
    {
        count+=1;

        printf("\n\nEnter your guess (0-100):");
        scanf("%d", &num);

        if(random_genNo==num) {
            printf("Your guess is accurate");
            break;
        }
        else if(random_genNo>num) {
            printf("Your guess is lower than the number, try again");
        }
        else if(random_genNo<num) {
            printf("Your guess is higher than the number, try again");
        }

        if(count==7) {
            printf("\n\nYou could not guess correct. You can no longer
attempt!\n");
            break;
        }
    }

    return 0;
}

```

5th q.c [Prog ass.] - Code::Blocks 20.03

File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins Doxygen Settings Help

Management X Projects Files FSymbols Workspace

main(): int

1st q.c X 2ndq.c X 3rd q.c X 4th q.c X 5th q.c X

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <time.h>
4
5 int main()
6 {
7     int random_genNo=0, count=0, num;
8     int stime;
9     long ltime;
10
11    ltime = time(NULL);
12    stime = (unsigned) ltime/2;
13    srand(stime);
14
15    random_genNo=rand()%100;
16
17    while(1)
18    {
19        count+=1;
20
21        printf("\n\nEnter your guess(0-100):");
22        scanf("%d", &num);
23    }
}
```

Enter your guess(0-100):60  
Your guess is higher than the number, try again  
Enter your guess(0-100):59  
Your guess is higher than the number, try again  
Enter your guess(0-100):57  
Your guess is higher than the number, try again  
Enter your guess(0-100):55  
Your guess is higher than the number, try again  
Enter your guess(0-100):54  
Your guess is higher than the number, try again  
Enter your guess(0-100):48  
Your guess is lower than the number, try again  
Enter your guess(0-100):44  
Your guess is lower than the number, try again  
You could not guess correct. You can no longer attempt!

Process returned 0 (0x0) execution time : 17.375 s  
Press any key to continue.

C:\Users\Malik\Documents\Prog ass.\5th q.c C/C++ Windows (CR+LF) WINDOWS-1252 Line 32, Col 68, Pos 711 Insert Read/Write default