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DEPARTMENT: BIOMEDICAL ENGINEERING

COURSE: ENG224; STRUCTURED COMPUTER PROGRAMMING

ASSIGNMENT SOLUTION

1).

- `#include<stdio.h>`
- `#include<conio.h>`
  
- `void main( )`
- `{`
- `int days ,yr,mn,wk,d;`
- `printf("Enter the no of days");`
- `scanf("%d",&days);`
  
- `yr = days /365;`
  
- `mn =(days /365)/30;`
  
- `printf("Years= %d \t Months= %d \t Weeks =%d \t days = %d",yr,mn,wk,d);`
- `// converts days to years, weeks and months`
- `getch();`
- `}`

```

1 #include<stdio.h>
2 #include<conio.h>
3
4 void main()
5 {
6     int days, yr, mn, wk, d;
7     printf("Enter the no of days");
8     scanf("%d", &days);
9
10    yr = days / 365;
11
12    mn = (days / 365) / 30;
13
14
15    printf("Years= %d \t Months= %d \t Weeks =%d \t days = %d", yr, mn, wk, d);
16    //converts days to years, weeks and months
17    getch();
18 }
19
20

```

Build messages:

```

==== Build: Debug in HOMEASSIGNMENT2 (compiler: GNU GCC Compiler) ====
warning: return type of 'main' is not 'int' [-Wmain]
In function 'main':
warning: 'wk' is used uninitialized in this function [-Wuninitialized]
warning: 'd' is used uninitialized in this function [-Wuninitialized]

```

```

Enter the no of days:343
Years= 0      Months= 11      Weeks =13      days = 343
Process returned 13 (0x0)   execution time : 26.986 s
Press any key to continue.

```

Run messages:

```

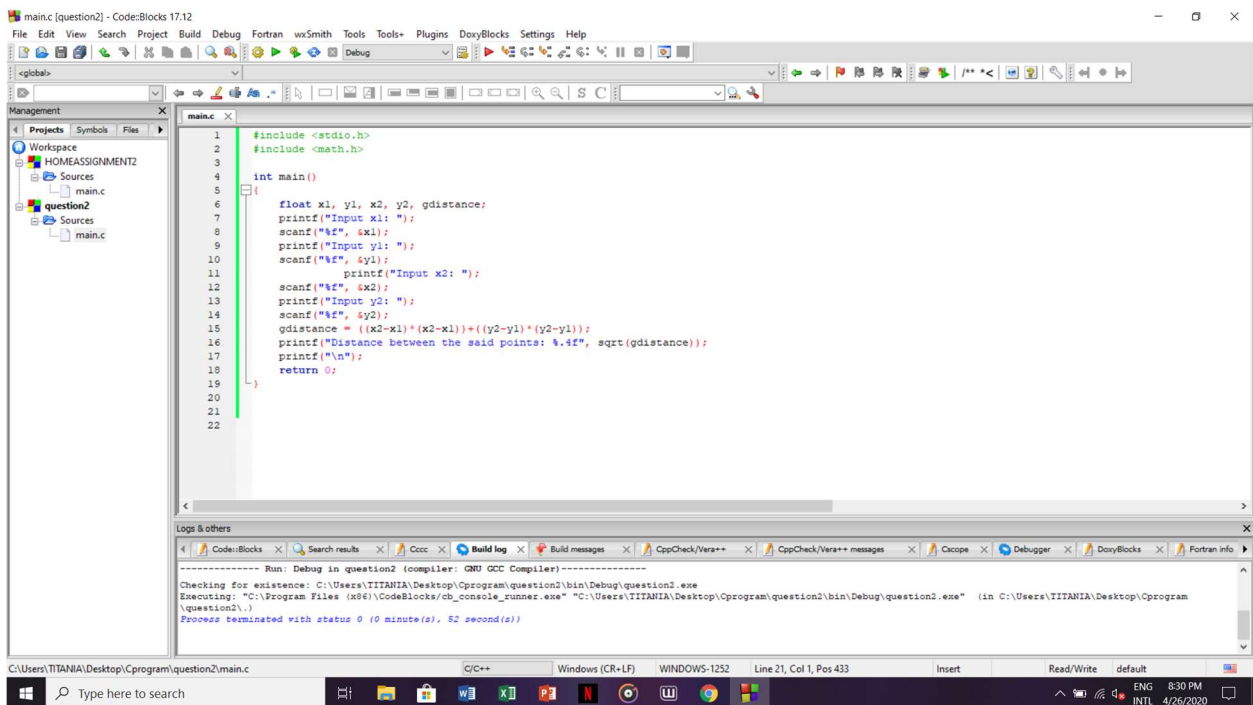
----- Run: Debug in HOMEASSIGNMENT2 (compiler: GNU GCC Compiler) -----
Checking for existence: C:\Users\TITANIA\Desktop\Program\HOMEASSIGNMENT2\bin\Debug\HOMEASSIGNMENT2.exe
Executing: "C:\Program Files (x86)\CodeBlocks\cb_console_runner.exe" "C:\Users\TITANIA\Desktop\Program\HOMEASSIGNMENT2\bin\Debug\HOMEASSIGNMENT2.exe" (in C:\Users\TITANIA\Desktop\Program\HOMEASSIGNMENT2\.)

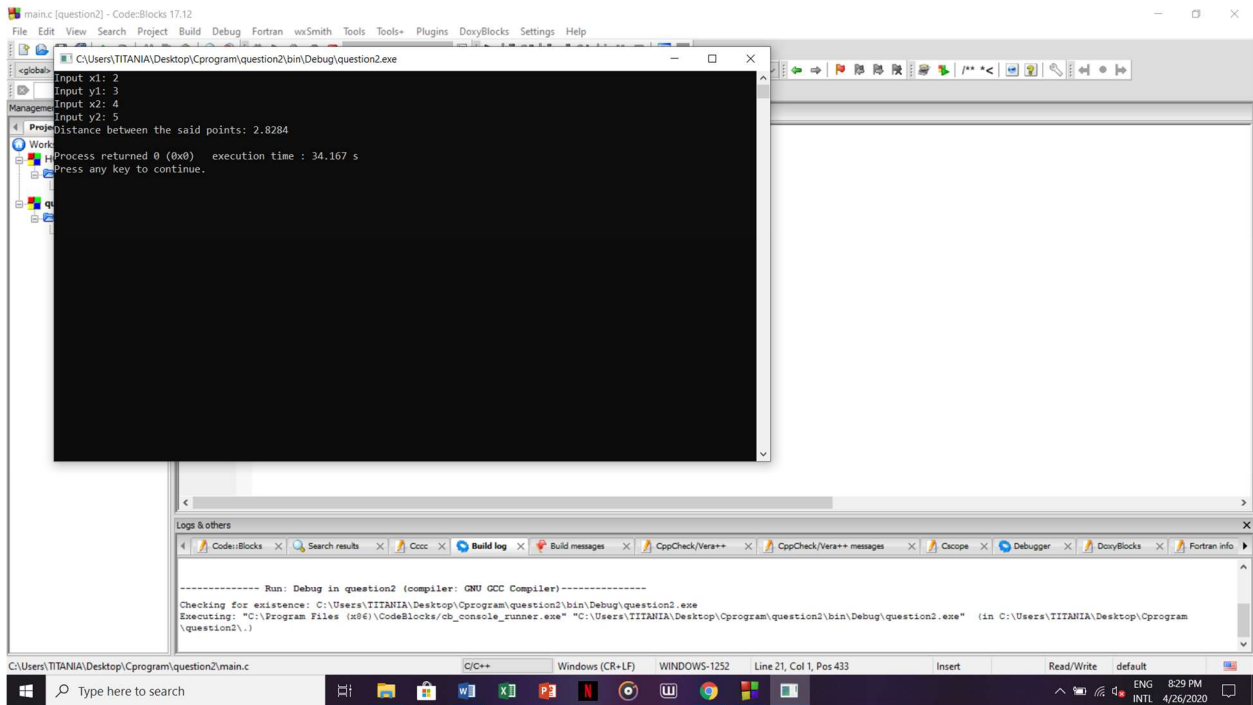
```

2).

- #include <stdio.h>
- #include <math.h>

- int main() {
  - float x1, y1, x2, y2, gdistance;
  - printf("Input x1: ");
  - scanf("%f", &x1);
  - printf("Input y1: ");
  - scanf("%f", &y1);
- printf("Input x2: ");
  - scanf("%f", &x2);
  - printf("Input y2: ");
  - scanf("%f", &y2);
  - gdistance = ((x2-x1)\*(x2-x1))+((y2-y1)\*(y2-y1));
  - printf("Distance between the said points: %.4f", sqrt(gdistance));
  - printf("\n");
  - return 0;
- }





3).

- `int main() {`
  - `float x, y, z, P, A;`
- `printf("\nInput the first number: ");`
- `scanf("%f", &x);`
- `printf("\nInput the second number: ");`
- `scanf("%f", &y);`
- `printf("\nInput the third number: ");`
- `scanf("%f", &z);`
  
- `if(x < (y+z) && y < (x+z) && z < (y+x))`
  - `{`
    - `P = x+y+z;`
    - `printf("\nPerimeter = %.1f\n", P);`
  
- `}`
- `else`
  - `{`
    - `printf("Not possible to create a triangle..!");`
    - `}`
- `}`

```

1 #include <stdio.h>
2
3
4 int main()
5 {
6     float x, y, z, P, A;
7     printf("\nInput the first number: ");
8     scanf("%f", &x);
9     printf("\nInput the second number: ");
10    scanf("%f", &y);
11    printf("\nInput the third number: ");
12    scanf("%f", &z);
13
14    if(x < (y+z) && y < (x+z) && z < (y+x))
15    {
16        P = x+y+z;
17        printf("\nPerimeter = %.1f\n", P);
18    }
19    else
20    {
21        printf("Not possible to create a triangle..!");
22    }
23
24 }
25
26
27

```

Build messages:

```

==== Build: Debug in question 3 (compiler: GNU GCC Compiler) ====
In function 'main':
warning: unused variable 'A' [-Wunused-variable]
==== Build finished: 0 error(s), 1 warning(s) (0 minute(s), 2 second(s)) ====
==== Run: Debug in question 3 (compiler: GNU GCC Compiler) ====

```

```

Input the first number: 5
Input the second number: 7
Input the third number: 3
Perimeter = 15.0
Process returned 0 (0x0)   execution time : 19.437 s
Press any key to continue.

```

Build messages:

```

----- Run: Debug in question 3 (compiler: GNU GCC Compiler)-----
Checking for existence: C:\Users\TITANIA\Desktop\Cpprogram\question 3\bin\Debug\question 3.exe
Executing: "C:\Program Files (x86)\CodeBlocks\cb_console_runner.exe" "C:\Users\TITANIA\Desktop\Cpprogram\question 3\bin\Debug\question 3.exe" (in C:\Users\TITANIA\Desktop\Cpprogram\question 3\.)

```

4)

- #include <stdio.h>
- int main()
- {
  - int age;
  - int cnt\_baby=0,cnt\_school=0,cnt\_adult=0;
  - int count=0;

- **while(count<20)**
- {
  - printf("Enter age of person [%d]: ",count+1);
  - scanf("%d",&age);
  
  - **if(age>=0 && age<=4)**
    - cnt\_baby++;
  - **else if(age>=5 && age<=17)**
    - cnt\_school++;
  - **else**
    - cnt\_adult++;
  - // increasing the number of years by 1
  - count++;
- }
  
- printf("Baby age: %d\n",cnt\_baby);
- printf("School age: %d\n",cnt\_school);
- printf("Adult age: %d\n",cnt\_adult);
- **return 0;**
- }

```

1 #include <stdio.h>
2 #include <stdlib.h>
3
4 int main()
5 {
6     int age;
7     int cnt_baby=0,cnt_school=0,cnt_adult=0;
8     int count=0;
9
10    while(count<20)
11    {
12        printf("Enter age of person [%d]: ",count+1);
13        scanf("%d",&age);
14
15        if(age>=0 && age<=4)
16            cnt_baby++;
17        else if(age>=5 && age<=17)
18            cnt_school++;
19        else
20            cnt_adult++;
21        // increasing the number of years by 1
22        count++;
23    }
24
25    printf("Baby age: %d\n",cnt_baby);
26    printf("School age: %d\n",cnt_school);
27    printf("Adult age: %d\n",cnt_adult);
28    return 0;
29 }
30
  
```

```

main.c [question4] - Code::Blocks 17.12
C:\Users\TITANIA\Desktop\Cprogram\question4\bin\Debug\question4.exe
Enter age of person [1]: 4
Enter age of person [2]: 14
Enter age of person [3]: 18
Enter age of person [4]: 67
Enter age of person [5]: 5
Enter age of person [6]: 77
Enter age of person [7]: 18
Enter age of person [8]: 19
Enter age of person [9]: 21
Enter age of person [10]: 56
Enter age of person [11]: 90
Enter age of person [12]: 22
Enter age of person [13]: 33
Enter age of person [14]: 16
Enter age of person [15]: 15
Enter age of person [16]: 13
Enter age of person [17]: 10
Enter age of person [18]: 3
Enter age of person [19]: 4
Enter age of person [20]: 5
Baby age: 3
School age: 7
Adult age: 10
Process returned 0 (0x0)   execution time : 77.561 s
Press any key to continue.

28     return 0;
29
30
----- Run: Debug in question4 (compiler: GNU GCC Compiler)-----
Checking for existence: C:\Users\TITANIA\Desktop\Cprogram\question4\bin\Debug\question4.exe
Executing: "C:\Program Files (x86)\CodeBlocks\cb_console_runner.exe" "C:\Users\TITANIA\Desktop\Cprogram\question4\bin\Debug\question4.exe" (in C:\Users\TITANIA\Desktop\Cprogram\question4\..)

```

5)

- `#include <stdio.h>`
- `int main()`
- `{`
- `int num, guess, tries = 0;`
- `srand(time(0)); /* seed random number generator */`
- `num = rand() % 100 + 1; /* random number between 1 and 100 */`
- `printf("Guess My Number Game\n\n");`
- `do`
- `{`
- `printf("Enter a guess between 1 and 100 : ");`
- `scanf("%d", &guess);`
- `tries++;`
- `if (guess > num)`
- `{`
- `printf("Too high!\n\n");`
- `}`

- else if (guess < num)
- {
- printf("Too low!\n\n");
- }
- else
- {
- printf("\nCorrect! You got it in %d guesses!\n", tries);
- }
- }while (guess != num);
- return 0;
- }

The screenshot shows the Code::Blocks IDE with a C program for a number guessing game. The code is as follows:

```

1  #include <stdio.h>
2
3
4  int main()
5  {
6      int num, guess, tries = 0;
7      srand(time(0)); /* seed random number generator */
8      num = rand() % 100 + 1; /* random number between 1 and 100 */
9
10     printf("Guess My Number Game\n\n");
11
12     do
13     {
14         printf("Enter a guess between 1 and 100 : ");
15         scanf("%d", &guess);
16         tries++;
17
18         if (guess > num)
19         {
20             printf("Too high!\n\n");
21         }
22         else if (guess < num)
23         {
24             printf("Too low!\n\n");
25         }
26         else
27         {
28             printf("\nCorrect! You got it in %d guesses!\n", tries);
29         }
30     }while (guess != num);
31
32     return 0;
33 }

```

The IDE interface includes a menu bar (File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Plugins, DoxyBlocks, Settings, Help), a toolbar, a workspace tree on the left showing a project named 'HOMEASSIGNMENT2' with sub-projects 'question2', 'question3', 'question4', and 'question5', each containing a 'main.c' file. The status bar at the bottom shows the file path 'C:\Users\TITANIA\Desktop\Cprogram\question5\main.c', the compiler 'C/C++', and the window title 'WINDOWS-1252'. The system tray at the bottom right shows the date '4/26/2020' and time '8:49 PM'.



