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DEPT; MECHANICAL ENGINEERING

COURSE; ENG224 ASSIGNMENT (C-PROGRAMMING)

QUESTION 1

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

int main()
{
    //This code converts a given Number of days into years, weeks and days.
    int days;
    int years;
    int weeks;
    int days2;
    int remainder;
    printf("please input the number of days\n");
    scanf("%d", &days);//This code takes user input
    if (days >= 365){
        years =days/365;
        remainder = days-(years*365);
        weeks = remainder/7;
        remainder = remainder-(weeks*7);
        days2 = remainder;
        printf("There are %d years, %d weeks and %d days in %d days", years,weeks,days2,days);
    }else if(days<365 && days>=7){
        weeks = days/7;
        days2 = days-(weeks*7);
        printf("There are %d weeks and %d days in %d days", weeks,days2,days);
    }else if (days<7){
        printf("Pls input a value greater than 7");
    }
}
```

QUESTION 1 OUTPUT

C:\Users\ALE\Desktop\Test\ConversionOfYears\bin\Debug\ConversionOfYears.exe

```
please input the number of days
1343
There are 3 years, 35 weeks and 3 days in 1343 days
Process returned 0 (0x0)    execution time : 3.426 s
Press any key to continue.
```

QUESTION 2;

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

int main()
{
    double x1;
    double x2;
    double y1;
    double y2;
    double distance;
    double xSquared;
    double ySquared;
    printf("pls input the value of x1\n");
    scanf("%lf", &x1);
    printf("pls input the value of x2\n");
    scanf("%lf", &x2);
    printf("pls input the value of y1\n");
    scanf("%lf", &y1);
    printf("pls input the value of y2\n");
    scanf("%lf", &y2);
    xSquared = pow((x2-x1),2);
    ySquared = pow((y2-y1),2);
    distance = pow((xSquared+ySquared),0.5);
    printf("The distance between the two co-ordinates are %lf", distance);
}
```

QUESTION 2 OUTPUT;

```
pls input the value of x1
2
pls input the value of x2
5
pls input the value of y1
2
pls input the value of y2
6
The distance between the two co-ordinates are 5.000000
Process returned 0 (0x0)   execution time : 11.763 s
Press any key to continue.
```

QUESTION 3

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

int main()
{
    // Where a,b,c Represent the sides of the triangle
    float a;
    float b;
    float c;
    float perimeter;
    printf("please input the value of the first Side of the Triangle\n");
    scanf("%f", &a);
    printf("please input the value of the second Side of the Triangle\n");
    scanf("%f", &b);
    printf("please input the value of the third Side of the Triangle\n");
    scanf("%f", &c);
    if(((a+b)>c)&&((a+c)>b)&&((b+c)>a)){
        printf("The values inputed are Valid to make a Triangle\n");
        perimeter = a+b+c;
        printf("\nThe Perimeter of the triangle is %f", perimeter);
    }else{
        printf("The values inputed cant form a triangle...pls try again");
    }
}
```

QUESTION 3 OUTPUT;

```
please input the value of the first Side of the Triangle
3
please input the value of the second Side of the Triangle
5
please input the value of the third Side of the Triangle
7
The values inputed are Valid to make a Triangle

The Perimeter of the triangle is 15.000000
Process returned 0 (0x0)   execution time : 4.427 s
Press any key to continue.
```

IF THE TRIANGLE IS INVALID

```
please input the value of the first Side of the Triangle
3
please input the value of the second Side of the Triangle
3
please input the value of the third Side of the Triangle
10
The values inputed cant form a triangle...pls try again
Process returned 0 (0x0)   execution time : 9.771 s
Press any key to continue.
```

QUESTION 4

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

int main()
{
    int age;
    int count=1;
    int babyAge=0;
    int schoolAge=0;
    int adultAge=0;
    while(count<=20){
        printf("Please input age of person %d\n", count);
        scanf("%d", &age);
        if(age>=0 && age<=4){
            babyAge = babyAge+1;
        }
        if(age>=5 && age<=17){
            schoolAge=schoolAge+1;
        }
        if(age>=18){
            adultAge=adultAge+1;
        }
        count++;
    }
    printf("The breakdown of ages are Baby Age; %d, School age; %d, Adult Age; %d", babyAge,schoolAge,adultAge);
}
```

QUESTION 4 OUTPUT;

```
C:\Users\ALE\Desktop\Test\ageOfTwentyPeople\bin\Debug\ageOfTwentyPeople.exe
Please input age of person 1
4
Please input age of person 2
5
Please input age of person 3
20
Please input age of person 4
55
Please input age of person 5
70
Please input age of person 6
1
Please input age of person 7
2
Please input age of person 8
3
Please input age of person 9
0
Please input age of person 10
5
Please input age of person 11
3
Please input age of person 12
12
Please input age of person 13
13
Please input age of person 14
14
Please input age of person 15
3
Please input age of person 16
2
Please input age of person 17
4
Please input age of person 18
2
Please input age of person 19
4
Please input age of person 20
5
The breakdown of ages are Baby Age; 11, School age; 6, Adult Age; 3
Process returned 0 (0x0)   execution time : 32.646 s
Press any key to continue.
```

QUESTION 5

```c
int main()
{
    printf("You are to guess the number generated\nThe numbers generated is from 0 to 100\n");
    srand(time(NULL));
    int count = 1;
    int guess;
    int numberOfTrials=7;
    int randomNumber = rand() % 101;//This line of code generates the random number
    while(count<=7){
        printf("you've got %d try(s)\n", numberOfTrials);
        printf("please guess the number\n");
        scanf("%d",&guess);
        if(guess==randomNumber){
            printf("you guessed correct");
            break;
        }
        if(guess>randomNumber&&count<7){
            printf("The number inputed is greater than the random number\n");
        }
        if(guess<randomNumber&&count<7){
            printf("The number inputed is less than the random number\n");
        }
        if(count==7){
            printf("Game Over\nYou were not able to guess the number\n");
            printf("The Random number generated was; %d", randomNumber);
        }
        count++;
        numberOfTrials--;
    }
}
```

QUESTION 5 OUTPUT

IF GUESSED CORRECT

```
You are to guess the number generated
The numbers generated is from 0 to 100
you've got 7 try(s)
please guess the number
50
The number inputed is less than the random number
you've got 6 try(s)
please guess the number
70
The number inputed is greater than the random number
you've got 5 try(s)
please guess the number
60
The number inputed is greater than the random number
you've got 4 try(s)
please guess the number
55
The number inputed is less than the random number
you've got 3 try(s)
please guess the number
57
The number inputed is greater than the random number
you've got 2 try(s)
please guess the number
56
you guessed correct
Process returned 0 (0x0)   execution time : 35.002 s
Press any key to continue.
```

IF GUESSED WRONG

```
The number inputed is greater than the random number
you've got 6 try(s)
please guess the number
40
The number inputed is greater than the random number
you've got 5 try(s)
please guess the number
30
The number inputed is greater than the random number
you've got 4 try(s)
please guess the number
40
The number inputed is greater than the random number
you've got 3 try(s)
please guess the number
22
The number inputed is greater than the random number
you've got 2 try(s)
please guess the number
33
The number inputed is greater than the random number
you've got 1 try(s)
please guess the number
11
Game Over
You were not able to guess the number
The Random number generated was; 20
Process returned 0 (0x0)   execution time : 10.997 s
Press any key to continue.
```