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MAT NO: 18/ENG04/040

COURSE CODE: ENG 224

TITLE: STRUCTURED COMPUTER  
PROGRAMMING

ASSIGNMENT 2 (ALGORITHMS)

1.

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

```
int main()
{
    int days, years, weeks;
    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;
}
```

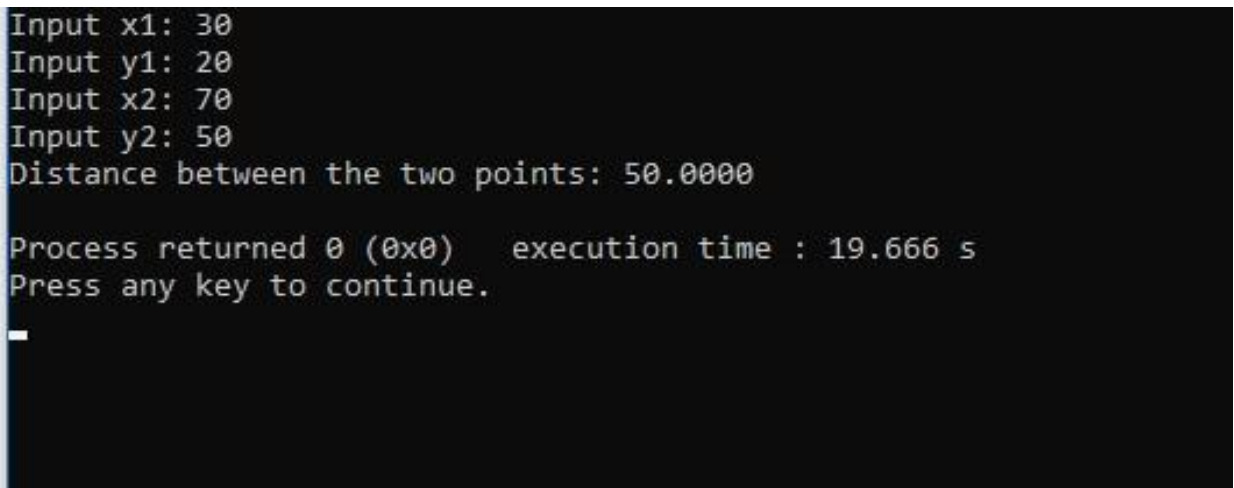
```
Years: 3
Weeks: 35
Days: 3

Process returned 0 (0x0)   execution time : 0.049 s
Press any key to continue.
```

## 2

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

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



```
Input x1: 30
Input y1: 20
Input x2: 70
Input y2: 50
Distance between the two points: 50.0000

Process returned 0 (0x0)    execution time : 19.666 s
Press any key to continue.
-
```

## 3

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

```
int main()
```

```
{
    float x, y, z, P, A;
    printf("\nLength of first side: ");
    scanf("%f", &x); printf("\nLength
of second side: "); scanf("%f", &y);
    printf("\nLength of third side: ");
    scanf("%f", &z);

    if(x < (y+z) && y < (x+z) && z < (y+x))
    {
        P = x+y+z;
        printf("Triangle can be formed");
    printf("\nPerimeter = %.1f\n", P);

    }
else
    {
        printf("Not possible to create a triangle..!");
    }
}
```

```
Length of first side: 5
```

```
Length of second side: 3
```

```
Length of third side: 7
```

```
Triangle can be formed
```

```
Perimeter = 15.0
```

```
Process returned 0 (0x0) execution time : 4.555 s
```

```
Press any key to continue.
```

## 4

```
#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("Enter person's 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("Still in School: %d\n",cnt_school);
printf("Adult life: %d\n",cnt_adult);

    return 0;
}

```

```

Enter person's age [1]: 20
Enter person's age [2]: 30
Enter person's age [3]: 40
Enter person's age [4]: 1
Enter person's age [5]: 2
Enter person's age [6]: 3
Enter person's age [7]: 6
Enter person's age [8]: 7
Enter person's age [9]: 19
Enter person's age [10]: 18
Enter person's age [11]: 4
Enter person's age [12]: 2
Enter person's age [13]: 11
Enter person's age [14]: 12
Enter person's age [15]: 34
Enter person's age [16]: 56
Enter person's age [17]: 17
Enter person's age [18]: 19
Enter person's age [19]: 22
Enter person's age [20]: 21
Still a baby: 5
Still in School: 5
Adult life: 10

```

```

Process returned 0 (0x0)   execution time : 73.322 s
Press any key to continue.

```

```
#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()%10
```

```
    0;
```

```
    while(1)
```

```
    {
```

```
        count++;
```

```
        printf("\n\nGuess a number from (0 to 100): ");
```

```
        scanf("%d",&num);
```

```
        if(random_genNo==num){    printf("Congratulations, you  
have guessed the correct number.");
```

```
            break;
```

```
        }
```

```
        else if(random_genNo<num){    printf("Generated number is less than  
the number you entered, try again...");
```

```
        }
```

```
        else if(random_genNo>num){    printf("Generated number is greater than  
the number you entered, try again...");
```

```
}

    if(count==7){    printf("\n\n You have exhausted your
attempts, BAD LUCK !!!\n");
        break;
    }
}

return 0;
}
```

```
Guess a number from (0 to 100): 30
Generated number is less than the number you entered, try again...

Guess a number from (0 to 100): 49
Generated number is less than the number you entered, try again...

Guess a number from (0 to 100): 20
Generated number is less than the number you entered, try again...

Guess a number from (0 to 100): 10
Generated number is less than the number you entered, try again...

Guess a number from (0 to 100): 9
Generated number is less than the number you entered, try again...

Guess a number from (0 to 100): 5
Generated number is greater than the number you entered, try again...

Guess a number from (0 to 100): 7
Generated number is less than the number you entered, try again...

    You have exhausted your attempts, BAD LUCK !!!

Process returned 0 (0x0)   execution time : 32.423 s
Press any key to continue.
```