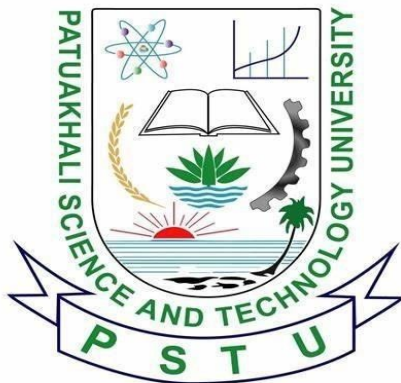# PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY

Course Code: CIT-112

SUBMITTED TO:

Prof. MD Mahbubur Rahman Sir

Department of Computer Science And Communication

Engineering

Faculty of Computer Science And Engineering

SUBMITTED BY:

Name: MD Noushad Bhuiyan

ID: 2102038, Registration No: 10165

Faculty of Computer Science and Engineering

Date of submission: 10-7-2023

1. **Define a structure data type called time_struct containing three members integer hour, integer minute and integer second . Develop a program that would assign values to the individual members and display the time in the following form: 16:40:51**

```c
#include<stdio.h>
struct st{
int hour,min,sec;
};
int main()
{
   struct st time={16,40,51};
   printf("%d:%d:%d",time.hour,time.min,time.sec);


}
```



```
16:40:51
Process returned 0 (0x0)    execution time : 0.016 s
Press any key to continue.
```

2. **Modify the above program such that a function is used to input values to the members and another function to display the time.**

```c
#include<stdio.h>

struct st{

int hour,min,sec;

};

int main()

{

   struct st time;

   printf("Enter timezone in hour:\n");

   scanf("%d",&time.hour);

   printf("Enter timezone in minute:\n");
```
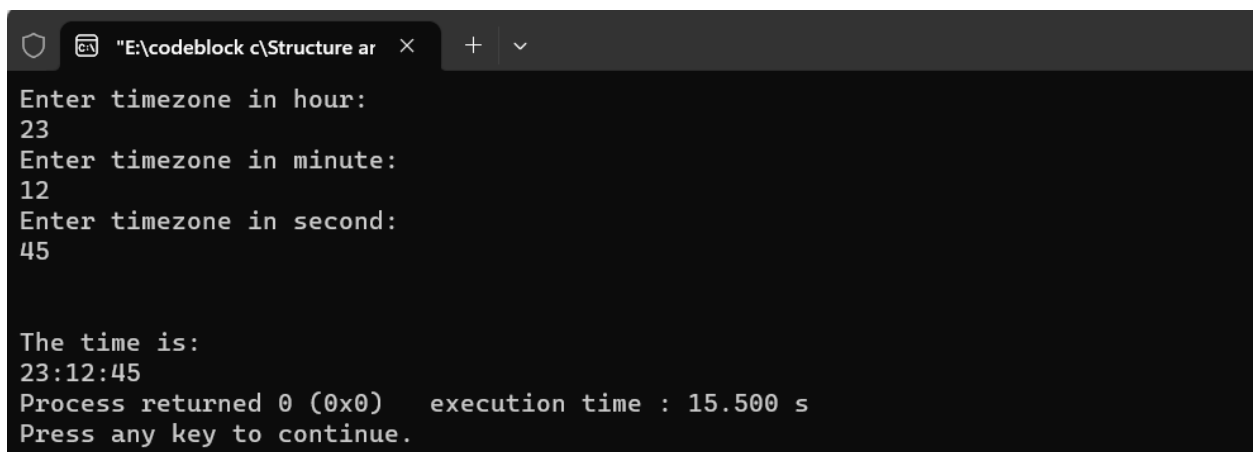
```c
    scanf("%d",&time.min);
    printf("Enter timezone in second:\n");
    scanf("%d",&time.sec);
    printf("\n\nThe time is:\n");
    printf("%d:%d:%d",time.hour,time.min,time.sec);



}
```



```
"E:\codeblock c\Structure ar    X    +    v

Enter timezone in hour:
23
Enter timezone in minute:
12
Enter timezone in second:
45


The time is:
23:12:45
Process returned 0 (0x0)    execution time : 15.500 s
Press any key to continue.
```

3.

```c
#include<stdio.h>
struct st{
int hour,min,sec;
};
int main()
{
    struct st time;
    printf("Enter timezone in hour:\n");
    scanf("%d",&time.hour);
    printf("Enter timezone in minute:\n");
```

```c
    scanf("%d",&time.min);
    printf("Enter timezone in second:\n");
    scanf("%d",&time.sec);
    struc(time.hour,time.min,time.sec);


}
void struc(int a,int b,int c){
    int h,m,s;
    h=a+1;
    m=b+1;
    s=c+1;
    if(h==24)
        h=0;
    if(m==60)
    {
        m=0;
        h++;
    }
    if(s==60)
    {
        m++;
        s=0;
    }
    printf("\n\nThe time is:\n");
    printf("%d:%d:%d",h,m,s);
}
```

```
Enter timezone in hour:
12
Enter timezone in minute:
59
Enter timezone in second:
59


The time is:
14:1:0
Process returned 0 (0x0)    execution time : 9.230 s
Press any key to continue.
```

4. Date Code

```c
#include<stdio.h>

struct st{

int year,mon,day;

};

int main()

{

    struct st date;

    printf("Enter Date :\n");

    scanf("%d",&date.day);

    printf("Enter Month number:\n");

    scanf("%d",&date.mon);

    printf("Enter Year:\n");

    scanf("%d",&date.year);

    struc(date.day,date.mon,date.year);


}

void struc(int a,int b,int c){


    if(b==2||b==4||b==8||b==10||b==12)

    {if(a==31)

    {

        printf("Not a valid date");
```
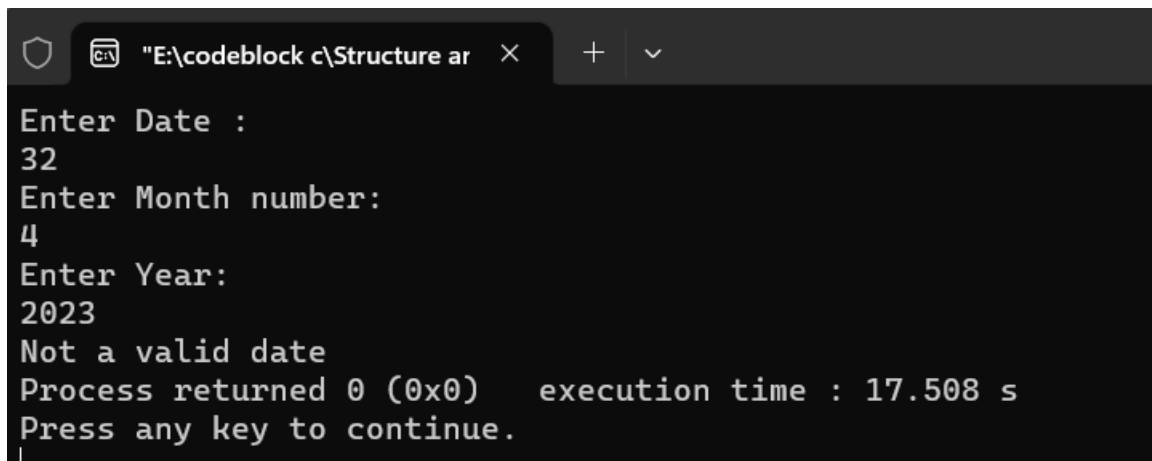
```c
        return;

    }

    }

    if(b>12 || a>31 || c<999)

    {

        printf("Not a valid date");

        return;

    }

        printf("The date is: %d-%d-%d",a,b,c);

}
```

```
"E:\codeblock c\Structure ar    ×    +    ∨

Enter Date :
32
Enter Month number:
4
Enter Year:
2023
Not a valid date
Process returned 0 (0x0)    execution time : 17.508 s
Press any key to continue.
```

5.

```c
#include<stdio.h>

struct cricket{

char name[100];

char Tname[100];

float avg;

};
```

```c
int main()
{
    int n;
    printf("Enter Player number:\n");
    scanf("%d",&n);
    struct cricket person[50];
    for(int i=0;i<n;i++)
    {
        printf("Enter Player %d name:\n",i+1);
        scanf("%s",person[i].name);
        printf("Enter Team %d name:\n",i+1);
        scanf("%s",person[i].Tname);
        printf("Enter Player %d Average:\n",i+1);
        scanf("%f",&person[i].avg);

    }
    for(int i=0;i<n;i++)
    {
        printf("Player %d name: %s\n",i+1,person[i].name);

        printf("Team %d name: %s\n",i+1,person[i].Tname);

        printf("Player %d Average: %0.2f\n\n",i+1,person[i].avg);

    }

}
```

```
Enter Player number:
2
Enter Player 1 name:
Noushad
Enter Team 1 name:
Bangladesh
Enter Player 1 Average:
79.2
Enter Player 2 name:
Rana
Enter Team 2 name:
India
Enter Player 2 Average:
57.88
Player 1 name: Noushad
Team 1 name: Bangladesh
Player 1 Average: 79.20

Player 2 name: Rana
Team 2 name: India
Player 2 Average: 57.88


Process returned 0 (0x0)   execution time : 37.297 s
Press any key to continue.
```

6. Size of Union and Structure

#include<stdio.h>

struct st{

int n;

float x;

double y;

char z[10];

};

union un{

int a;

float b;

double c;

char d[10];
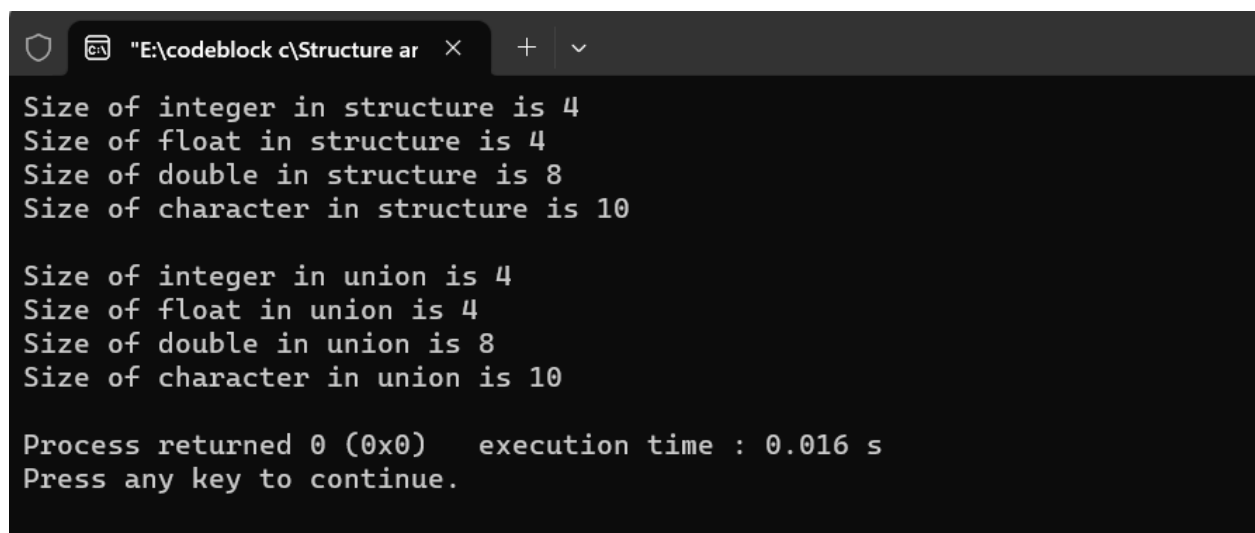
};

int main()

{

    struct st s;

```c
  union un u;
  printf("Size of integer in structure is %d\n",sizeof(s.n));
  printf("Size of float in structure is %d\n",sizeof(s.x));
  printf("Size of double in structure is %d\n",sizeof(s.y));
  printf("Size of character in structure is %d\n\n",sizeof(s.z));


  printf("Size of integer in union is %d\n",sizeof(u.a));
  printf("Size of float in union is %d\n",sizeof(u.b));
  printf("Size of double in union is %d\n",sizeof(u.c));
  printf("Size of character in union is %d\n",sizeof(u.d));
}
```



```
Size of integer in structure is 4
Size of float in structure is 4
Size of double in structure is 8
Size of character in structure is 10

Size of integer in union is 4
Size of float in union is 4
Size of double in union is 8
Size of character in union is 10

Process returned 0 (0x0)    execution time : 0.016 s
Press any key to continue.
```

7. String transfer in a file
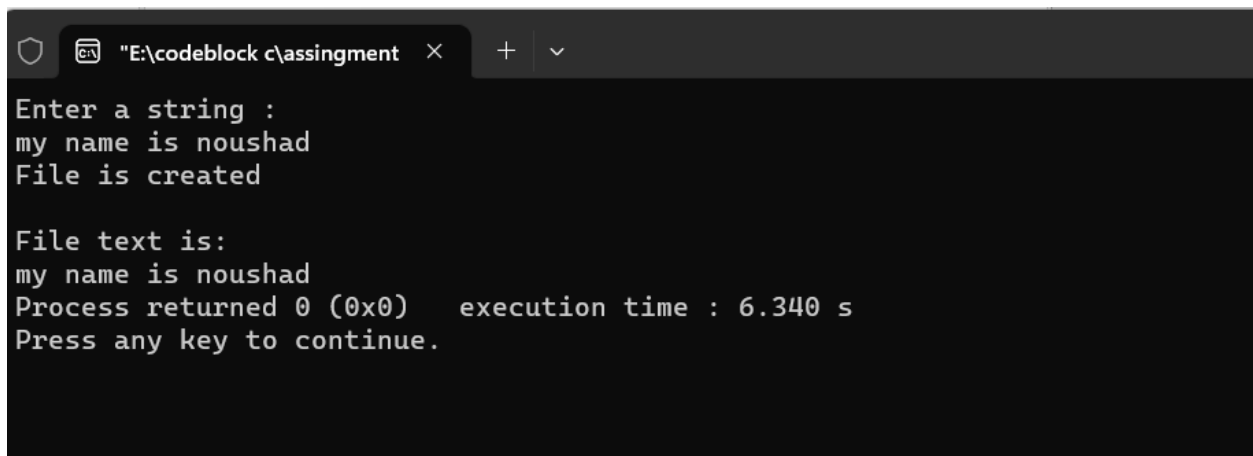
```c
#include<stdio.h>
int main()
{
  char a[100];
```

```c
printf("Enter a string :\n");

gets(a);

int n=strlen(a),i;

FILE *f1;

f1=fopen("Text.txt","a");

if(f1==NULL)

    printf("The file is not created.");

else

    {

        printf("File is created\n");

    for(i=0;i<=n;i++)

    {

    fputc(a[i],f1);

}

    printf("\nFile text is %s",a);

    }

    fclose(f1);


}
```

Enter a string :
my name is noushad
File is created

File text is:
my name is noushad
Process returned 0 (0x0)   execution time : 6.340 s
Press any key to continue.

8. File example in coding in c

```c
#include<stdio.h>
int main()
{
    char a[100];
    printf("Enter a string :\n");
    gets(a);
    FILE *arr;
    arr=fopen("text.txt","a");
    if(arr==NULL)
    {
        printf("file doesnot exist");
    }
    else{
        printf("File is opened\n");
        fputs(a,arr);
        fputs("\n",arr);
        //printf("%s",arr);
    }


}
```

9. Adding a array to file

```c
#include<stdio.h>
int main()
{
    int a;
    printf("Enter a string :\n");
    //gets(a);
    FILE *arr;
    arr=fopen("text.txt","a");
    if(arr==NULL)
    {
        printf("file doesnot exist");
    }
    else{
        printf("File is opened\n");
        for(int i=0;i<3;i++)
        {
            scanf("%d",&a);
            fprintf(arr,"%d \n",a);
```

```
          }

fclose(arr);
    }


}
```

10.   Even Odd number in file

```c
#include<stdio.h>
int main()
{
    int a[100],n;
    printf("Enter array size:\n");
    scanf("%d",&n);
    //printf("Enter a string :\n");
    //gets(a);
    FILE *arr,*odd,*even;
    arr=fopen("text.txt","w");
    even=fopen("text.txt","w");
        odd=fopen("text.txt","w");

    arr=fopen("text.txt","r");
    even=fopen("text.txt","r");
        odd=fopen("text.txt","r");
    if(arr==NULL)
    {
        printf("file doesnot exist");
    }
    else{
        printf("File is opened\n");
//    fprintf("The Datas are:\n");
        for(int i=0;i<n;i++)
        {
            printf("Enter data %d\n",i+1);
            scanf("%d",&a[i]);



        }

        printf("\nAll numbers are:\n");
```

```c
        for(int i=0;i<n;i++)
        {
            fscanf(arr,"%d",&a[i]);
            printf("%d ",a[i]);

        }
        printf("\nOdd numbers are:\n");
        for(int i=0;i<n;i++)
        {
            int j=1;


            if(a[i]%2==1){

                fprintf(odd,"Odd Data = %d\n",a[i]);
                fscanf(odd,"%d",&a[i]);
                printf("%d ",a[i]);

            }

        }
        printf("\nEven numbers are:\n");
        for(int i=0;i<n;i++)
        {

            if(a[i]%2==0){

                fprintf(even,"Even Data = %d\n",a[i]);
                fscanf(even,"%d",&a[i]);
                printf("%d ",a[i]);

            }
        }
    fclose(arr);
    fclose(even);
    fclose(odd);
    }
}
```

```
Enter data 1
1
Enter data 2
2
Enter data 3
3
Enter data 4
4
Enter data 5
5
Enter data 6
6
Enter data 7
7
Enter data 8
8
Enter data 9
9
Enter data 10
10

All numbers are:
1 2 3 4 5 6 7 8 9 10
Odd numbers are:
1 3 5 7 9
Even numbers are:
2 4 6 8 10
Process returned 0 (0x0)   execution time : 8.616 s
Press any key to continue.
```