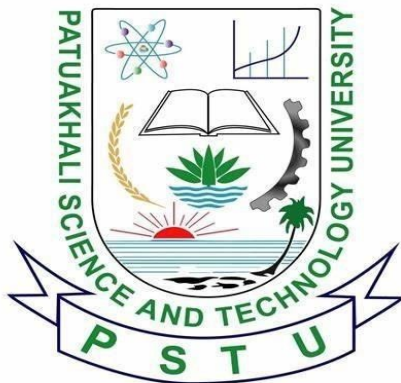# PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY

Course Code: CIT-112

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Date of submission: 20-7-2023

1. Using of a character array

```c
#include<stdio.h>
int main()
{
   char a[]="Noushad";
   int i=0;
   while(a[i]!='\0');
   {
     printf("%c",a[i]);
     printf("\n");
     i++;
   }
}
```

2. Vowel or consonant

```c
#include<stdio.h>
int main()
{
   char a[100];
   printf("Enter your text: ");
   gets(a);
   int vowel=0,consonent=0,i=0;
   while(a[i]!='\0')
   {
      {

        if(a[i]=='a' || a[i]=='o' || a[i]=='i' || a[i]=='e' || a[i]=='u' )
```

```
            vowel++;

       else

          consonent++;

       }

       i++;

    }

    printf("Vowel number are : %d\n",vowel);

    printf("consonent number are : %d\n",consonent);

}
```

3. String swapping

```
#include<stdio.h>

int main()

{

    char a[100]={"my name is noushad"};

    char b[100]={"whats your name"};

    char temp[100];

       printf("%s\n",a);

    printf("%s\n",b);


    strcpy(temp,a);

    strcpy(a,b);

    strcpy(b,temp);

    printf("%s\n",a);

    printf("%s\n",b);


}
```

4. String reverse using strrev function

```c
#include<stdio.h>
int main()
 {
    char a[100];
    printf("Enter String A :");
    gets(a);
    strrev(a);
    printf("%s",a);




 }
```

5. Finding string length

```c
#include<stdio.h>
int main()
{
   char a[100];
   printf("Enter string: ");
   gets(a);
   int len=strlen(a);
   printf("The string Lenght is : %d",len);
}
```

6. Finding stringlength without strlen function

```c
#include<stdio.h>
int main()
{
   char a[1000];
   printf("Enter string: ");
```

```c
    gets(a);
    int i=0,count=0;
    while(a[i]!='\0')
    {
        i++;
        count++;
    }
    printf("%d",count);
}
```

7. Student detail string input

```c
#include<stdio.h>
int main()
{
    char n[100],n1[100],n2[100],n3[100];
    printf("Enter Your full name: ");
    gets(n);
    printf("Enter Your Village name: ");
    gets(n1);
    printf("Enter Your Age: ");
    gets(n2);
    printf("Enter Your University: ");
    gets(n3);
    printf("Full name: %s\n",n);
    printf("Village name: %s\n",n1);
    printf("Age: %s\n",n2);
    printf("University name: %s\n",n3);
```

```c
    getch();
}
```

8. Copy string using strcpy function

```c
#include<stdio.h>
int main()
{
    char b[1000],a[1000];
    printf("Enter string: ");
    gets(a);
    strcpy(b,a);
    printf("%s\n",a);
    printf("%s\n",b);



}
```

9. Compare 2 string using strcmp function

```c
#include<stdio.h>
int main()
{
    char a[100],b[100];
    int d;
    printf("Enter string A: ");
    gets(a);
    printf("Enter string B: ");
    gets(b);
```

```c
      d=strcmp(a,b);
   if(d==0)
   {
      printf("String are equal");
   }
   else if(d==0)
      printf("Words A and B are same.");

   else
      printf("Words A and B are not same");
   return 0;
}
```

10. Using strcat library function

```c
#include<stdio.h>
int main()
{
   char b[1000],a[1000];
   printf("Enter string a: ");
   gets(a);
   printf("Enter string b: ");
   gets(b);

   strcat(a,b);
   printf("%s\n",a);
   printf("%s\n",b);


}
```

11. Example of array

```c
#include<stdio.h>
int main()
{
    int fib,i,a[100],n;
    printf("Enter number of variables: ");
    scanf("%d",&n);
    a[0]=0;
    a[1]=1;
    printf("fibonacci are :\n");
    printf("%d\n",a[0]);
    printf("%d\n",a[1]);
    for(i=2;i<n;i++)
    {
        a[i]=a[i-1]+a[i-2];
        printf("%d\n",a[i]);

    }


    getch();

}
```

12. Array using function

```c
#include<stdio.h>
int maximum(int x[])
{
    int i,max;
```

```c
    max=x[0];
    for(i=0;i<5;i++)
    {
        if(max<x[i])
            max=x[i];
    }
    return max;

}



int main()


{
    int a[]={20,30,40,50,60};
 int maxi =  maximum(a);
    printf("the max value is %d",maxi);


}
```

13. Sum of array

```c
#include<stdio.h>
int main()
{
    int n,a[1000];
    printf("Enter array size:\n");
    scanf("%d",&n);
    for(int i=0;i<n;i++)
    {
```

```c
        printf("Enter %d number value of the array: ",i+1);

        scanf("%d",&a[i]);

    }

    int sum=0;

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

    {

        sum=sum+a[i];

    }

     printf("Sum of the array: %d",sum);

    return 0;


}
```

14. Minimum number in the array

```c
#include<stdio.h>

int main()

{

    int n,a[5],i;

    printf("Enter number of n: ");

    scanf("%d",&n);

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

    {

        printf("Enter numbers: ");

        scanf("%d",&a[i]);

    }

    int min= a[0];

    for(i=1;i<n;i++)
```

```c
    {
      if(min>a[i])
       {
          min=a[i];
       }
    }
  printf("Minimum Number is : %d",min);
}
```

15. Sum of a matrix

```c
#include<stdio.h>
int main()
{
   int n1,n2,a[100][100],i,j,b[100][100],c[100][100];
   printf("Enter raw number: ");
   scanf("%d",&n1);
   printf("Enter colom number: ");
   scanf("%d",&n2);
   printf("Matrix A: \n");


   for(i=0;i<n1;i++)
   {
      for(j=0;j<n2;j++)
      {
         scanf("%d",&a[i][j]);
      }
```

```c
}
printf("MATRIX A = \n");
for(i=0;i<n1;i++)
{
   for(j=0;j<n2;j++)
   {
      printf("A[%d][%d] = %d  ",i,j,a[i][j]);
   }
   printf("\n");
}
//end of matrix a
printf("Matrix B: \n");



for(i=0;i<n1;i++)
{
   for(j=0;j<n2;j++)
   {
      scanf("%d",&b[i][j]);
   }

}
printf("MATRIX B = \n");
for(i=0;i<n1;i++)
{
   for(j=0;j<n2;j++)
   {
```

```c
            printf("B[%d][%d] = %d  ",i,j,b[i][j]);
        }
        printf("\n");
    }
    printf("Matrix A + Matrix B =\n");
    for(i=0;i<n1;i++)
    {
        for(j=0;j<n2;j++)
        {
            c[i][j]=a[i][j]+b[i][j];
            printf("%d  ",c[i][j]);
        }
        printf("\n");
    }
}
```

16. Sum of upper triangle of matrix

```c
#include<stdio.h>
int main()
//The sum of Upper triangle digits
{
    int n1,n2,i,j,a[100][100],sum=0;
    printf("Enter raw number : ");
    scanf("%d",&n1);
    printf("Enter columb number : ");
    scanf("%d",&n2);
    for(i=0;i<n1;i++)
    {
```

```c
        for(j=0;j<n2;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
    printf("Matrix A:\n");
    for(i=0;i<n1;i++)
    {
        for(j=0;j<n2;j++)
        {
            printf("A[%d][%d] = %d  ",i,j,a[i][j]);

        }
        printf("\n");
    }
    for(i=0;i<n1;i++)
    {
        for(j=0;j<n2;j++)
        {
            if(i==j || i<j)
            {
                sum=sum+a[i][j];
            }
        }
    }
    printf("The sum of Upper triangle elements are: %d",sum);

}
```

17. Fibonacci number

```c
#include<stdio.h>
int main()
{

    int sum=0,i,n,a[100];
    printf("Enter n: ");
    scanf("%d",&n);
    a[0]=0;
    a[1]=1;
    printf("%d\n",a[0]);
    printf("%d\n",a[1]);
    for(i=2;i<n;i++)
    {
        a[i]=a[i-1]+a[i-2];
        printf("%d\n",a[i]);
    }


}
```

18. Sum of lower triangle of a matrix

```c
#include<stdio.h>
int main()
//The sum of lower Triangle digits
{
    int n1,n2,i,j,a[100][100],sum=0;
```

```c
printf("Enter raw number : ");
scanf("%d",&n1);
printf("Enter columb number : ");
scanf("%d",&n2);
for(i=0;i<n1;i++)
{
    for(j=0;j<n2;j++)
    {
        scanf("%d",&a[i][j]);
    }
}
printf("Matrix A:\n");
for(i=0;i<n1;i++)
{
    for(j=0;j<n2;j++)
    {
        printf("A[%d][%d] = %d  ",i,j,a[i][j]);

    }
    printf("\n");
}
for(i=0;i<n1;i++)
{
    for(j=0;j<n2;j++)
    {
        if(i==j || i>j)
        {
            sum=sum+a[i][j];
```

```c
        }
      }
    }
    printf("The sum of lower Triangle elements are: %d",sum);


}
```

19. Matrix substraction

```c
#include<stdio.h>
int main()
{
   int i,j,n1,n2,a[100][100],b[100][100],c[100][100];
   printf("Enter the raw number: ");
   scanf("%d",&n1);
   printf("Enter the columb number: ");
   scanf("%d",&n2);
   for(i=0;i<n1;i++)
   {
      for(j=0;j<n2;j++)
      {
         scanf("%d",&a[i][j]);
      }
   }
   printf("Matrix A:\n");
   for(i=0;i<n1;i++)
   {
      for(j=0;j<n2;j++)
         {printf("A[%d][%d] = %d ",i,j,a[i][j]);
   }
```

```c
        printf("\n");
        }
        //end of matrix a
        for(i=0;i<n1;i++)
        {
            for(j=0;j<n2;j++)
            {
                scanf("%d",&b[i][j]);
            }
        }
        printf("Matrix B:\n");
        for(i=0;i<n1;i++)
        {
            for(j=0;j<n2;j++)
            {
                printf("B[%d][%d] = %d ",i,j,a[i][j]);
            }
        printf("\n");
        }
        //end of matrix b;
        printf("\n\nMatrix A - Matrix B = \n");
        for(i=0;i<n1;i++)
        {
            for(j=0;j<n2;j++)
            {
                c[i][j]= a[i][j]-b[i][j];

                printf("[%d][%d] = %d ",i,j,c[i][j]);
```

```
        }
    printf("\n");
    }
}
```

20.