

❖ FUNDAMENTALS OF DATA STRUCTURE

Strings:

It is data structure include set of elements of char

Ex: char st [10];

The most important function used with string:

- **strlen(st)** return length of string

Ex1: write program to read string and compute the numbers in it.

```
#include<iostream.h>
```

```
#include<string.h>
```

```
void main()
```

```
{char st[100],l;
```

```
cout<<"Enter st: "<<endl;
```

```
cin>>st;
```

```
l=strlen(st);
```

```
int c=0;
```

```
for(int i=0;i<l;i++)
```

```
if((st[i]>='0')&&(st[i]<='9'))
```

```
c++;
```

```
cout<<c; }
```

Structure:

The second built in Data structure is structure. A structure is a group of variables under one name, in which each variable is identified by its own identifier, each of which is known as a member of structure.

General structure declaration statement:

Struct: struct_name

```
{  Char first [10];
    Int  midnit;
    .
    .
    Char last [20];
};
```

Structure or Recorders:

It data structure include malty type of data.

We can define the structure as following:

struct struct - name

```
{
    Data type1  field 1;
    Data type2  field 2;
};
```

EX1:

```
#include<iostream.h>
```

```
Struct s1
```

```
{ int x;
    Char a [10];
};
```

```
Void main ()
```

```
{  s1 st;
```

```
Cin>> st.x >> st.a;  
  
Cout<< st.x << st.a;  
  
}
```

Ex2:- write program to read and print name and average of n students.

```
#include<iostream.h>
```

```
struct student
```

```
{    char name [30];  
  
    int  avarege; };
```

```
Void main ()
```

```
{  int n;  cin>>n;
```

```
    student arr [n];
```

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

```
        cin>>arr[i]. avarege x>>arr[i].name;
```

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

```
        cout<<arr[i]. avarege <<"-"<<arr[i].name<<"\n"; }
```