String and Characters

- •A string in C is defined as an array of characters in a linear sequence.
- •In programming, string constants can be declared within double quotes.

Example: "StringConstant"

 NULL character is used to represent end of the string.

String Declaration

•NULL character is denoted by the escape sequence '\0'.

SYNTAX:

datatype stringname[arraysize] = {val1,val2,...};

Example:

```
Char str1[5] = \{'m', 'o', 'o', 'n', '\setminus 0'\};
```

Char str2[]="Learning";

Fixed length structure

There are 3 types of structures used to store strings as follows,

Fixed length structure Varaiable length structure Linked structure

Fixed length structure

 Strings are placed in consecutive character position.

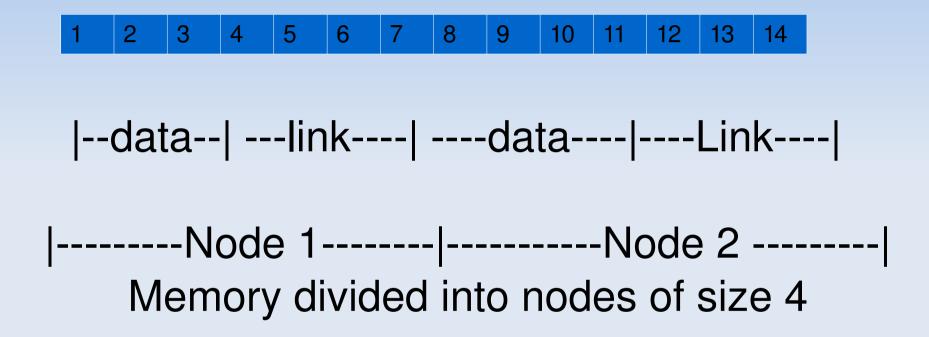
- •Fixed length are allocated to store.
- •Sequential representation of string S=x1,x2,....xn.



Linked Structure

- •The memory size is divided into number of fixed size nodes.
- •A node has two fields. One is data and another is link.
- Data field indicates the size of the node.
- Link has the address of the next node to be linked.

Linked Structure



Note: Deletion of substring is carried out only by replacing all characters in this sunstring b 0.

Input: Read a String

 The function scanf(), gets(), fgets() used to get string as input.

```
#include <stdio.h>
                           Output:
                           You entered: vicky 28
int main()
char name[10];
int age;
printf("Enter your first name and age: \n");
scanf("%s %d", name, &age);
printf("You entered: %s %d",name,age);
```

Input: Read a String

- In scanf() statement, %s format specifier is used to get string input.
- The & symbol is not used along with input variable name.

Note:

•String is an array of characters. Array name itself denotes the base address of the array, where arr_name and &arr_name both are same. Hence, the string name not requires any ampersand before it in scanf. ... Because string already stores the address of its variable.

Gets() function

- This function is used to read a character entered at the keyboard and places its address pointed to by its character pointer argument.
- Characters are entered until the enter key is pressed.

Syntax:

gets(varname);

String Output: write a string

- •Printf() function is used to print a string on output device.
- The format specifier "%s" is used to print.
- •Puts() is also used. This function takes less space than printf() and also fast. Since format conversion no need.

Example:

```
puts(str1);
```