Strings :

String is a collection of characters and enclosed with double quatation is called String.

examples :

"aiml"

"hai"

"aditya university"

In C programming String have no datatype only use char datatype but string hava a control string is '%s'.

declare :

Syntax: char name[size];

example :

char a[10];

initialization:

Syntax 1:

```
char a[5] = "hai";
```

Syntax 2:

```
char a[] = "hai";
```

Syntax 3:

```
char a[5] = {'h','a','i'};
```

Syntax 4:

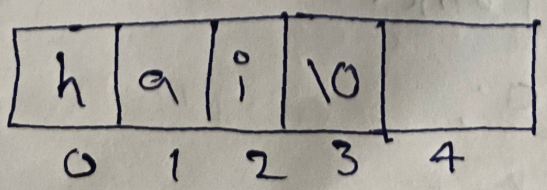
```
char a[] = {'h','a','i'};
```

In String Null character i.e; '\0' adding at the end of String by Compiler

ex:

```
char a[5] = "hai";
```

The String Representation in a Computer is



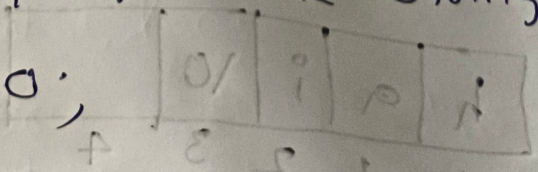
String programs:

1. Write a C program to read and print a string

```
#include<stdio.h>
int main()
{
    char a[5]="hai";
    printf("the String is %s",a);
return 0;
}
```

2.

```
#include<stdio.h>
int main()
{
    char a[100];
    printf("enter a string");
    gets(a);
    printf("The String is %s",
return 0;
}
```



3)
```
#include<stdio.h>
int main()
{
    char a[100];
    printf("enter a sentence.");
    scanf("%[^\n]s", a);
    printf("The String is %s", a);
return 0;
}
```

⇒ String operations without String Handling Functions :-

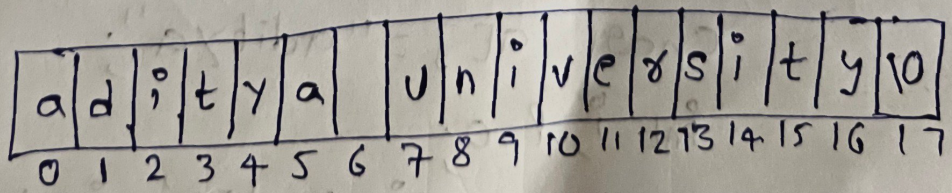
1. String length :-

Find the length of the given String.

example :

char a[] : "aditya university"

The above string length is 17.



Program :-

```
#include<stdio.h>
int main()
{
 char a[]="aditya";
 int i,l=0;
 for(i=0;a[i]!='\0';i++)
  l++;
  printf("The String length is %d",l);
return 0;
}
```

2. String Reverse :-

It is used to Reverse of the given String.

Program :-

```
#include<stdio.h>
int main()
{
 char a[]="aditya";
 int i,l=0;
 for(i=0;a[i]!='\0';i++)
  l++;
```

```
for(i=l-1; i>=0; i--)
 Printf("%c", a[i]);
return 0;
}
```

3. String Concatenation :-

add two strings.

```
#include<string.h>
#include<stdio.h>
int main()
{
    char a[] = "aditya", b[] = "university";
    int i, j, l=0;
    for(i=0; a[i]!='\0'; i++)
     l++;
     for(i=l-1, j=0; j<strlen(b); i++,
                                  j++)

     a[i] = b[j];

     printf("String concateration is %s", a);

 return 0;
}
```

4. String copy :-

Copy string from one string to another string.

Program :-

```
#include<stdio.h>
int main()
{
    char a[]="virat", b[10];
    int i;
    for(i=0; a[i]!='\0'; i++)
      b[i]=a[i];
    Printf("String copy in b is %s",b
return 0;
}
```

2

String Handling Functions :-

The String Handling Functions are used to operation apply on strings

The String Functions are:

1. strlen() - length of the given String
2. strupr() - Converts from lower to upper
3. strlwr() - Converts from higher to lower
4. strcpy() - copy from one to another
5. strcat() - concates or add 2 strings
6. strrev() - reverse of the given String.
7. strcmp() - compare 2 strings

To include string functions in our program by using #include <string.h>

<string.h>

Program :-

```
#include<string.h>
#include<stdio.h>
int main()
{
    char a[]="hai", b[]="HELLO";
printf("String a length is %d", strlen(a));
printf("String b Reverse is %s", strrev(b));
printf("String b in Lowercase %s", strlwr(b));
Printf("string a in uppercase %s", strupr(a));
Printf("string copy from b to a %s",
                    strcpy(a, b));
Printf("Strins concat %s", strcat(a, b));
return 0; Printf("String compr %d", strcmp(a, b));
```