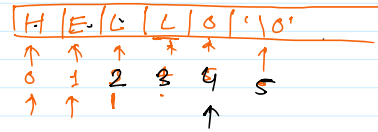


Programs based on strings

1. C program to reverse any string.

char str[] = "HELLO"; length 5, size 6 bytes

OLLEH



Option 1: Just print string in reverse order

printf("%s", str); ⇒ HELLO

```
for (int i = 4; i >= 0; i--)
    printf("%c", str[i]);
```

4 3 2 1 0

```

i=4  4>=0 True  str[4]  O
i=3  3>=0 True  str[3]  L
i=2  2>=0 True  str[2]  L
i=1  1>=0 True  str[1]  E
i=0  0>=0 True  str[0]  H
i=-1 -1>=0 FALSE

```

~~HELLO~~ OLLEH

printf("%s", str); ⇒ HELLO

Option 2: Reverse string in memory itself (Modify original string)

char str[] = "HELLO";

```

int len = strlen(str); // 5
int j = len - 1;
for (int i = 0; i < len/2; i++)

```

// j = 4

// i=0, j=4

```

    char ch = str[i];
    str[i] = str[j];
    str[j] = ch;
    j--;
}

```

Swapping using 3rd variable

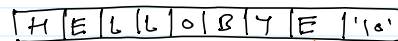
ch [H]



1st O E L L H '\0'

2nd O L L E H '\0'

In case of 5 length 2 iteration



1st E E L L O B Y H

2nd E L L O B E H

3rd E Y B L O L E H

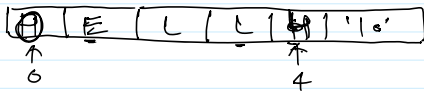
4th E Y B O L L E H

In case of length 8 4 iteration

No. of iterations = len/2

5/2 = 2/5 2

8/2 = 4



i=0 i < 5/2 i < 2 (0, 1)

printf("%s", str); // OLLEH