

C Language

Strings



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Agenda

- ① String Introduction
- ② null character
- ③ User input

String

- String is a sequence of characters, terminated at null character.
- Strings are handled in char arrays.

```
char str[10];
```

Initializing char array during declaration

```
int main()
```

```
{
```

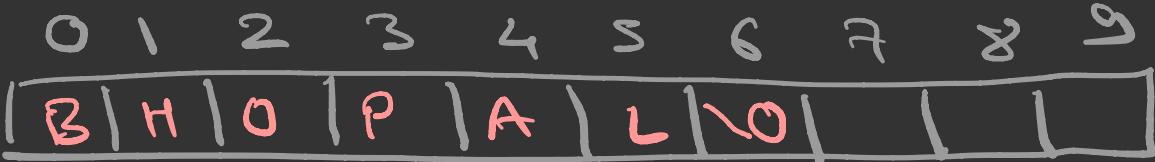
```
char str[10] = { 'B', 'H', 'O', 'P', 'A', 'L', 'H', 'O', ' ', ' '};
```

```
int i;
```

```
for(i=0; i<=9; i++)
```

```
printf("%c", str[i]);
```

```
}
```



ASCII
Character ASCII
code

null → \0	0
' '	32
'0'	48
'A'	65
'a'	97

ASCII

characters codes screen

'\0'	0	Blank space
' '	32	
'G'	48	
'g'	57	
'@'	64	
'A'	65	A
'B'	66	B
'Z'	90	
'a'	97	

Printing String

0 1 2 3 4 5 6 7 8 9

B H O P A L O O O O

```
int main()
```

```
{
```

```
char str[10] = { 'B', 'H', 'O', 'P', 'A', 'L', 'O' };
```

```
int i;
```

str[i] != '\0'

```
for (i=0; i<=5; i++)
```

```
printf("%c", str[i]);
```

```
return 0;
```

```
}
```

Use of null character

```
int main()
```

```
{
```

```
    char str[10] = { 'B', 'H', 'O', 'P', 'A', 'L', '\0' };
```

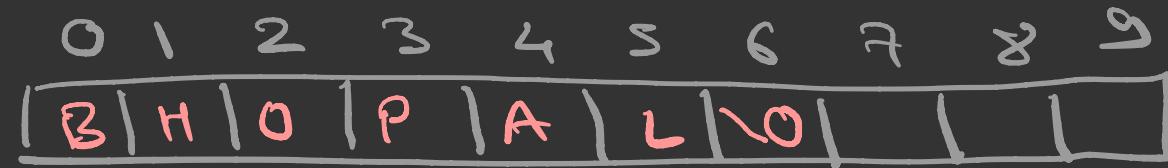
```
    int i;
```

```
    for (i=0; str[i]; i++)
```

```
        printf("%c", str[i]);
```

```
    return 0;
```

```
}
```



Improve your code

```
int main()
```

```
{
```

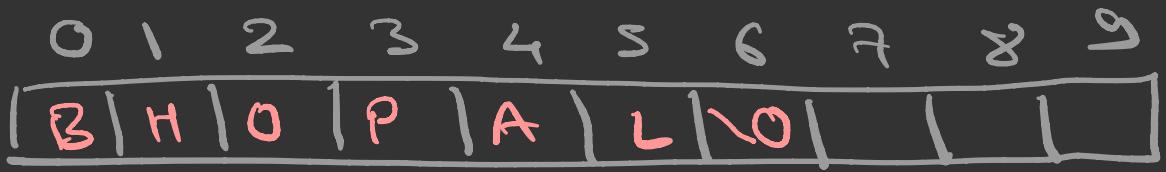
```
    char str[10] = { 'B', 'H', 'O', 'P', 'A', 'L', 'H', 'O', ' ', ' '};
```

```
    printf("%s", str);
```

↑ only name of array

format
specifier for
string

```
}
```



%S

int main()

{

char str[10] = { 'B', 'H', 'O', 'P', 'A', 'L' };

printf("%s", str);

char str[10] = "BHOPAL";

}

Calculating length of the String

```
int main()
```

```
{
```

```
char str[10] = "BHOPAL";
```

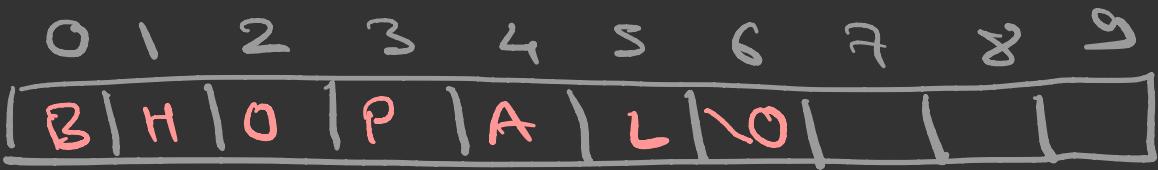
```
int i;
```

```
for (i=0; str[i]; (++)) ;
```

```
printf ("Length = %d", i);
```

```
return 0;
```

```
}
```



String Constant

"BHOPAL" ← String Constant
String Literal

Input from User

```
int main()
{
    char str[20];
    printf("Enter Your name");
    scanf("%s", str);
    printf("%s", str);
    return 0;
}
```

Run-1
Enter your name Amit
Amit

Run-2
Enter your name Amit Sh
arma
Amit

Scanf()

- scanf uses delimiters to separate input data
- By default delimiters are
 - space
 - tab space
 - new line character

"Saurabh Shukla"
↑
space

- scanf is not capable to input multiword string

Taking input from User

- `scanf` is not capable to input `scanf()` multiword string
- because space, tab, new line characters are delimiters
- we will not use `scanf` for string input

`gets()`

- `gets()` is capable to input multiword string

Input from User

```
int main()
{
    char str[20];
    printf("Enter your name");
    gets(str);
    printf("%s",str);
    return 0;
}
```

① Enter your name Amit
Amit

② Enter your name Amit
Sharma
Amit Sharma

gets()

only for strings

one string at a time

scanf()

multiple values

MySirG Education

Services Private Limited

↑
unreliable

fgets()

fgets(arrayname , inputsize , stdin)

Input From User

```
int main()
{
    char str[20];
    printf("Enter your name");
    fgets(str, 20, stdin);
    printf("%s", str);
    return 0;
}
```

① Enter your name Amit
Amit

② Enter your name Amit
Sharma
Amit