

ED1021 - Introduction to computation and visualisation

L9 - Characters and character arrays in C

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Course web page: <https://ed.iitm.ac.in/~raman/introcomp.html>

Moodle page: Available at <https://courses.iitm.ac.in/>

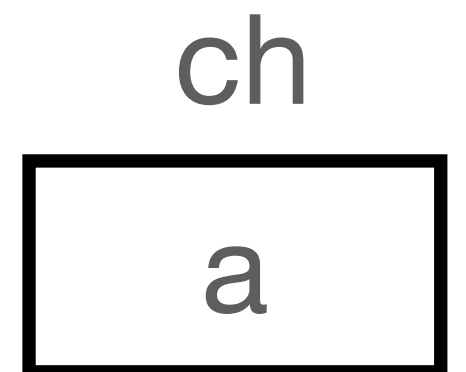
When are they used

- What are the datatypes we have seen so far?
- All variables need to be declared as a particular datatype
- We will see how to represent or take characters (letters).

Declaring an array variable

- `char ch;`
 - `ch` is a variable of character type, i.e., it can take only characters / letters.
 - `ch = 'a';` (single straight quotes, not ```, `“`)
 - format specifier to be used is `%c`

ch
a

A diagram illustrating the memory state of a character variable. The label 'ch' is positioned above a rectangular box. Inside the box, the character 'a' is displayed, representing the value stored in the memory location pointed to by the variable 'ch'.

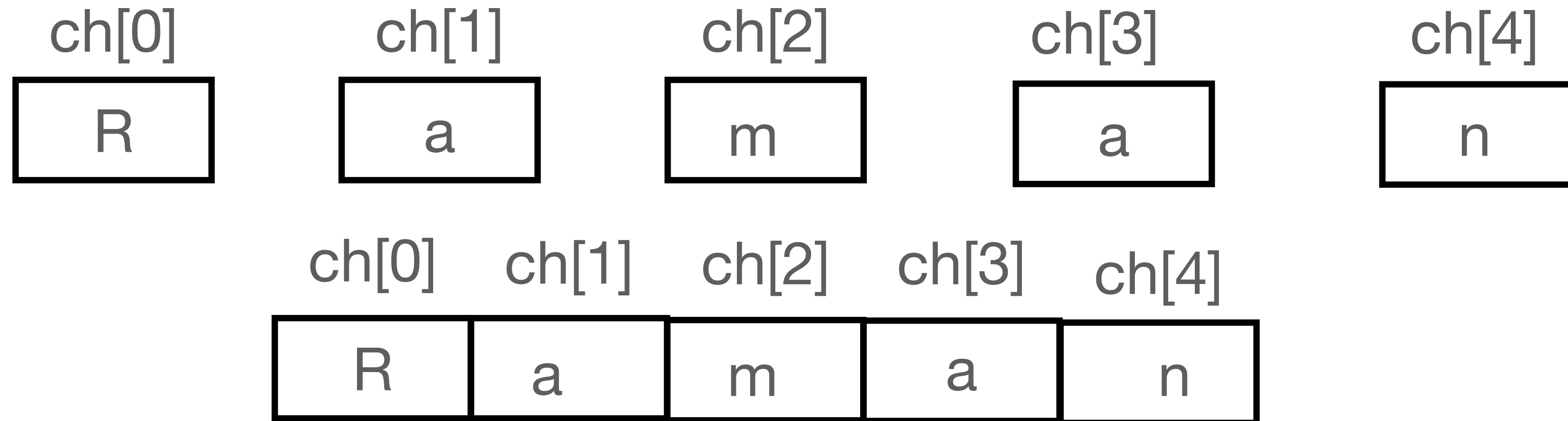
Example program

```
#include <stdio.h>

int main( )
{
    char ch;
    scanf("%c", &ch);
    printf("%d\n", ch);
}
```

character array or array of characters

- `char name[5];`
 - name is an array variable which can take only characters.
 - starting value for array subscript is 0 and end is one less than its size.



Example program

```
#include <stdio.h>
```

```
int main( )
```

```
{
```

```
    char name[5], name1[] = {'a', 'e'};
```

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

```
        scanf("%c", &name[i]);
```

```
        printf("%c\n", name[i]);
```

```
    }
```

```
    for (i =0; i < 2; i++) {
```

```
        printf("%c\n", name1[i]);
```

```
    }
```

```
}
```

Processing character arrays

checking for vowel, consonant etc.

```
#include <stdio.h>
```

```
int main( )
```

```
{
```

```
    int i;
```

```
    float a[5], b[5], c[5];
```

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

```
        scanf("%d %d", &a[i], &b[i]);
```

```
        c[i] = a[i] + b[i];
```

```
        printf("%d\n", c[i]);
```

```
    }
```

```
}
```

HWs

- 1) Print an integer as long as the input character is 'y'.
- 2) Use characters in switch-case statement as 'cases'.
- 3) Find out more on ASCII values