

Higher School of Applied Sciences of Tlemcen
1-year computer science course



Arrays in C

Part 2

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Part 2

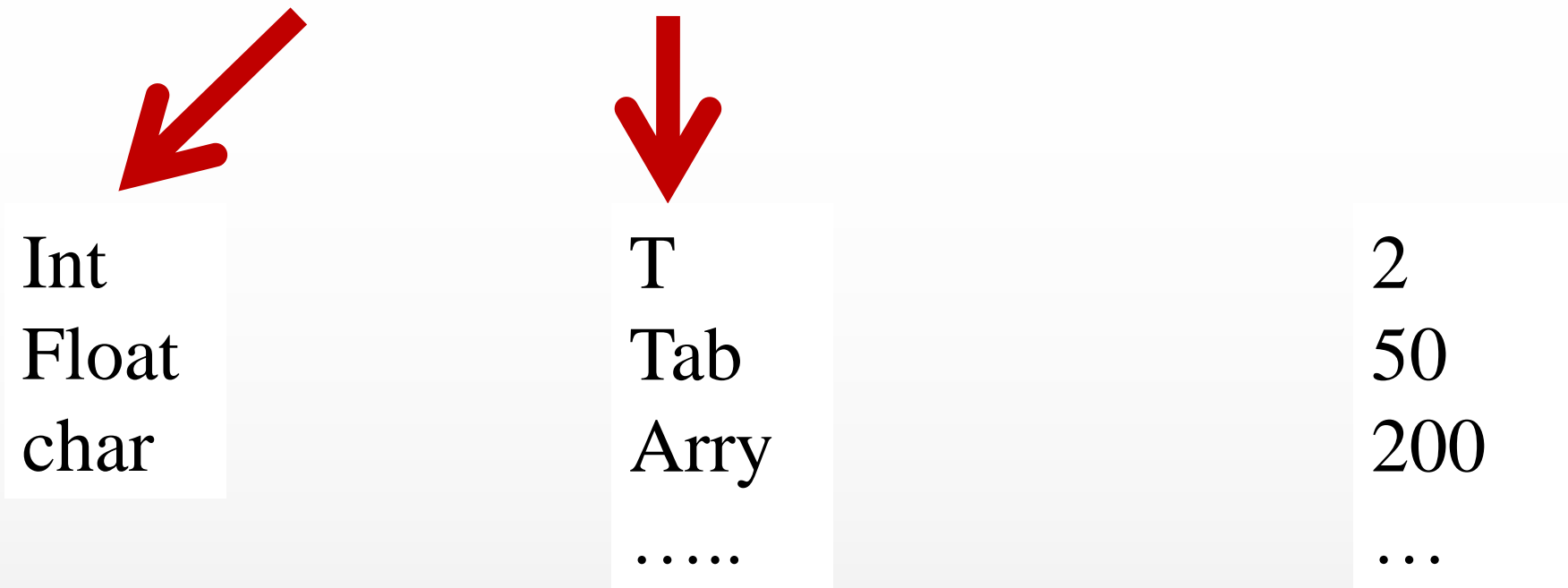
Character Array & String

Character Array

Character Array

Declaration

Type Name_of_the_array [Number of elements]



char name [10];

Character Array

Initialize the elements

```
Char name[]={ 'A', 'h', 'm', 'e', 'd' }
```

```
Char name[5]={ 'A', 'h', 'm', 'e', 'd' }
```

Character Array

Manipulate the elements

You can treat an array element (identified by the array name and its index) in the same way as a variable, allowing you to perform operations on array elements

name	'A'	'h'	'm'	'e'	'd'
	0	1	2	3	4

```
name[1] = 'h';
```

```
name[4] = 'd';
```

Character Array

Reading a character array

```
for ( i = 0 ; i < N ; i++ ) {  
    tmp = getchar();  
  
    while (tmp == '\n')  
    {tmp = getchar();}  
  
    name[i] = tmp;  }
```

Character Array

Writing a character array

```
for (i=0; i<N; i++)  
{printf("%c ", name[i]);}
```

1

```
for (i=0; i<N; i++)  
{printf("name [%d]= %c", i, name[i]);}
```

2

Character Array

Exercise

Create a program that accomplishes the following tasks:

- Reads and displays your first name.

- Calculates and displays the number of times the letter 'A' appears.



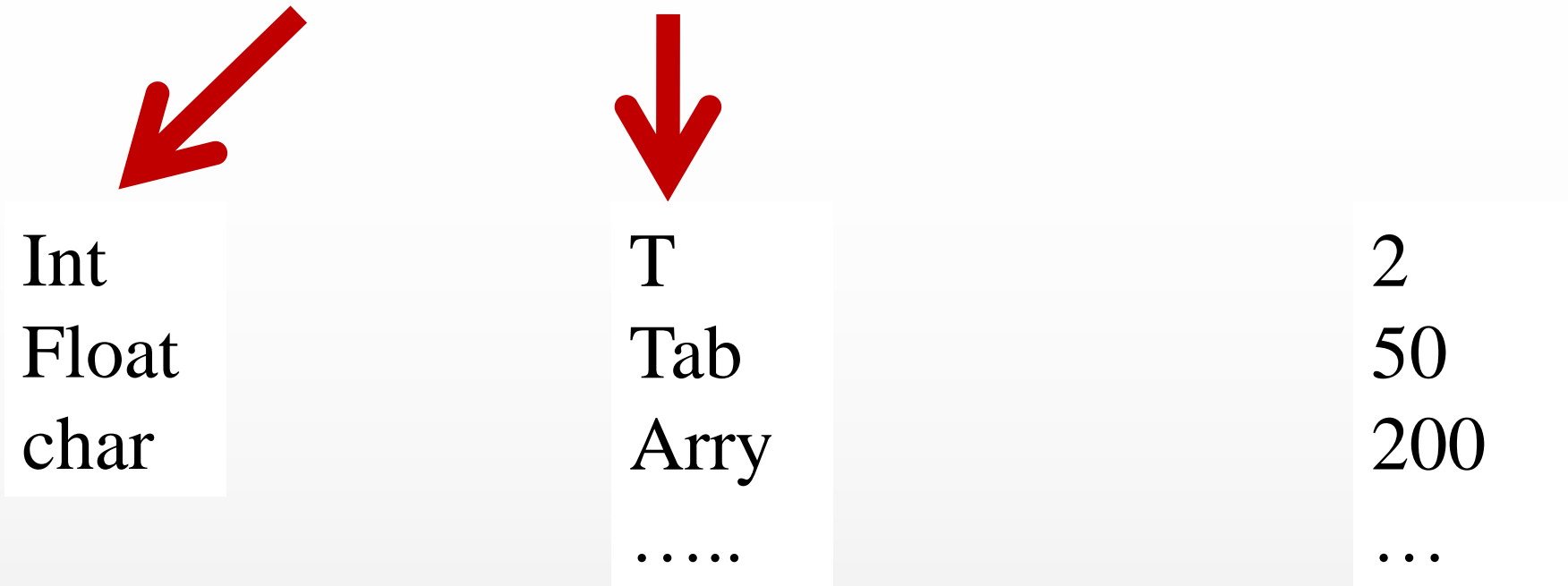
**T
E
X
T**

String

String

Declaration

Type Name_of_the_array [Number of elements]



char name [10];

String

Initialiser les éléments

```
Char name[]={ 'A', 'h', 'm', 'e', 'd', '\0' }
```

```
Char name[5]={ 'A', 'h', 'm', 'e', 'd', '\0' }
```

```
Char name[5]="Ahmed "
```

```
Char name[]=" Ahmed "
```

String

Manipulate the elements

You can treat an array element (identified by the array name and its index) in the same way as a variable, allowing you to perform operations on array elements.

name	'A'	'h'	'm'	'e'	'd'	'\0'
	0	1	2	3	4	5

```
name[1] = 'h';
```

```
name[4] = 'd';
```

```
name[5] = '\0';
```

String

Reading

If the word does not contain any spaces

scanf ("%s", name)

Exemple: Ahmed

If the word contains spaces

get (name)

Exemple: Ahmed yassine

String

Writing

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


String

Code ASCII

A->65

a->97

B->66

b->98

C->67

c->99

```
printf("%d ", 'A');
```

```
printf("%d ", '?');
```

String

Code ASCII

Letter

ASCII Code

Letter

ASCII Code

a

97

A

65

b

98

B

66

c

99

C

67

d

100

D

68

e

101

E

69

f

102

F

70

g

103

G

71

h

104

H

72

i

105

I

73

j

106

J

74

k

107

K

75

l

108

L

76

m

109

M

77

n

110

N

78

o

111

O

79

String

Code ASCII

Letter	ASCII Code	Letter	ASCII Code
p	112	P	80
q	113	Q	81
r	114	R	82
s	115	S	83
t	116	T	84
u	117	U	85
v	118	V	86
w	119	W	87
x	120	X	88
y	121	Y	89
z	122	Z	90

String

Code ASCII

'A'+ 32 → 'a'

'B'+ 32 → 'b'

'A'+ 40 → 'i'


String

Exercice

`char a[] = "un\ndeux\ntrois\n";` 

`char b[] = "un deux trois";` 

`char c[] = 'un deux trois';` 

`char d[5] = "cinq";` 

`char e[] = "Cette " "phrase" "est coupée";` 

Exercise 2

Create a program that accomplishes the following tasks:

- Reads and displays your full name as a single variable.
- Counts the total number of letters in your full name.
- Calculates the number of occurrences of the letter 'A' in your full name.