



→ 1972 : Bell Labs

Thompson } UNIX
Ritchie }

→ Kernighan + Ritchie

↳ The C Programming Language >> (1978)

→ classic C

→ ANSI C = (89)

→ C99

→ C11

gcc
(GNU C Compiler)

gcc hello.c

gcc -Wall --pedantic hello.c

hello.c

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

```
void main() {
```

```
    [int n, i;
```

```
    [printf("Quante volte? ");
```

```
    scanf("%d", &n);
```

```
    for([i=0; i<n; i++])
```

```
        printf("Ciao\n");
```

```
}  
↙
```

```
$> gcc hello.c -o hello
```

```
$> ./hello
```

~~var~~ n, i (cat)

SYNTACTIC SUGAR

1) ; **OBBLIGATORI** alla fine di ogni istruz. elem. /
dichiarative

2) In HA LO STESSO VALORE
di \wedge, \vee

3) IL CORPO DEI COSTRUTTI
NON HA } SE
È COSTITUITO DA
UNA SOLA ISTRUZ.
{ }

```
for (x=0; x<n; x++) {  
    if (x%2 == 0)  
        printf("%d\n", x);  
    printf("Ho aulizab %d\n", x);  
}
```

STRUCTURE vs CONTRAST

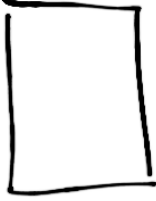
```
if { cond }  
    ...  
{ else }  
    ...  
}
```

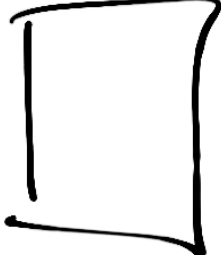
```
if (cond)  
    ...  
else  
    ...
```


```
for (A; B; C) {  
    ...  
}
```

```
for (A; B; C)  
    ...
```

switch {sel} }

case ... : 

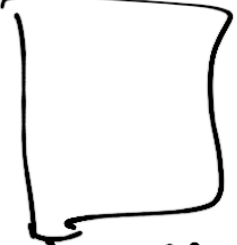
case ... : 

...
default : 

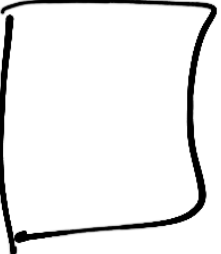
}

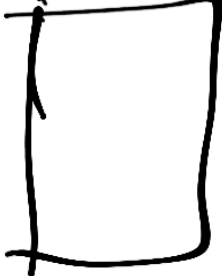
switch senza
selettori

switch (sel) { ^{TIP: SQUARE} }

case ... : 
break;

↳ COSTANTI

case ... : 
break;

...
default : 

}

→ NON ESISTE

ITERAZIONI IN C

OLTRE AL
for TERNARIO

```
- while (cond)  
    ....
```

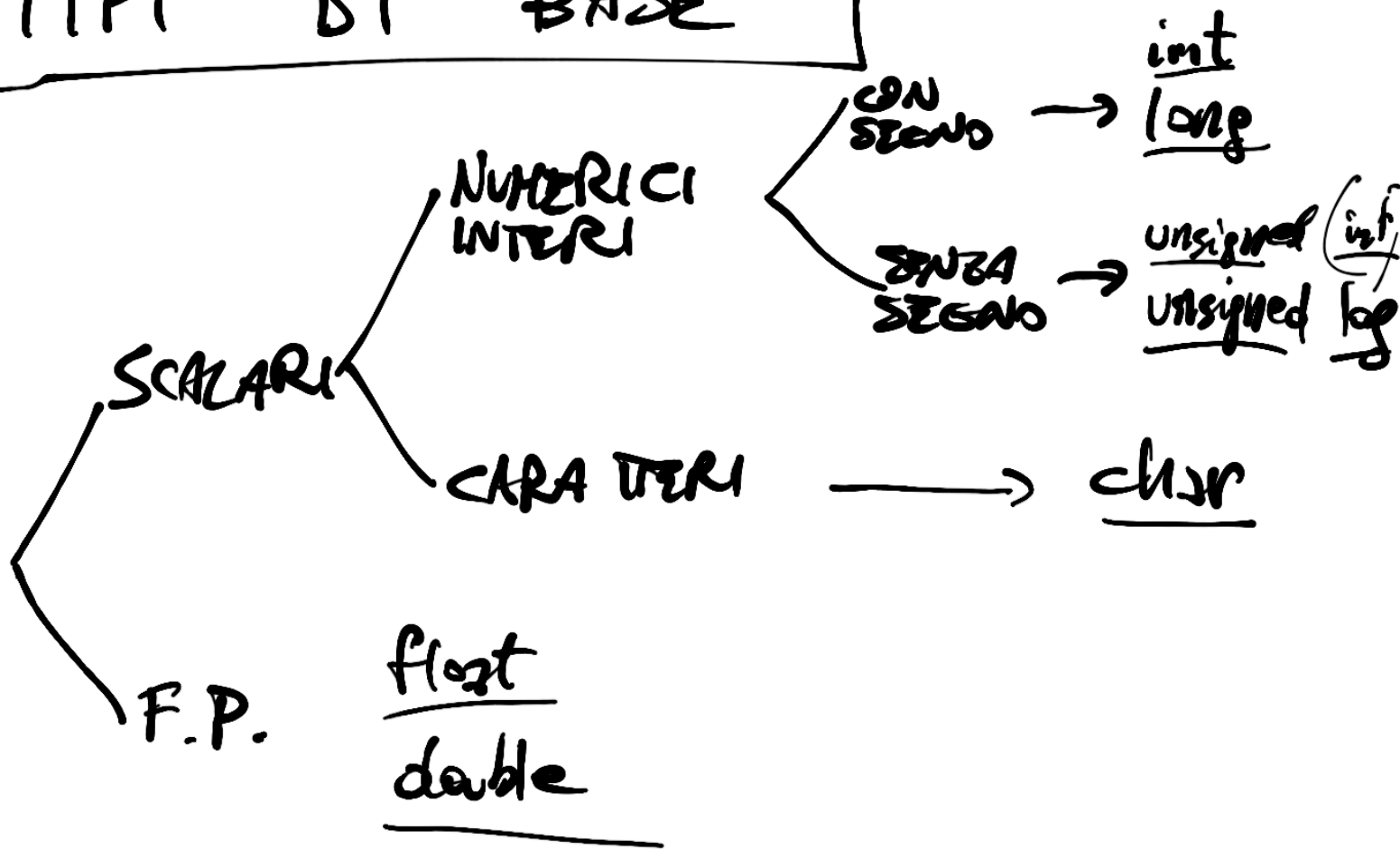
```
- for (cond) {  
    ....  
}
```

```
- do {  
    ....  
} while (cond)
```



sempre eseguito
almeno una
volta

TIPICI DI BASE



NO bool → se usano gli interi = 0 FALSE ≠ 0 TRUE

NO string → GROSSO PROBLEMA

for (i=0; i<n; i++)
if (i%2 || !i)
printf("%d\n", i);

if i%2 != 0 || i == 0

IMPORTATION vs. INCLUSION

PRE-COMPILE 



COMPILE



LINKING 

PRE-COMPILAZIONE

#include <stdio.h>
HEADER
FILE

contiene le dichiarazioni
delle funzioni

- NOMI
- SEGNAURA

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

```
void main () {
```

```
    printf("Ciao");
```

```
}
```

```
...  
int printf(const char *, ...);  
...
```

```
void main () {
```

```
    printf("Ciao");
```

```
}
```

