



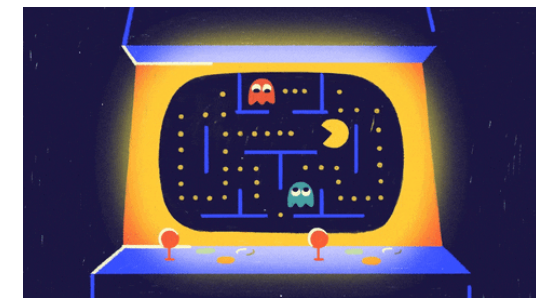
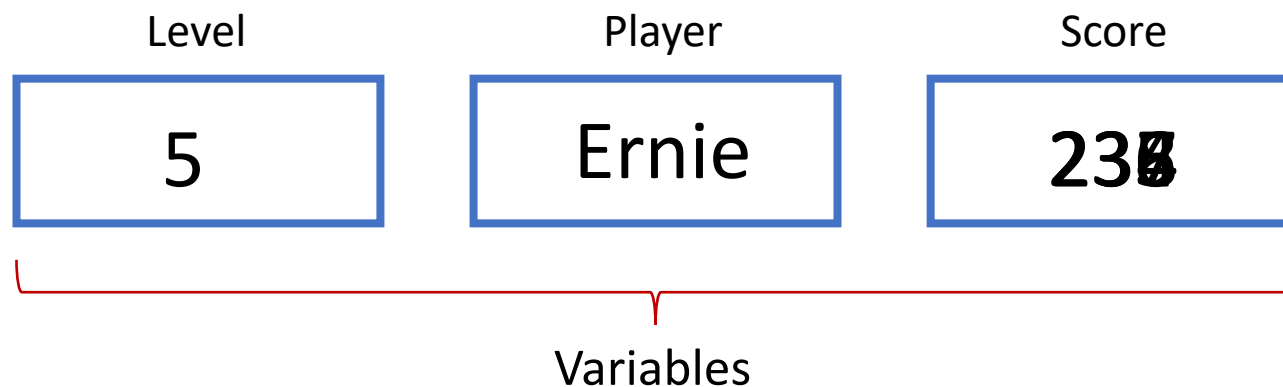
Fundamental Coding with C

Variables and Types



Variables and Types

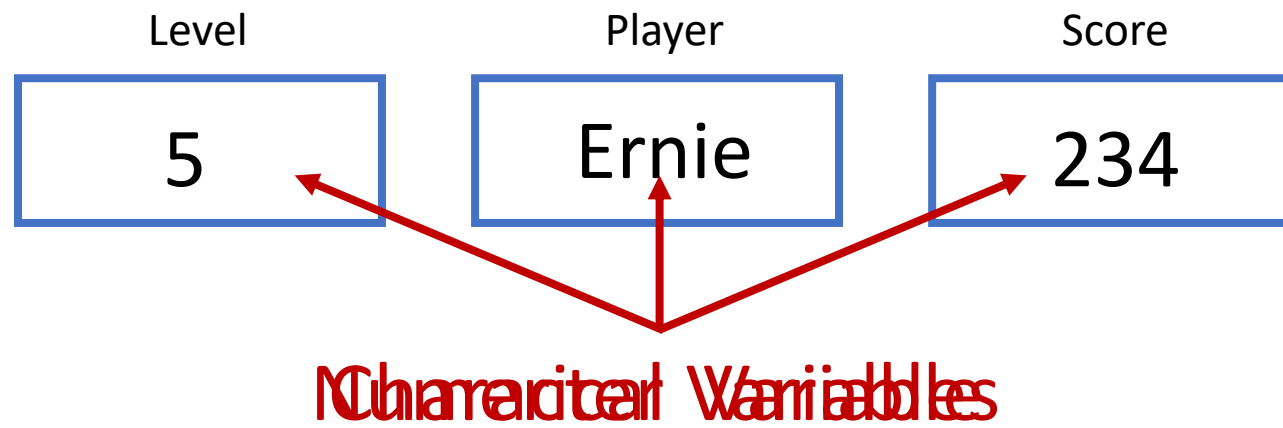
- A **variable** is a piece of information in a program that we want to store, but is able to change.
- We can compare it to a box in which we put information.
- This information could be a number, and during the program we might change the initial number (for example as part of the scoring system in a game).





Variables and Types

A data **type** specifies which kind of value a variable has and what type of operations can be applied to it: mathematical, relational, logical, etc. An integer, for example, is a data type used to classify whole numbers.





Variables and Types

- Numeric Variable

- Integer data, i.e., whole numbers, 10 25 -45 0
- Floating point data – have a decimal point 23.0, -5.0



- Character Variable (alphanumeric)

- All the characters you can type at the keyboard
- Letters & numbers not used in calculations



- Boolean Variable

- TRUE/FALSE





Variables and Types

Primary (Fundamental) data types in C programming :

- **int**: It is responsible for storing integers. In general, int data type occupies 4 bytes of memory when working with a 32-bit compiler.
- **float**: It is responsible for storing fractions or digits up to 7 decimal places. It is usually referred to as a single-precision floating-point type. It occupies 4 bytes of memory



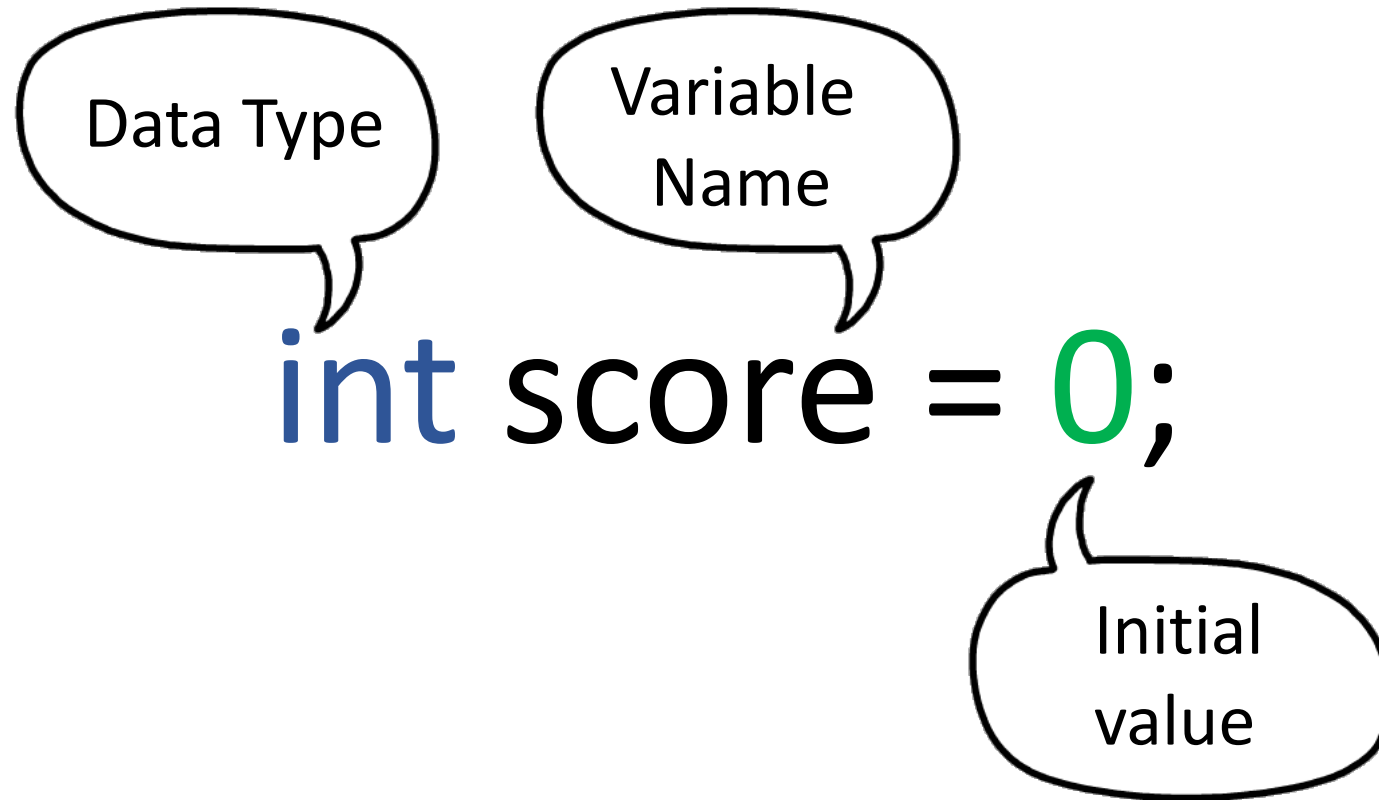
Variables and Types

- **char:** It can be used to store a set of all characters which may include alphabets, numbers and special characters. It occupies 1 byte of memory being the smallest addressable unit of a machine containing a fundamental character set.
- **double:** It is responsible for storing fractions or digits up to 15-16 decimal places. It is usually referred to as a double-precision floating-point type.
- **void (Null) data type:** It indicates zero or no return value. It is generally used to assign the null value while declaring a function.



Variables and Types

- Variable declaration in C:





Variables and Types

- Variable declaration examples in C:

```
int score = 0;
```

```
float pi = 3.14;
```

```
char door = 'A';
```

```
double distance = 23.12e+11;
```


Is time to Try

<https://repl.it/languages/c>





Variables and Types

```
#include <stdio.h>

int main(void) {

    /*Integer variable declaration*/
    int score = 0;
    /*float variable declaration*/
    float pi =3.14;
    /*Char variable declaration*/
    char door = 'A';
    /*double variable declaration*/
    double distance=23.12e+11;

    return 0;
}
```