Lesson 2 Variables

Hello, fellow programmers!

Last lesson we learned how to make the computer speak using **printf**. In this lesson, we're going to learn about how the computer stores data. To do that, the computer uses **variables** (that's the name of the lesson!)

Variables are containers to hold the data you want to store, whether it's a number or a piece of text!

To create a variable that stores an integer (a whole number), type:

int <<name of variable>>;

e.g., **int x;**

You can change the data inside your variable

You can also have variables that store text inside them. Just replace the **int** with **char**.

Note the char (or character) stores one character only e.g., **'A'**, or **'z'**.

Now, here's a fun fact!

The variable we just created, i.e., x, doesn't have any data stored inside of it, because we didn't add any value or "data".

So how do we add value inside a variable?

That's easy! All you need to do is add an equal sign and whatever data you'd like to store in the variable (making sure it is of the same type or format). For example:

```
int x = 5;
```

and now, the variable **x** has a value of **five (5)** stored inside of it!

You can add, subtract, and do other mathematical operations on **integer variables** like so:

```
int x=5;
int y=3;
int output;
output = y+x;
```

You can also print the output!

Here's how to print an integer variable:

```
printf("%d", <<variable name>>);
```

So, to print the **output** variable, we write:

```
printf("%d", output);
```

CHARACTERS

A **character** is a variable that can contain one letter, number or symbol.

To create a character variable, you type:

```
char x='A';
```

x is the name of the variable and **'A'** is the data stored inside of it.

There's also a very important fact you need to know: integer variables cannot store decimal numbers (numbers with decimal points).

A variable that stores decimal points is called a **float** variable and can be created as so:

```
float x=2.4;
```

And is printed like so:

```
printf("%f",x);
```

Now you know what a variable is!