Magic Of Micro-Controller

An Intensive Training Course on Micro-Controller

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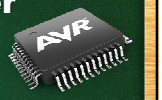
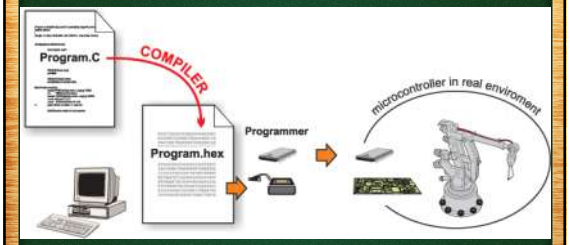
Micro-Controller



A micro-controller (*or* ***MCU*** *for microcontroller unit*) is a small computer on a single integrated circuit.

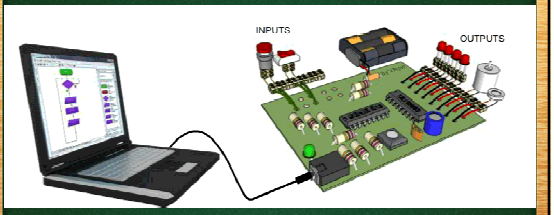
A micro-controller contains one or more CPUs along with **memory** and **programmable input/output peripherals**.

Micro-Controller Programming



MCU is just like a simple machine and follows the machine instruction loaded on it.

Micro-Controller Programming



The microcontroller executes the program loaded in its Flash memory.

Course Prerequisites ....

- ✓ Programming Language - C.
  - ✓ Data Types
  - ✓ If else Statements
  - ✓ For Loop, While Loop
  - ✓ Function Declarations
  - ✓ Array
- ✓ Basic Electronics
  - ✓ Digital Logics and Number Systems
  - ✓ Schematic Designing
  - ✓ Software Simulations
  - ✓ PCB Designing

Programming Language - C

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1) Installing – CodeBlocks
2) Creating – New Project

Data Types in – C

Data Type	Memory (bytes)	Range	Format Specifier
int	4	-2,147,483,648 to 2,147,483,647	%d
unsigned long int	4	0 to 4,294,967,295	%lu
float	4	1.2E-38 to 3.4E+38	%f
double	8	2.3E-308 to 1.7E+308	%lf
signed char	1	-128 to 127	%c
unsigned char	1	0 to 255	%c

If, Else Statements – C

```
if(boolean_expression)
{
   /* statement(s) will execute if the boolean expression is true */
}
else
{
   /* statement(s) will execute if the boolean expression is false */
}
```

For, While Loop – C

```
for ( init; condition; increment )
{
   //statement(s);
}

while(condition)
{
   //statement(s);
}
```

Function – C

```
return_type function_name( parameter list )
{
   //body of the function
}
```

Array – C

```
int balance[5] = {1000, 2, 3, 7, 50};
```

The number of values between braces { } cannot be larger than the number of elements that we declare for the array between square brackets [ ].

Thank You