| **Parameter** | **Arduino Uno** | **8051 Microcontroller** |
| --- | --- | --- |
| **What it is** | [A microcontroller board along with its IDE and pre-tested software and hardware libraries](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) | [A family of 8-bit microcontrollers](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) |
| **Developed By** | [Interaction Design Institute Ivrea (IDII)](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) | [Intel Corporation](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) |
| **Clock Speed** | [16 MHz](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) | [12 MHz](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) |
| **Machine Cycle** | [1 clock cycle equals one machine cycle](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) | [12 clock cycles complete equals one machine cycle](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) |
| **Power Supply** | [6 Volts – 20 Volts (7-12 volts is recommended)](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) | [5 Volts – 6.6 Volts](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[2](https://www.engineersgarage.com/arduino-vs-microcontrollers/) |
| **Programming** | [Comes with a pre-programmed microcontroller](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[3](https://differencebetweenz.com/difference-between-arduino-and-8051-microcontroller/) | [Needs to be programmed separately](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[3](https://differencebetweenz.com/difference-between-arduino-and-8051-microcontroller/) |
| **I/O Pins** | [Less compared to 8051](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[3](https://differencebetweenz.com/difference-between-arduino-and-8051-microcontroller/) | [More compared to Arduino](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[3](https://differencebetweenz.com/difference-between-arduino-and-8051-microcontroller/) |
| **Ease of Use** | [User-friendly and ideal for beginners](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) | [Requires more advanced knowledge of programming and hardware design](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) |
| **Applications** | [More versatile for rapid prototyping and hobbyist projects](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) | [Commonly used in commercial applications and embedded systems](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/)[1](https://askanydifference.com/difference-between-arduino-and-8051-microcontroller/) |