| **Parameter** | **Microprocessor** | **Microcontroller** |
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| **Definition** | Microprocessors can be understood as the heart of a computer system. | Microcontrollers can be understood as the heart of an embedded system. |
| **What is it?** | A microprocessor is a processor where the memory and I/O component are connected externally. | A microcontroller is a controlling device wherein the memory and I/O output component are present internally. |
| **Circuit complexity** | The circuit is complex due to external connection. | Microcontrollers are present on chip memory. The circuit is less complex. |
| **Memory and I/O components** | The memory and I/O components are to be connected externally. | The memory and I/O components are available. |
| **Compact system compatibility** | Microprocessors can’t be used in compact system. | Microcontrollers can be used with a compact system. |
| **Efficiency** | Microprocessors are not efficient. | Microcontrollers are efficient. |
| **Number of registers** | Microprocessors have less number of registers. | Microcontrollers have more number of registers. |
| **Applications** | Microprocessors are generally used in personal computers. | Microcontrollers are generally used in washing machines, and air conditioners. |