

## 1. Performance Ranges Overview:

- **Baseline:** These are basic microcontrollers, typically with reduced memory and limited speed. They are primarily for simple control applications where only a few I/O operations are needed.
- **Mid-Range:** Mid-tier PIC devices offer more memory and flexibility in I/O options. They often support analog-to-digital (A/D) conversion and have more digital communication options, making them suitable for more complex embedded systems.
- **High Performance:** These devices provide extensive memory, high-speed processing, and many I/O options, along with advanced communication interfaces like USB and multiple serial communication protocols.

## 2. PIC Model Comparison:

Feature	PIC16F84A	PIC16F882	PIC18F4550
Ports	13 I/O pins	18 I/O pins	35 I/O pins
Flash Memory	1 KB	4 KB	32 KB
Clock Speed	20 MHz	20 MHz	48 MHz
Address Bus	13-bit	16-bit	21-bit
Peripheral Devices	Basic (timers)	ADC, PWM, Timers	USB, ADC, PWM, Timers, UART, SPI, I2C
RAM	68 bytes	256 bytes	2048 bytes