

Microcontrollers

Team Emertxe



Contents



Microcontrollers

Contents

- Introduction to Embedded Systems
- Introduction to Microcontrollers
- Embedded Programming
- Communication Protocols I



Introduction

Introduction

- What is a Microcontroller
- General Architectures
- μ P vs μ C
- Choosing a Microcontroller



Introduction

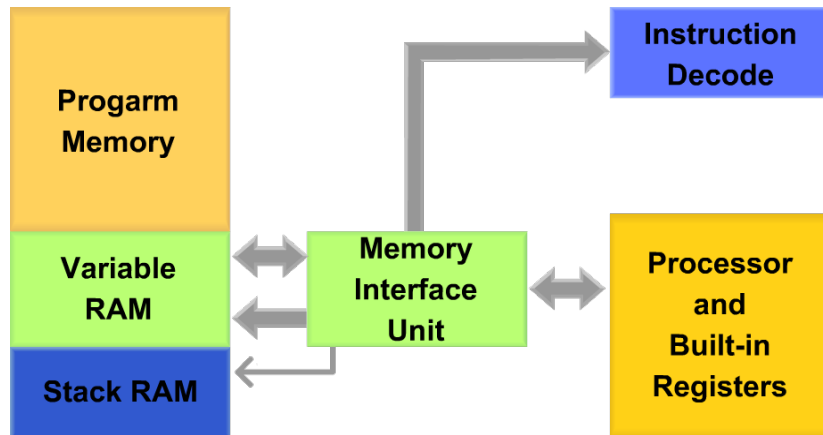
What is a Microcontroller?

- An Integrated Circuit which is capable of being programmed to preform a specific task.
- The design normally has restrictions on its
 - Memory Size
 - I/O Capabilities
 - Peripheral Functions etc.,

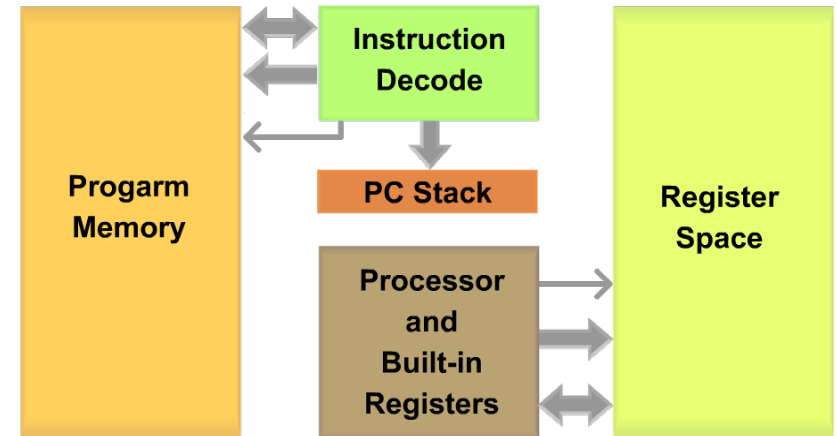


Introduction

General Architectures



Von Neuman Architecture



Harvard Architecture

- Shared signals and memory for code and data

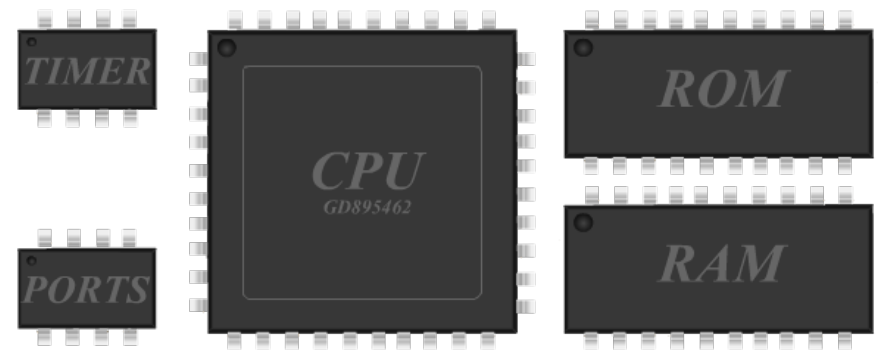
- Physically separate signals and storage for code and data



Introduction

μ P vs μ C - Microprocessors

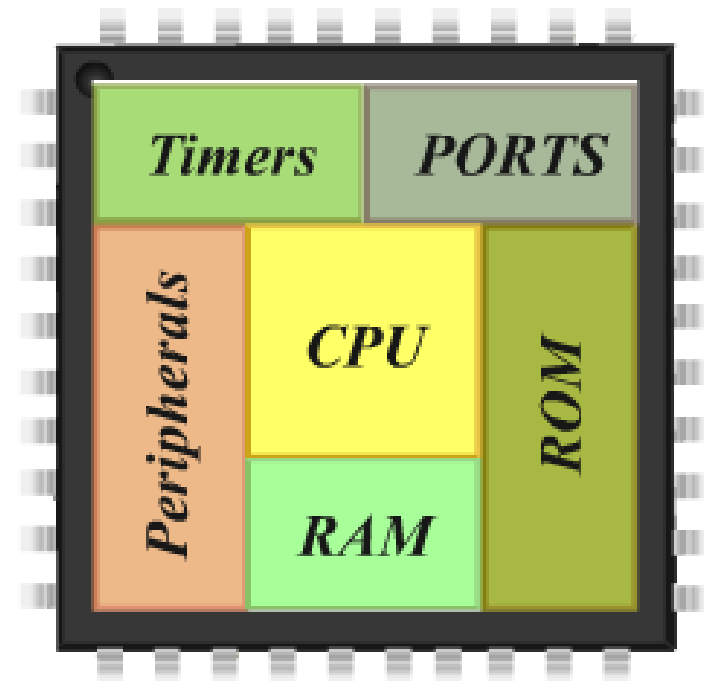
- All separate components
- More flexible
- More design complexity



Introduction

μ P vs μ C - Microcontroller

- All components in single chip
- Less flexible
- Less design complexity



Introduction

Choosing a Microcontroller



- Applications
- Performance
- Price
- Availability
- Availability of Tools
- Special Capabilities



Thank You