Microprocessor and Microcontroller

III year II semester

EEE Department

Faculty:
Dr. Rashmi Kapoor

WHAT I AM TEACHING IN MICROPROCESSOR AND MICROCONTROLLERS

MICRO-PROCESSOR : THE BRAIN OF COMPUTERS

8086-16 BIT MICROPROCESSOR

A/D OR D/A CONVERTERS

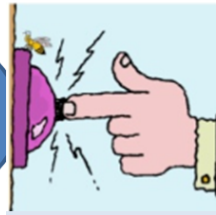
SPECIAL PERIPHERAL DEVICE (8255)

PARALLEL DATA

INTERRUPT HANDLING PERIPHERAL 8259

DATA

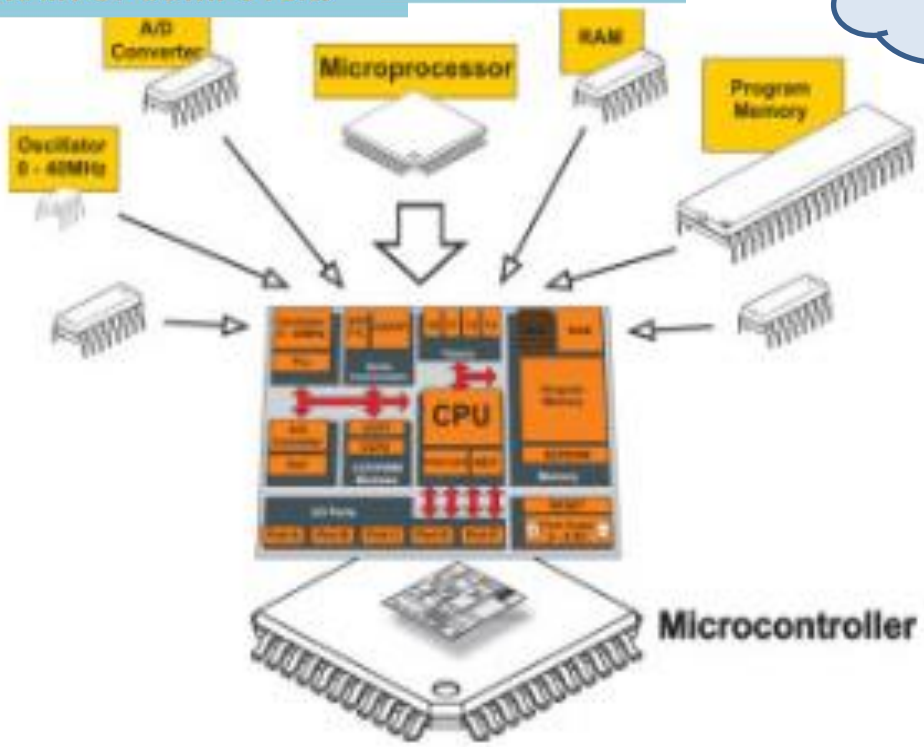
8086



INTERRUPTS

SPECIAL PERIPHERAL DEVICE: (8251)

SERIAL DATA



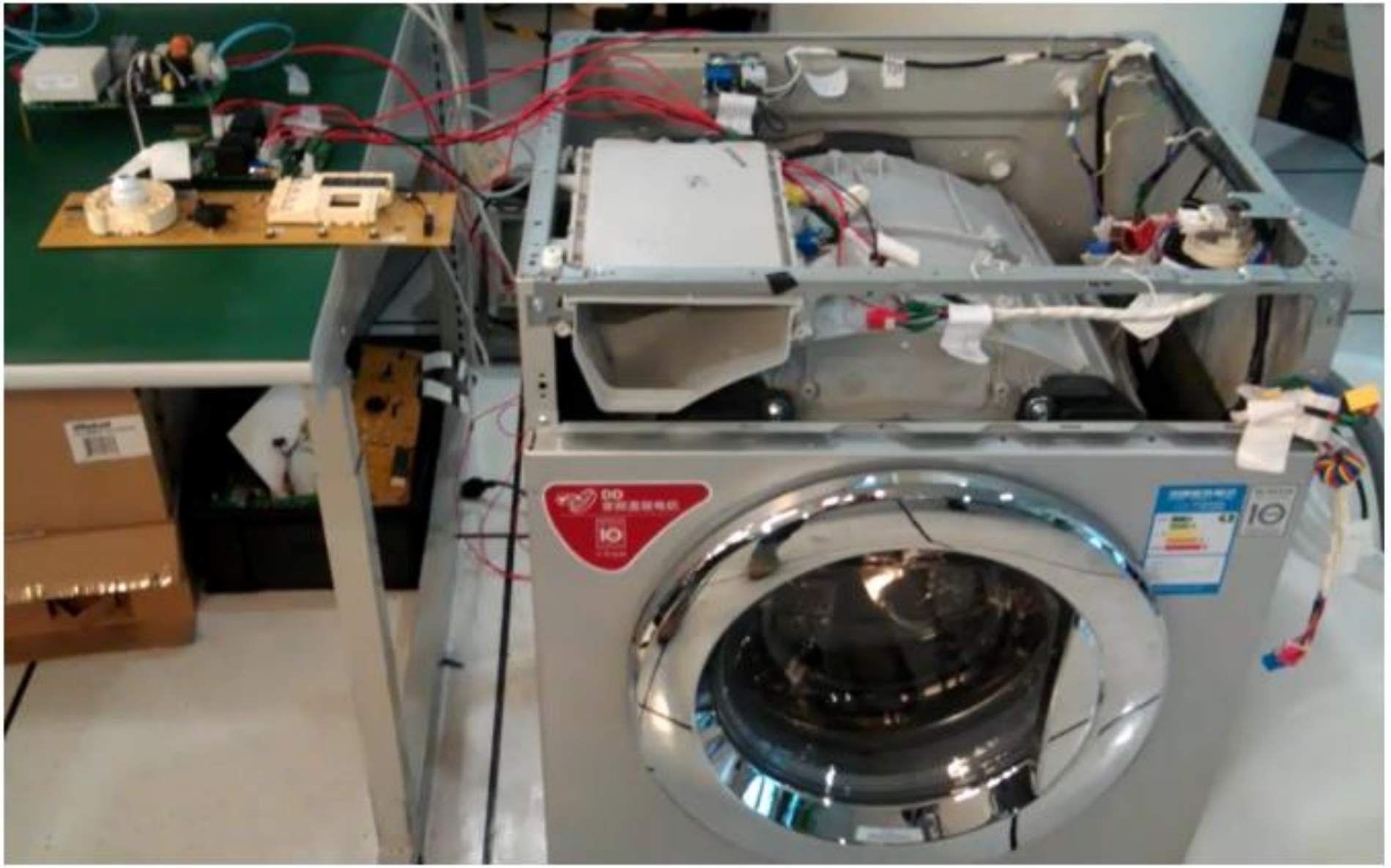
KEYBORAD

LED DISPLAY

MICROCONTROLLER

STEPPER MOTOR

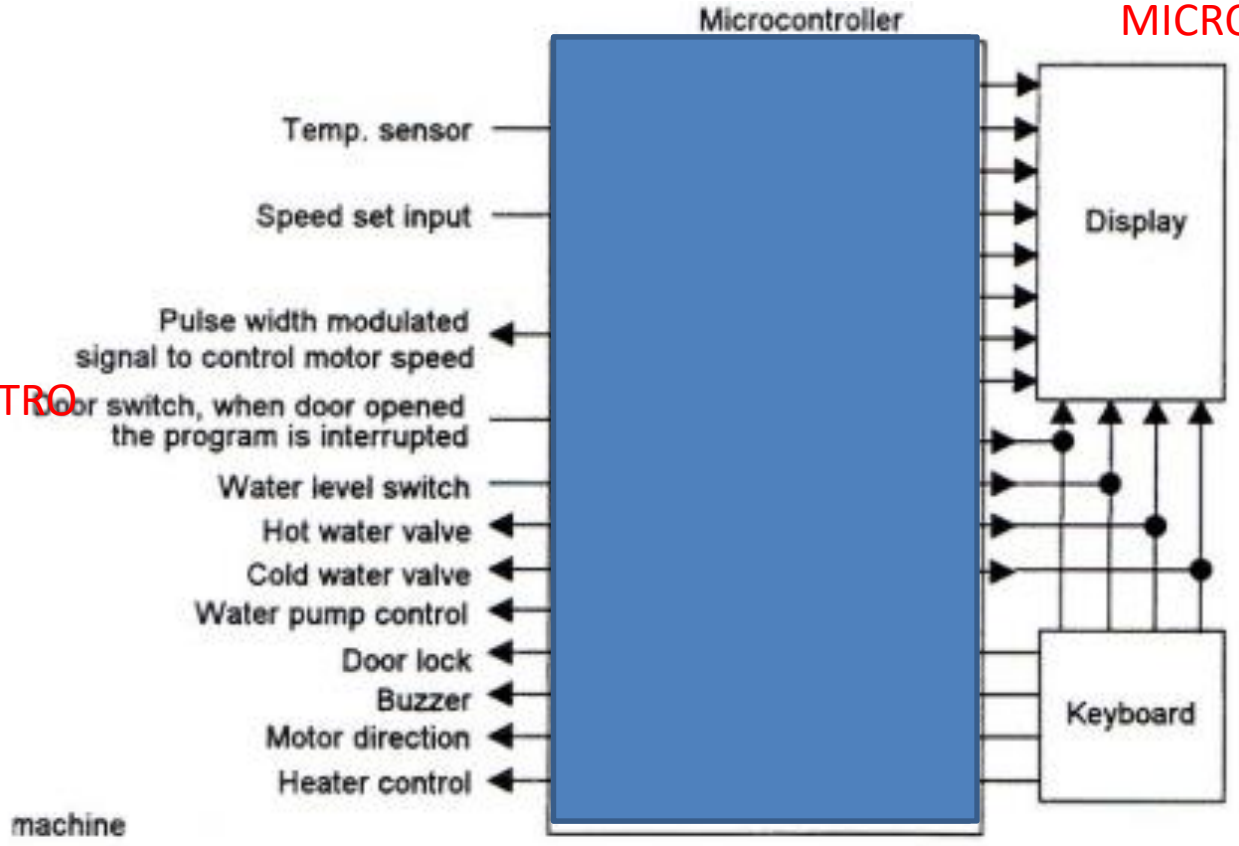
DOMESTIC WASHING MACHINE



WHY I AM TEACHING MICROPROCESSOR AND MICROCONTROLLERS

HOW TO HANDLE INTERRUPTS IN MICROCONTROLLERS

HOW TO INTERFACE MICROCONTROLLERS WITH MOTORS



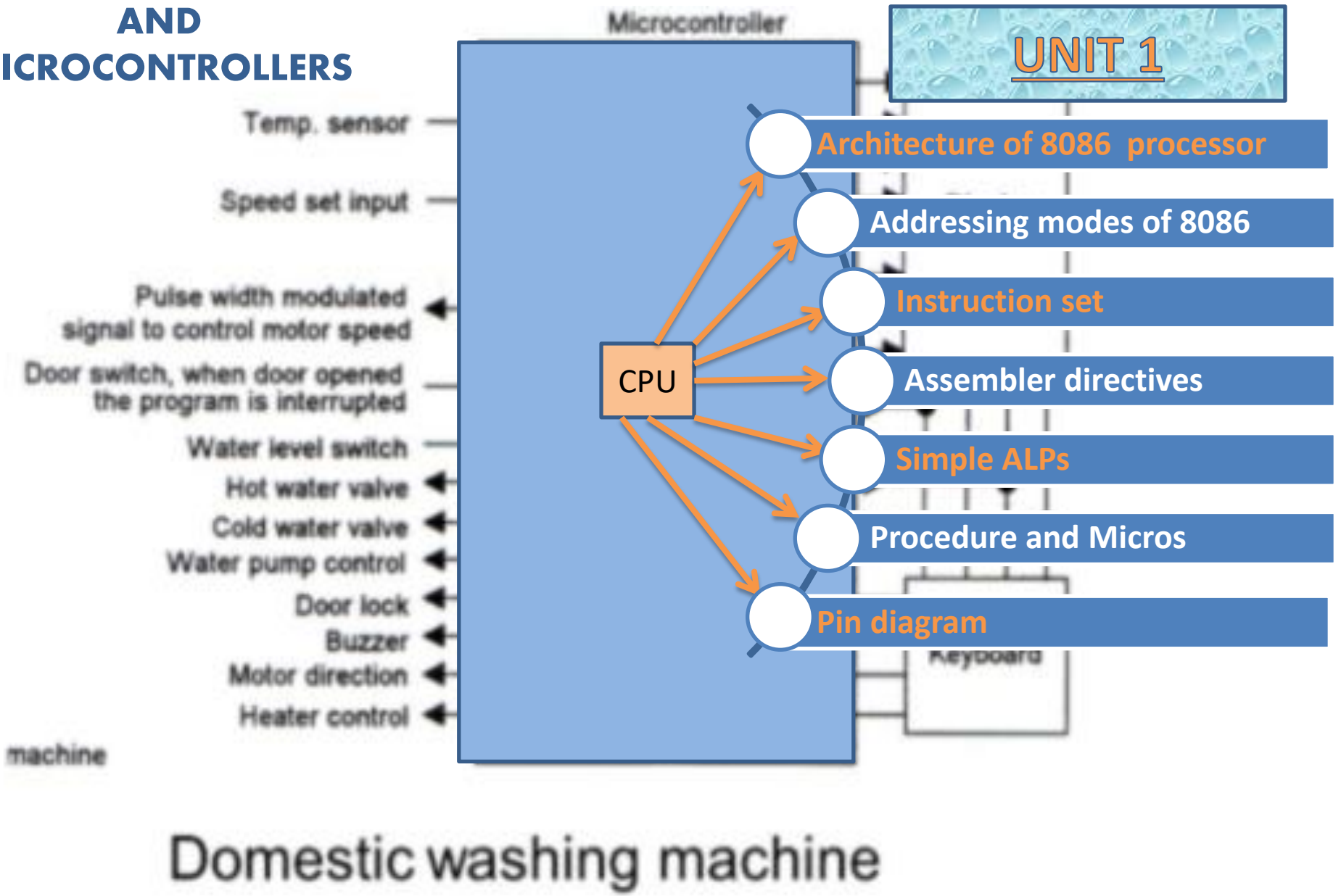
Domestic washing machine

HOW TO INTERFACE MICROCONTROLLERS WITH DISPLAY AND KEYBOARD.

HOW TO GENERATE DELAY USING MICROCONTROLLERS FOR TIMER SETTING

WHY I AM TEACHING MICROPROCESSOR AND MICROCONTROLLERS

WHAT I AM TEACHING IN MICROPROCESSOR AND MICROCONTROLLERS



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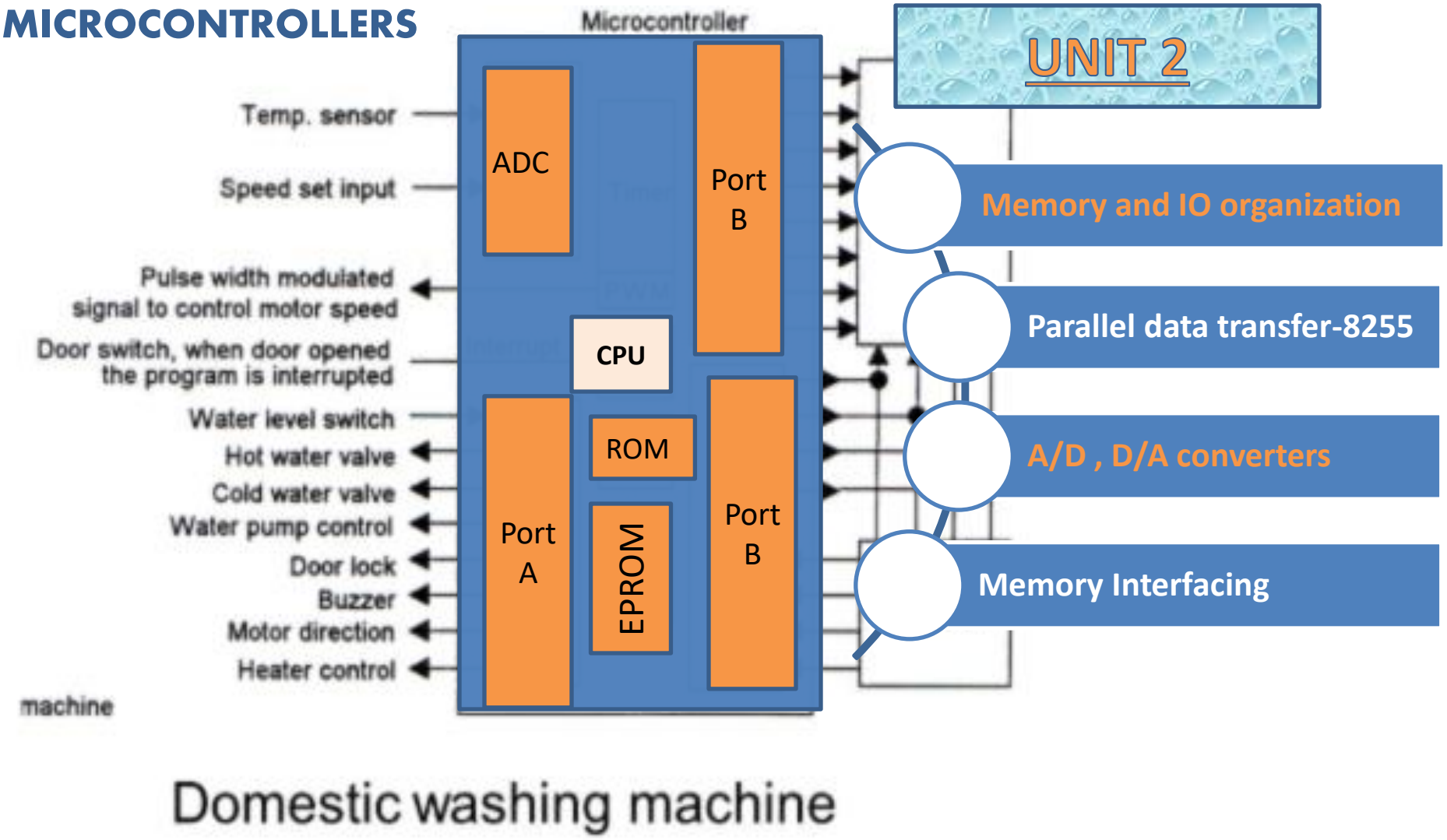

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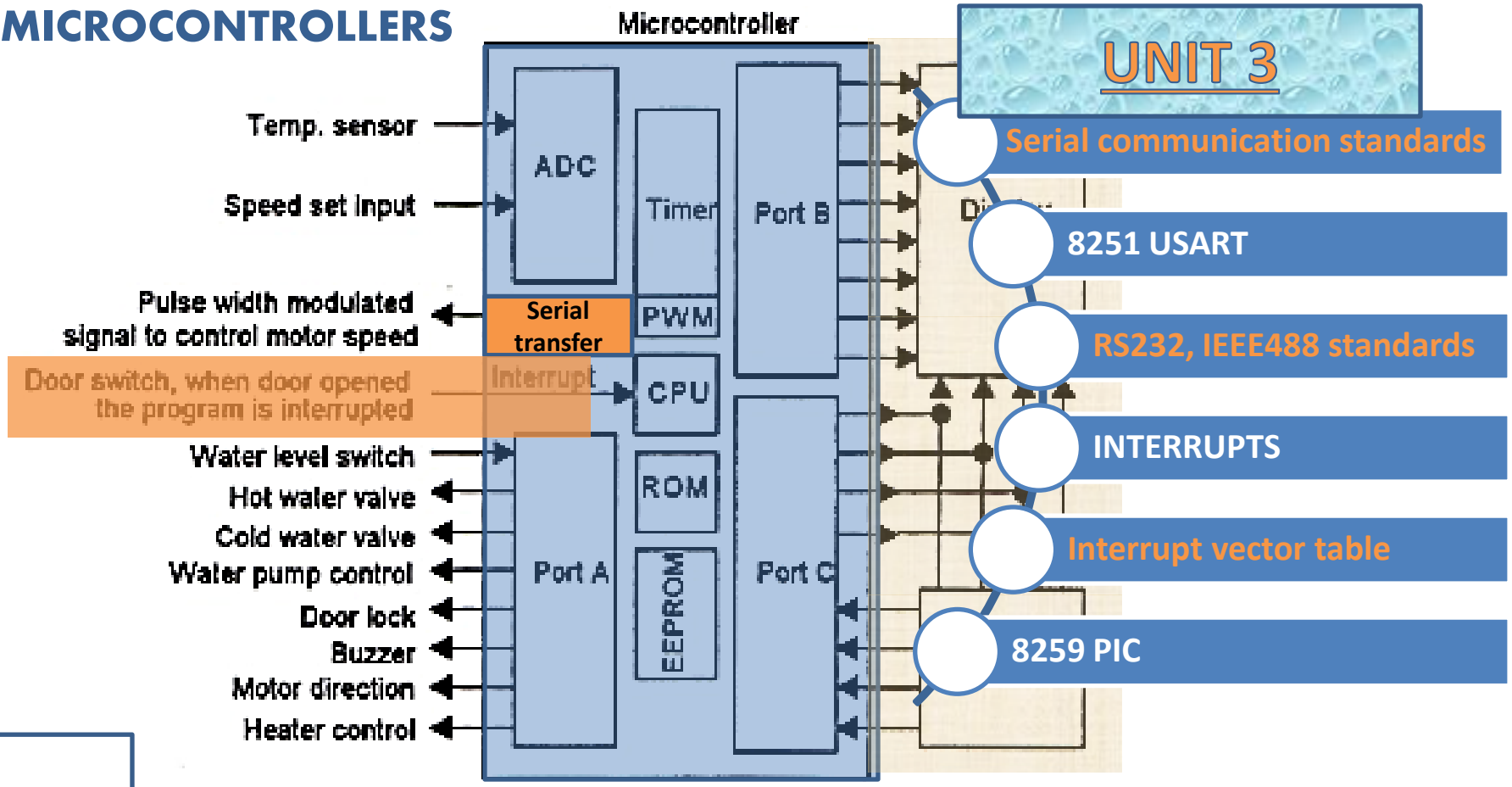

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WASHING MACHINE CONTROLLER

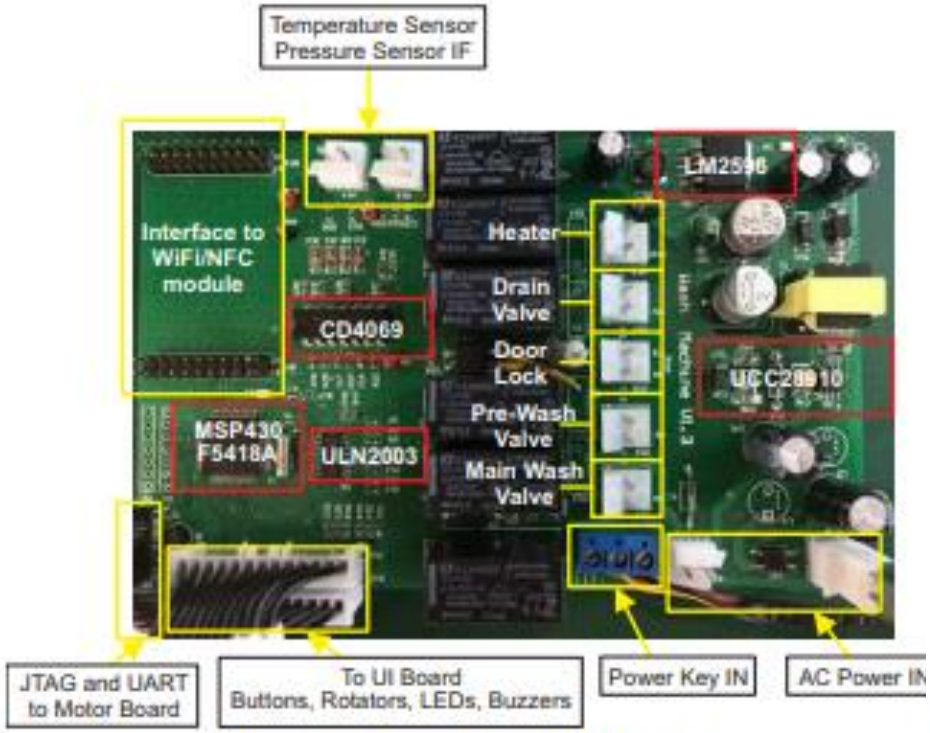


Figure 3. Main Control Board

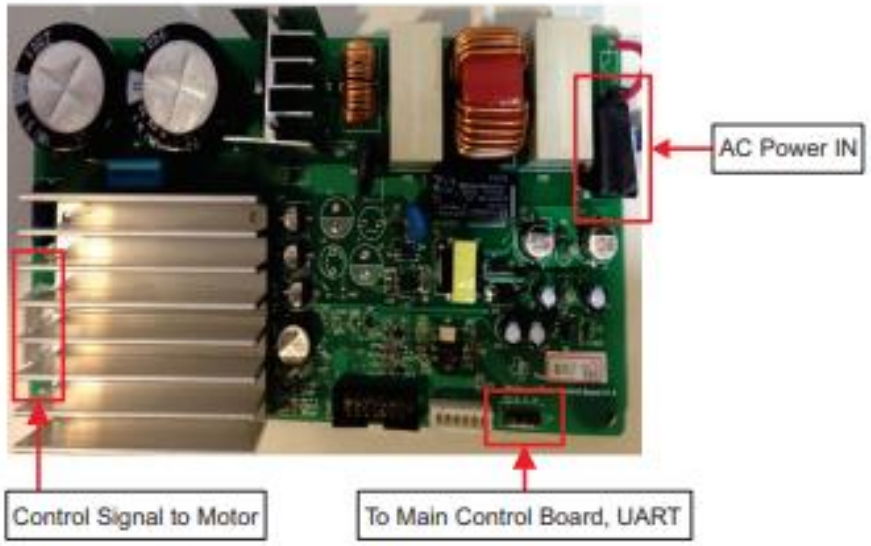
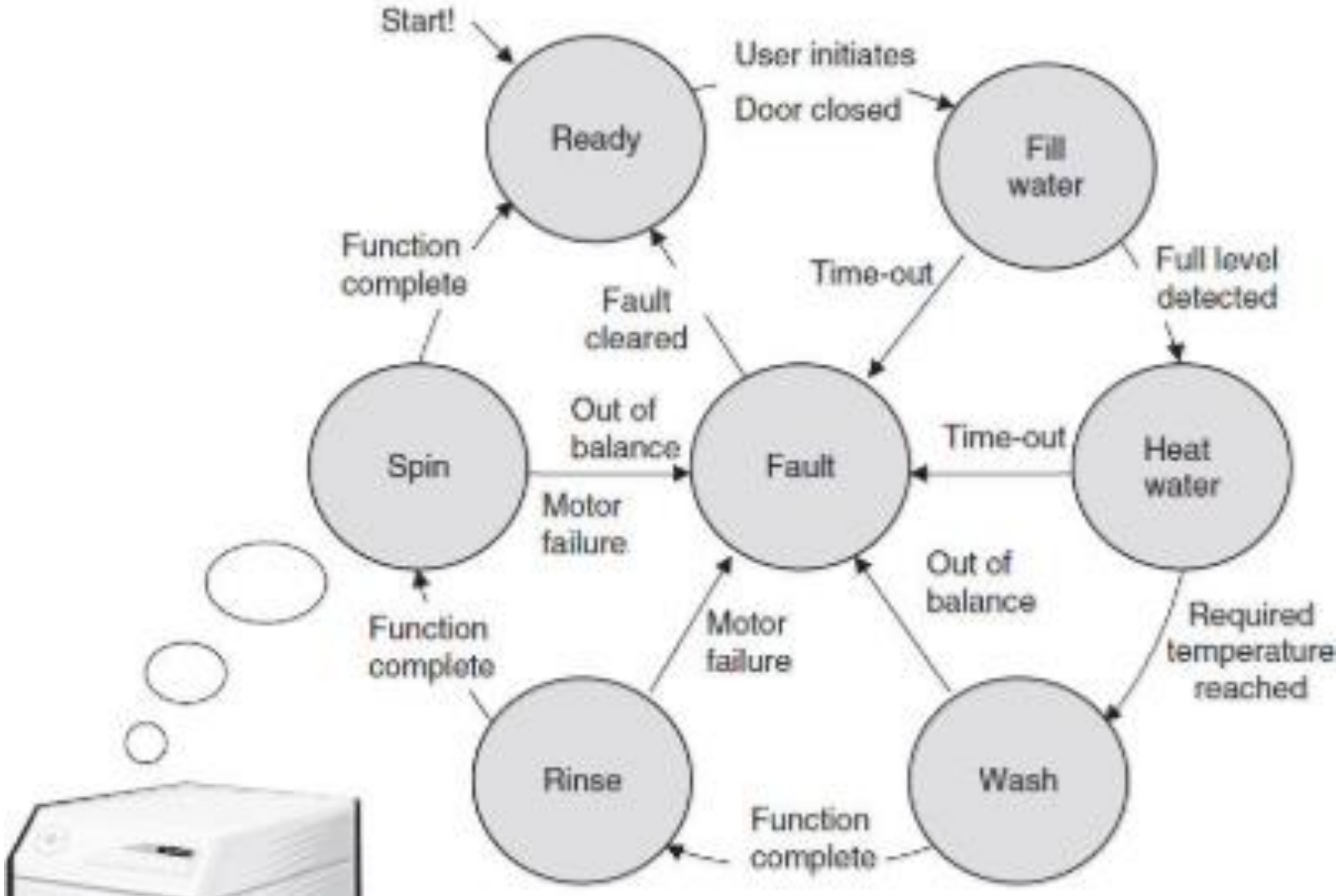


Figure 4. Motor Control Board

Reference from Texas instruments washing machine control reference design users guide 2014

INTERRUPTS IN WASHING MACHINE



A washing machine control program - visualised as a state diagram (Finite State Machine - FSM)

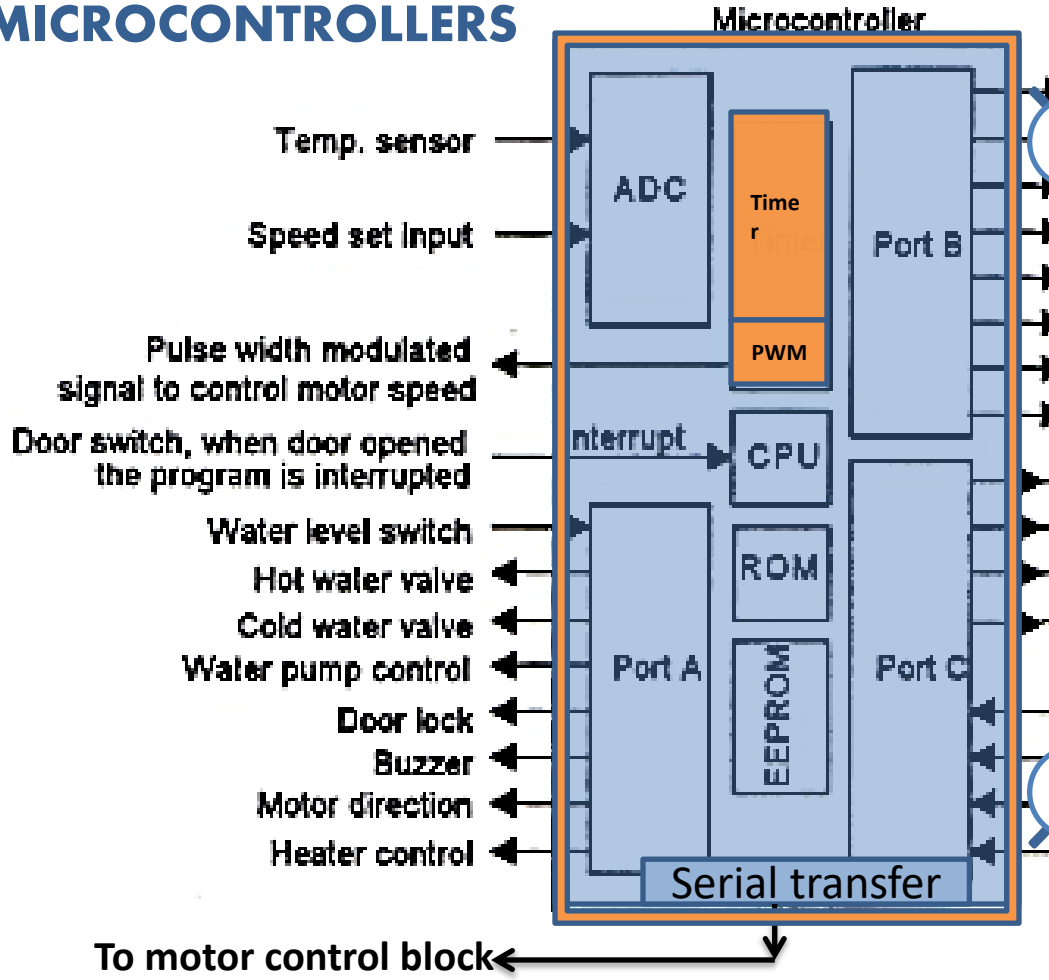
This is the CSD style of programming

WHY I AM TEACHING MICROPROCESSOR AND MICROCONTROLLERS

WHAT I AM TEACHING IN MICROPROCESSOR AND MICROCONTROLLERS

UNIT 4

- 8051 Microcontrollers
- Architecture-Memory 8051
- I/O ports
- Timers
- Serial data transfer
- Interrupts
- Programming



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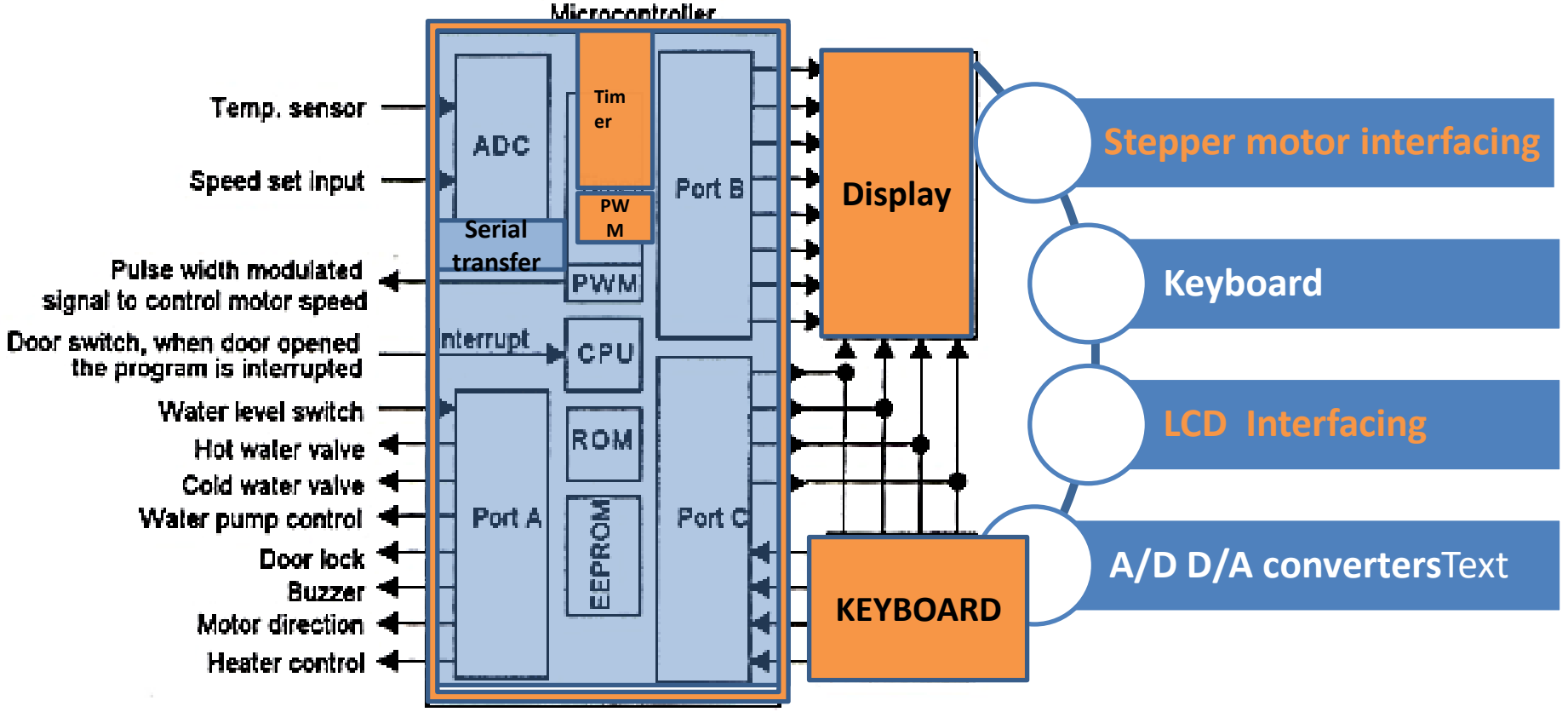
WHY I AM TEACHING MICROPROCESSOR AND MICROCONTROLLERS

WHAT I AM TEACHING IN MICROPROCESSOR AND MICROCONTROLLERS

UNIT 5



Domestic washing machine

WHAT I AM LEARNING IN MICROPROCESSOR AND MICROCONTROLLERS

- BASIC ARCHITECTURE OF MICROPROCESSOR AND MICROCONTROLLERS
- SERIAL AND PARALLEL DATA TRANSMITION WITH MICRPROCESSOR AND MICRCONTROLLER.
- INTERRUPT HANDLING IN MICROPROCESSOR AND MICROCONTROLLER.
- INTERFACING A/D TO D/A CONVERTERS WITH MICROPROCESSOR.
- INTERFACING LED, KEYBOARD, STEPPER MOTOR WITH MICROCONTROLLERS.
- INTRODUCTION TO ADVANCED MICROCONTROLLERS.