

Lesson 7:

Embedded System Modeling

Three Layer Model for Embedded Systems

Layer 3: Application Software layer

- Application software layer consisting of application program interfaces, user interfaces and software



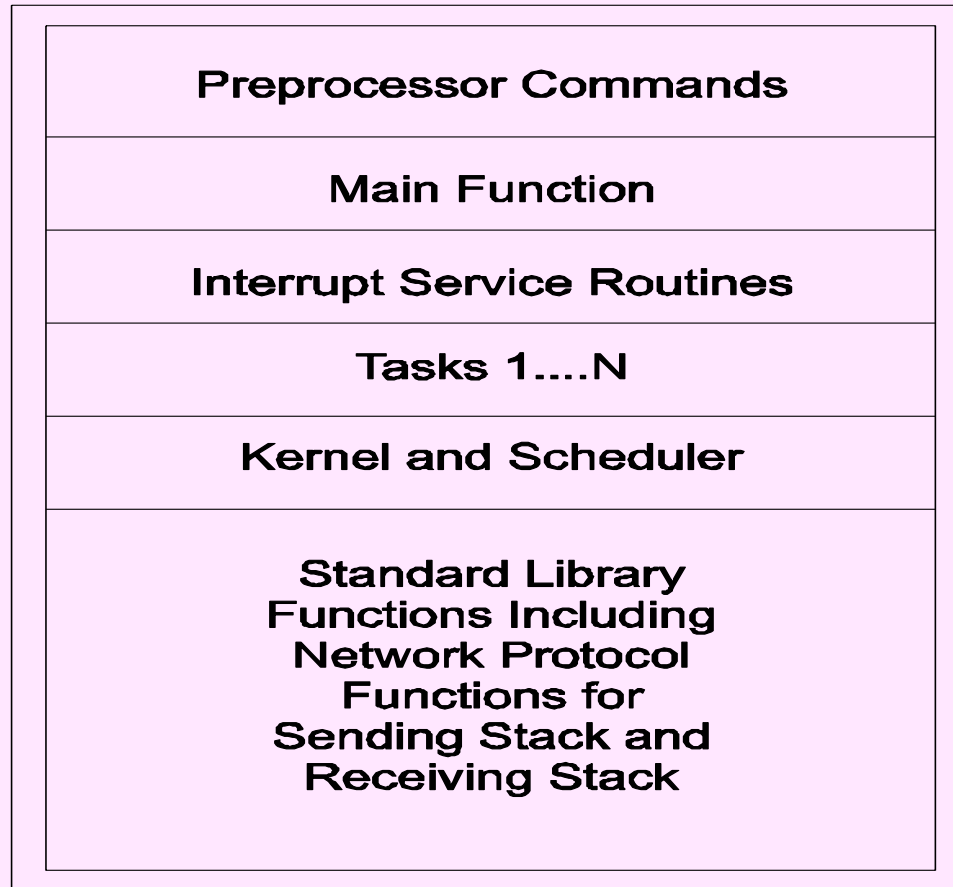
Program Models

- Sequential Programming Model
- Object Oriented Programming Model
- Control and Data flow graphs or Synchronous Data Flow (SDF) Graph or Multi Thread Graph (MTG) Model
- Finite State Machine for data path
- Multithreaded Model
- Concurrent Processing of processes or thread or tasks

Embedded C Program various sub-layers

- processor commands,
- main function,
- task functions and
- library functions,
- interrupt service routines
- and kernel (scheduler).

Sub-layers in Embedded C Program .



- Application Software - Different Program Layers

Layer 2: System software

- System software layer consisting of operating system, device drivers and middleware

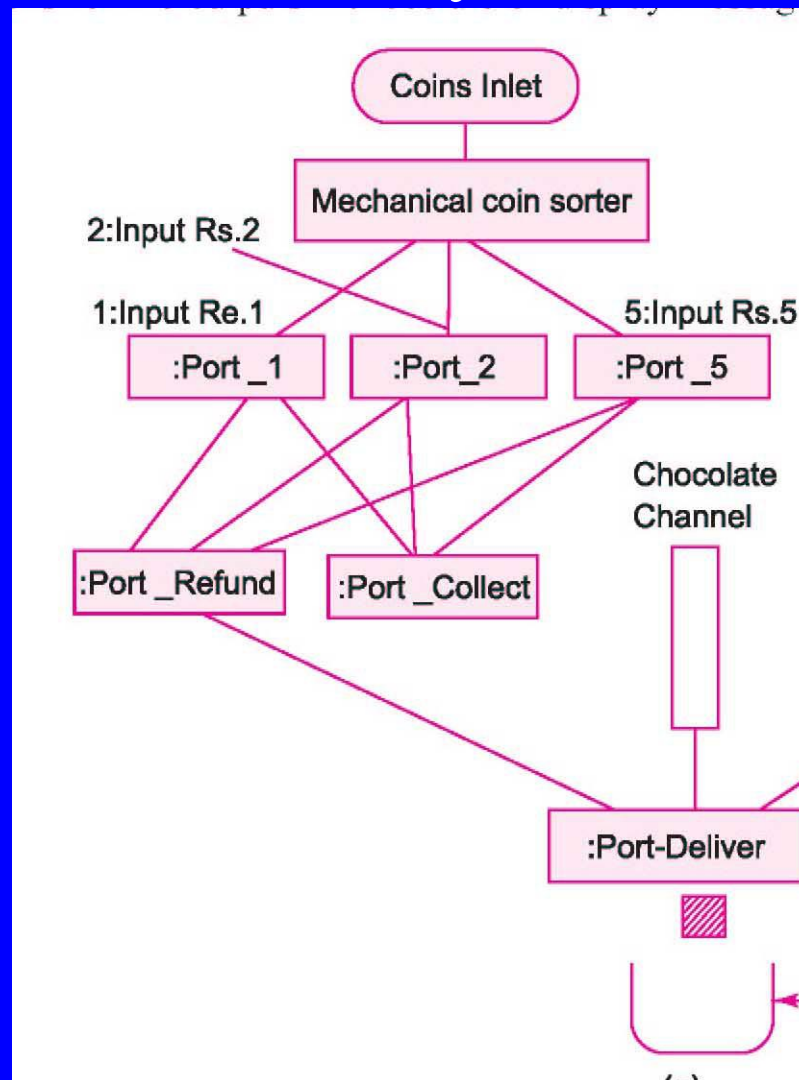
Middleware

- Software component which enables inputs from one system and outputs to another system
- For example, a mobile system middleware enables inputs from wireless system and gives output on the mobile system

Layer 1: Hardware

- Hardware layer consisting of Processor, memory, IO units, Display unit

Hardware Layer in ACVM



Summary

We learnt:

- Three Layered Model of the system
- Programming Models, which are used for a embedded-software development process

End of the Lesson –7