Operating System (OS)

⌐ software that runs on computer/microcontroller that accomplishes a
no. of important functions

scheduling background
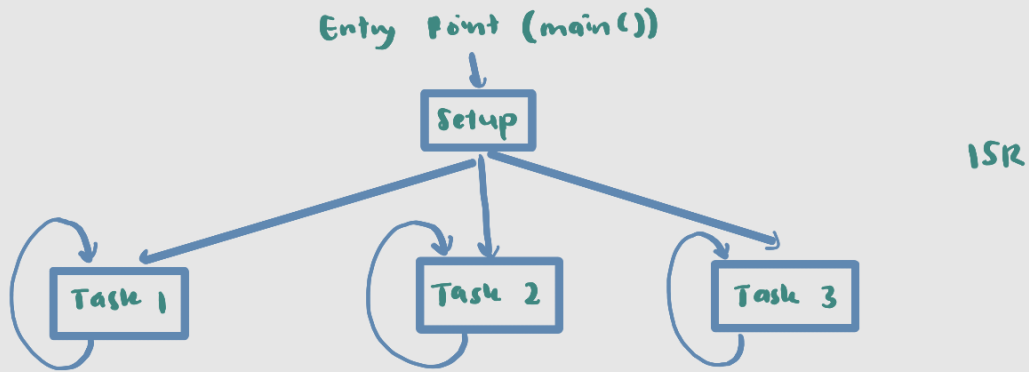tasks & user information

Resource
management
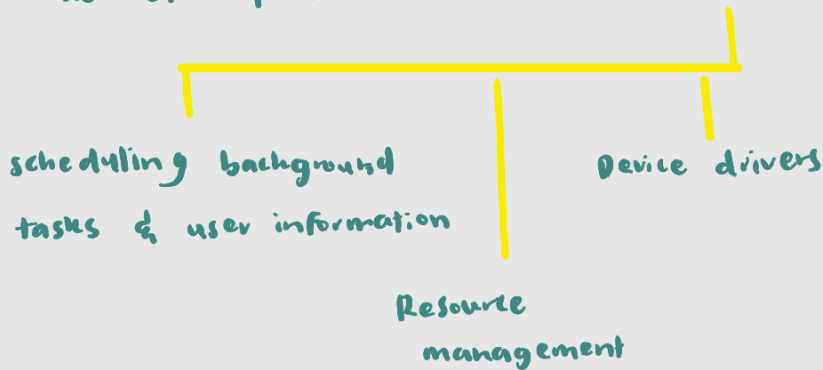
Device drivers

Real-Time OS (RTOS)

⌐ offer same functions as GPOS

⌐ can meet timing deadlines on tasks

⌐ Provide high level device drivers ⟨ WiFi
Bluetooth stack
LCD drivers

⌐ Run multiple tasks concurrently

─ cannot execute
tasks concurrently

Super Loop

Entry point (main())

Setup

Loop

Task 1 → Interrupt service
Routine (ISR)

Task 2

Task 3

RTOS

Entry Point (main())

↓

Setup

Task 1   Task 2   Task 3   ISR
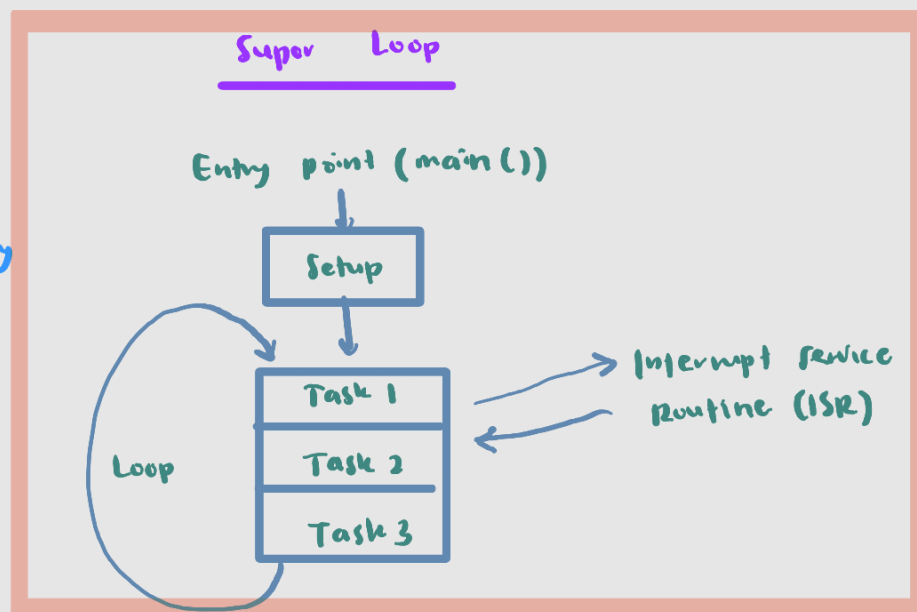
Task   –   set of program instructions loaded in   memory

Thread –   unit of CPU utilization with own program counter & stack

Process –   instance of a computer program

              – Free RTOS : Task = Thread

why RTOS?

   ⌐ need to run several things concurrently
       ⌐ requires large RAM & processing power
   ⌐ team working on larger project

ESP 32 Development Board