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BARE MACHINE
AND
RESIDENT MONITOR

BARE MACHINE

Can we execute any process without using the operating system?

Image via https://www.pinterest.com/

Bare Machine 1/2

- We have studied that we can't execute any process without using the *operating system*.
- But, yes with the help of the *Bare machine* we can do that.
- Bare machine is a *logical hardware* which is used to execute the program in the processor without using the operating system.

Bare Machine 2/2

- Initially, when the operating systems are not developed, the execution of an instruction is done by directly on hardware without using any *interfering* hardware.

- At that time the only *drawback* was that the Bare machines accepting the instruction in only machine language.

- Therefore, after the development of the operating system Bare machine is referred to as *inefficient*.

RESIDENT MONITOR

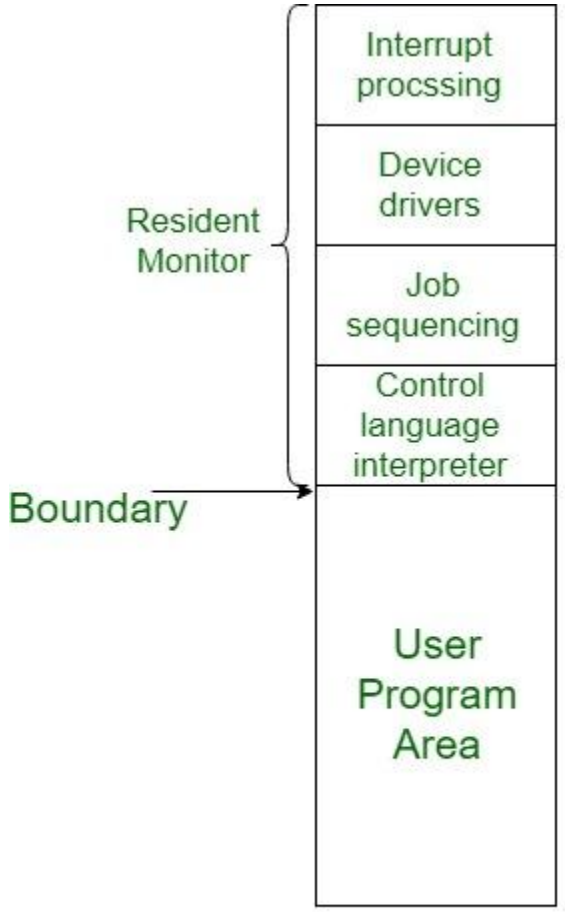
Resident Monitor

- The *resident monitor* works like an operating system that controls the instructions and performs all necessary functions.
- It also works like *job sequencer* because it also sequences the job and sends them to the processor.
- After scheduling the job Resident monitors loads the programs one by one into the *main memory* according to their sequences.
- One most important factor about the resident monitor is that when the program execution occurred there is no gap between the program execution and the processing. That is processing is going to be *faster*.

Resident Monitor: Architecture 1/2

- The Resident monitors are divided into 4 parts as:

  - Control Language Interpreter
  - Loader
  - Device Driver
  - Interrupt Processing



Memory Layout of Resident Monitor

Resident Monitor: Architecture 2/2

- **Control Language Interpreter**
  - It is used to read and carry out the instruction from one level to the next level.
- **Loader**
  - It Loads all the necessary system and application programs into the main memory.
- **Device Driver**
  - It is used to managing the connecting input-output devices to the system.
  - So, basically it is the interface between the user and the system.
  - It works as an interface between the request and response.
- **Interrupt Processing**
  - It processes the all occurred interrupt to the system.

References

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2. William Stallings, “Operating Systems: Internals and Design Principles”, 6th Edition, Pearson Education.

3. D M Dhamdhere, “Operating Systems: A Concept based Approach”, 2nd Edition, TMH.

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Thank You.