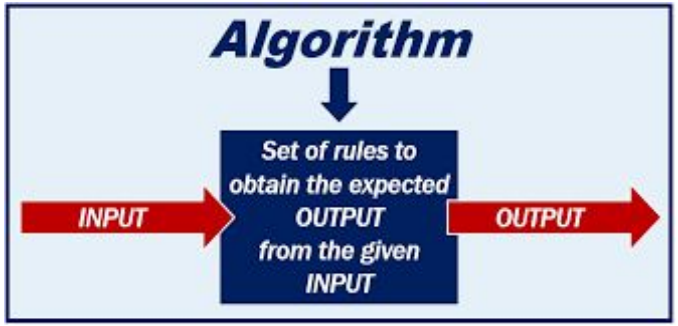
Vrinda M R

What is an Algorithm ?

- Step-by-step procedure of determining objective.
- Representation of a solution to a problem.
- Example ; Cooking a new recipe.



How to Design an Algorithm?

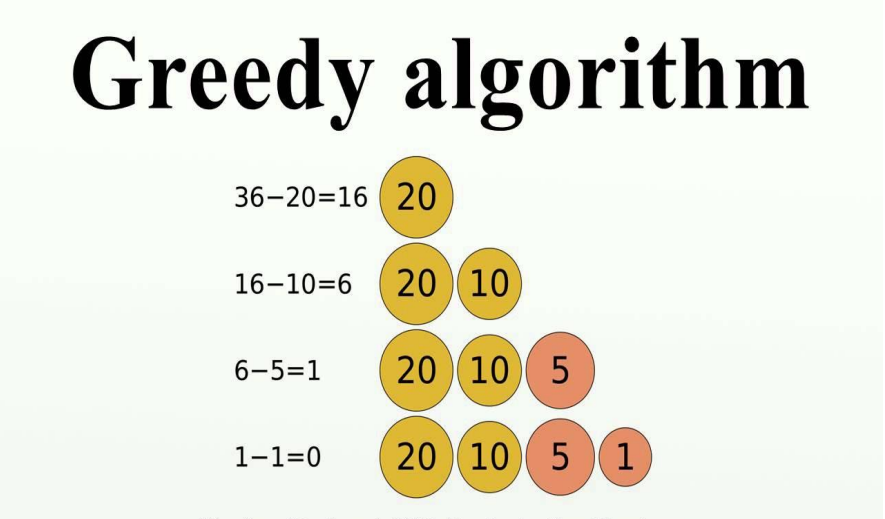
Pre-requisite to write an algorithm:

- Problem
- Constraints
- Input
- Output
- Solutions

Example

Problem : Find the minimum number of coins and/or notes needed to make the change?

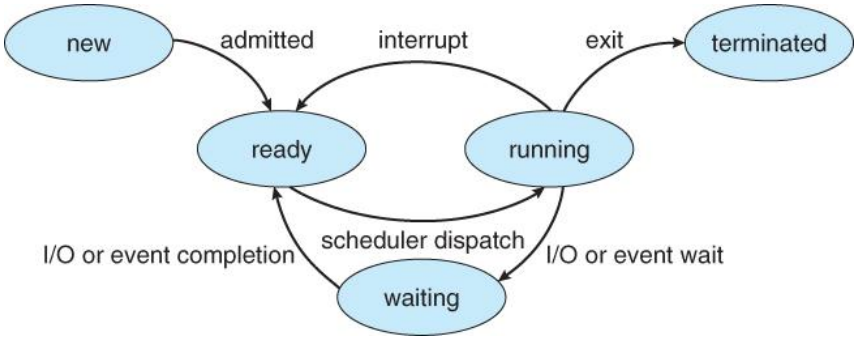
Solution : Greedy Approach

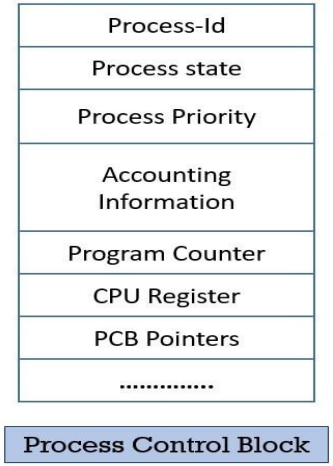


And

Process

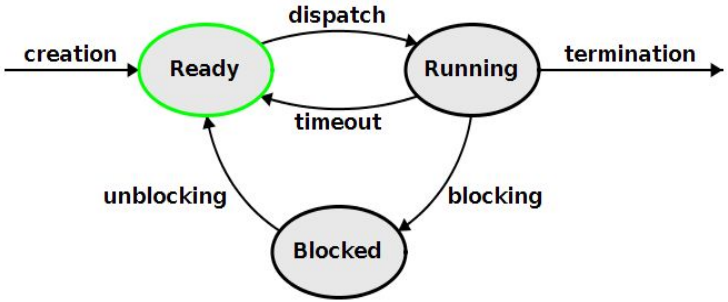
- Any program is in execution.
- Process control block controls the operation of any process.
- Example : Opening a new browser.

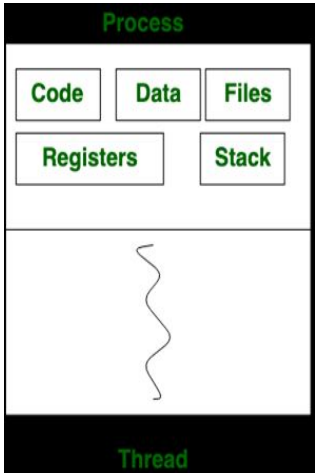




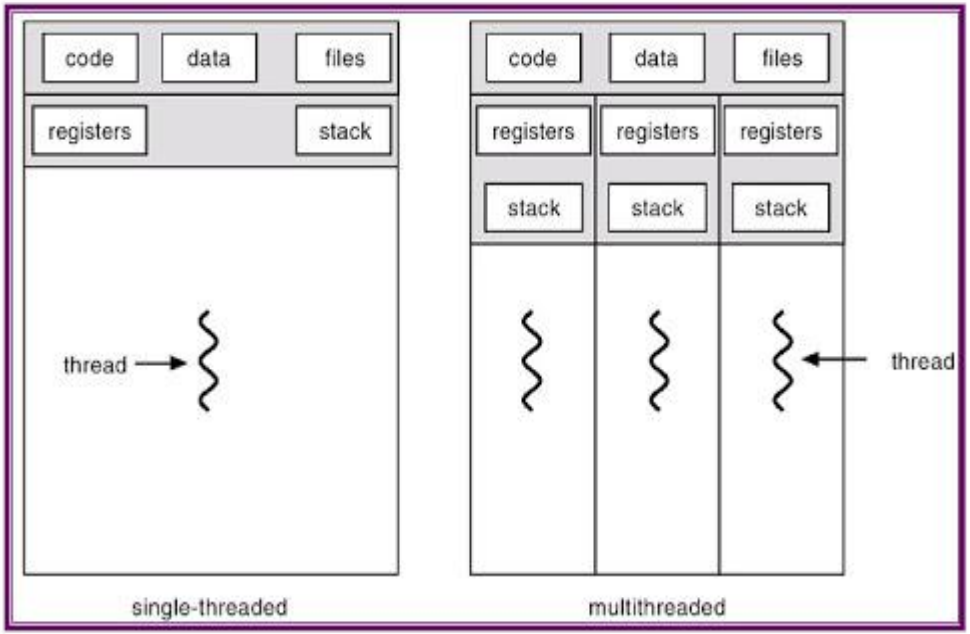
Threads

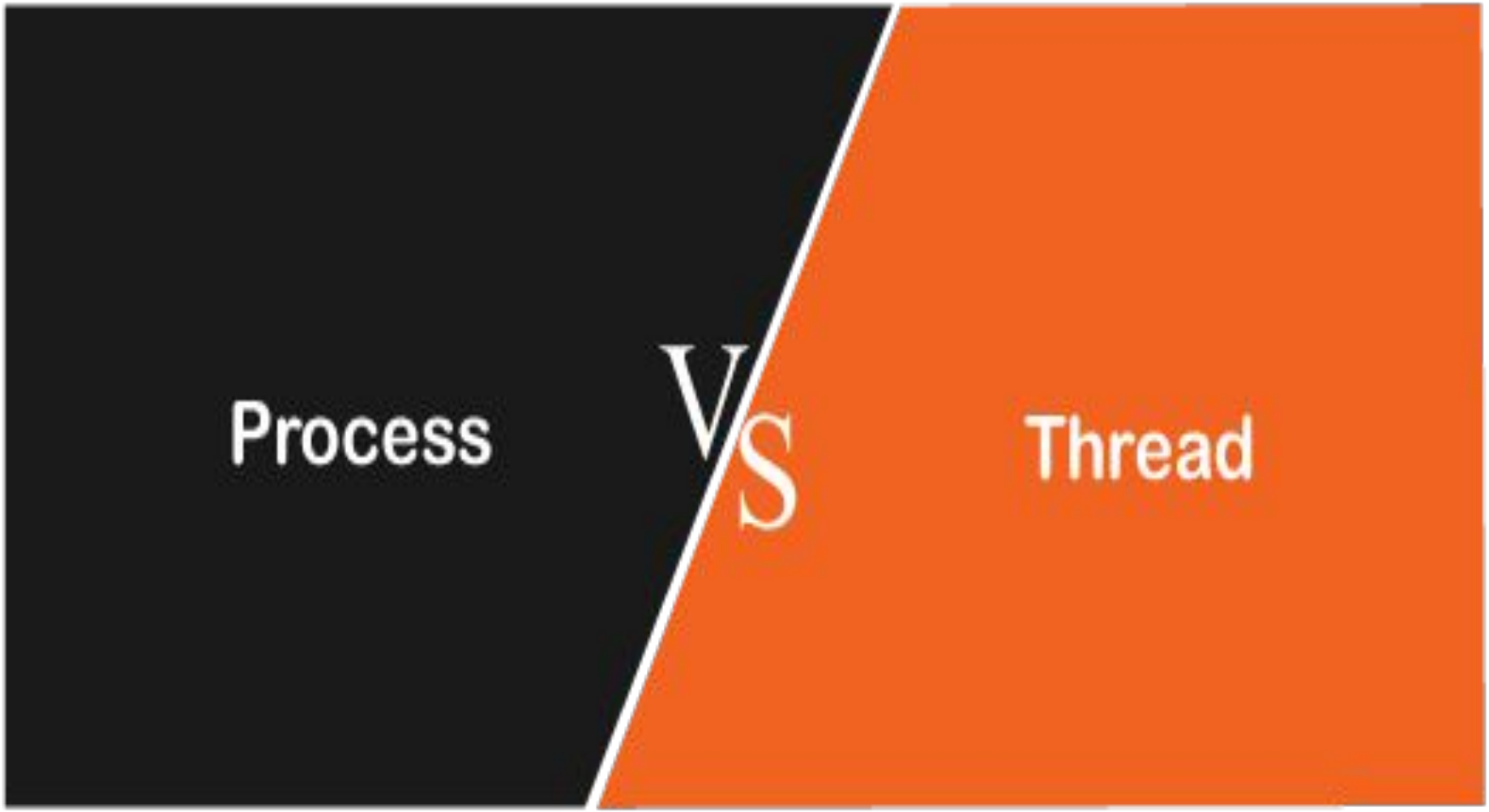
- A thread is a lightweight process.
- Example : Opening multiple tabs in the browser.
- A thread have 3 states: Ready, Running and Blocked.
- It improves the application performance using parallelism.





Single-threaded process and Multi-threaded process




Process
VS
Thread

Key Differences

Process

- A program is in execution.
- Not Lightweight.
- Takes more time to terminate.
- Takes more time for creation.
- Takes more time for context switching.
- Mostly isolated.
- Process does not share data.

Threads

- A segment of a process.
- Lightweight.
- Takes less time to terminate.
- Takes less time for creation.
- Takes less time for context switching.
- Threads share memory.
- Share data with each other.


Thank
you