Difference between scheduling algorithms and when to use each of them

First-Come, First-Served (FCFS):

- Imagine a queue: The first task to arrive is the first to get its turn.
- Use when you want things to be fair, but speed isn't a top concern. Simple but not great for quick tasks.

Shortest Job Next (SJN) / Shortest Job First (SJF):

- Think about it as picking the shortest line at a store.
- Use when you want to get things done as quickly as possible. Good for tasks with varying lengths.

Round Robin (RR):

- Imagine tasks taking turns like kids sharing a swing. Each gets a fixed time slice.
- Use when you want everyone to have a fair share of the computer's time, but it can cause interruptions.

Priority Scheduling:

- Like VIP access: Important tasks go first.
- Use when some tasks are more important than others. Be careful not to ignore lower-priority tasks.

Multilevel Queue Scheduling:

- Picture different lines for different types of tasks, each with its own rules.
- Use when tasks have different priorities or needs. Helps organize things better.

Multilevel Feedback Queue Scheduling:

- Similar to multilevel queues, but tasks can move between lines based on how long they've been waiting.
- Use when tasks' urgency or resource needs change over time.

Priority Preemptive Scheduling:

- Imagine a task cutting in line if it's really important.
- Use when important tasks need to jump ahead of others, especially if they need to respond quickly.

Least Recently Used (LRU):

- Like keeping the most useful things close by: Tasks that were used recently get preference.
- Use to manage memory or storage efficiently.

Earliest Deadline First (EDF):

- Think of tasks as needing to be done by a specific time. The earliest deadline goes first.
- Use when tasks have strict deadlines that can't be missed.

Fair Share Scheduling:

- Sharing resources evenly among users, like dividing pizza among friends.
- Use in situations where multiple people are using the computer fairly.

Remember, the best scheduling strategy depends on what you need: fairness, speed, meeting deadlines, or managing resources effectively. There's no one perfect way, but these strategies help handle different situations.