

Typical sequence of operation of computer at different periods of operating systems development.

Bare machine	setup	Load program	Input – process – output (cards) (printer)	Tear down		
Simple batch	setup	Load program	Input – process – output (cards) (printer)	Input – process – output (cards) (printer)	Input – process – output (cards) (printer)	Tear down
Batch with Off-Line satellite processors	setup	Load program (Mag. Tape)	Input – process – output (Mag. Tape) (Mag Tape)	Input – process – output (Mag. Tape) (Mag Tape)	Input – process – output (Mag. Tape) (Mag Tape)	Tear down
	Satellite processor	Input from cards to Mag tape	Output from Mag tape to printer			
Batch with Spooling – Simultaneous Peripheral Operation On-Line	Bootup – from disk	Standard programs permanently resident on disk. Jobs for programs to do submitted to system from cards to form job pool	Job 1 – Input – process – output (disk) Job 2 - Input – process – output (disk) Job 3 Input – process – output (disk) (disk)			
	I/O Channel	Input from cards to Disk	Output from Disk to printer			

Mutli-programmed			Several jobs from job pool on disk held in main memory at the same time	Processor switches between jobs when current job needs to wait for I/O from disk		
	I/O channel as above					
Interactive (Time-shared) and multi-programmed		Programs but also much data held permanently on disk (in individual user areas). Jobs submitted to system from terminal.	Several jobs from job pool on disk held in main memory at the same time.	Processor switches between jobs when current job needs to wait for I/O from disk or current job gets interrupted after a fixed time quantum has expired – to give interactive users speedier response		
		Input from terminals as well as cards, etc,	Output to VDU screens as well as printers			
	I/O Channel as before					