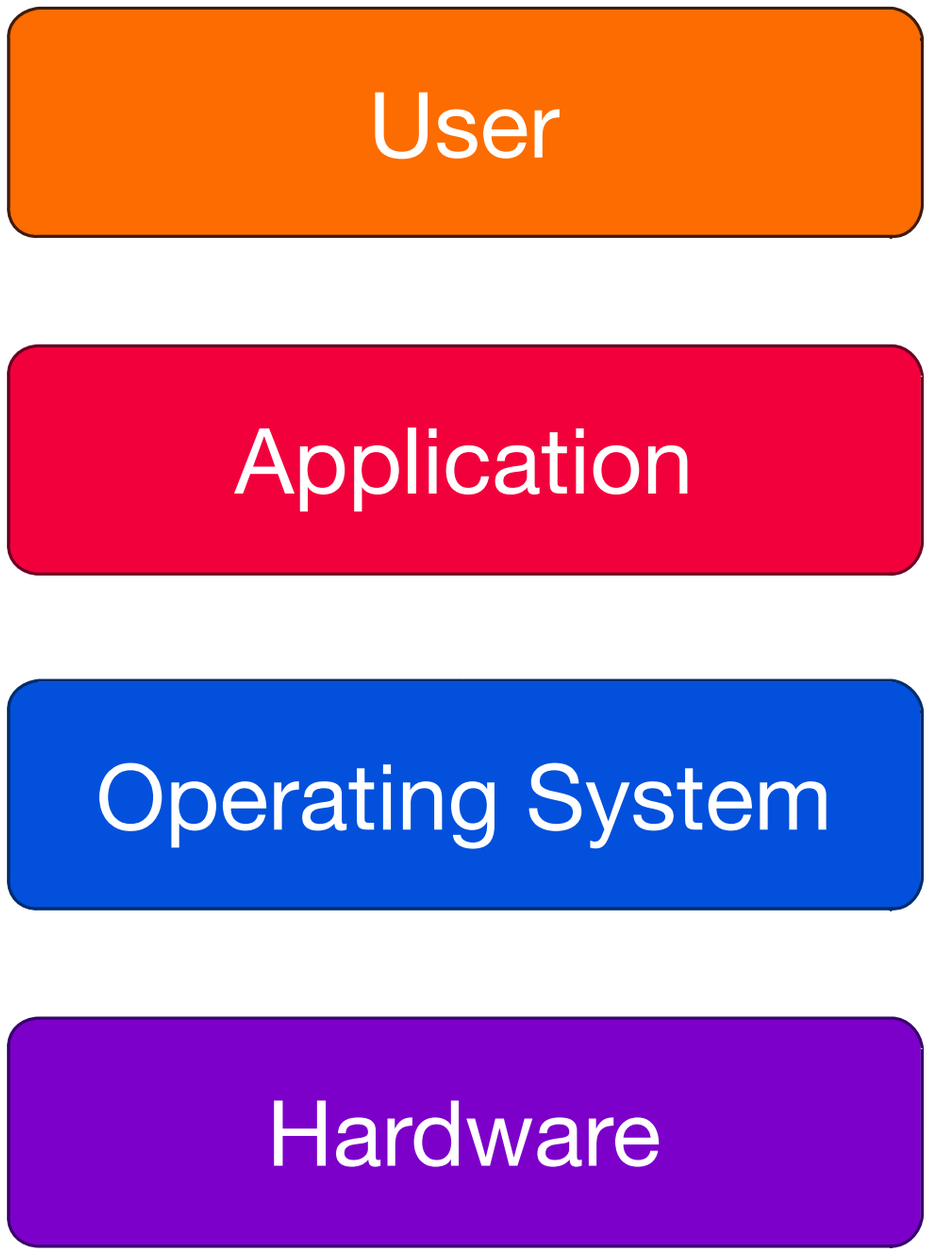
Introduction to Operating Systems

What is an Operating System

Software that manages hardware resources

Provides common services for applications



Characteristics of an OS

Whether multiple programs can run on it simultaneously: multi-tasking

Whether it can take advantage of multiple processors: multi-processing

Whether multiple users can run programs on it simultaneously: multi-user

Whether it can reliably prevent application programs from directly accessing hardware devices: protected

Whether it has built-in support for graphics

Whether it has built-in support for networks.

Features of an OS

Process Management

Interrupts

Memory Management

File System

Device drivers

Networking

Security

I/O

The History of OS

First Generation (1945-1945)

Developed during the war

Vacuum Tubes

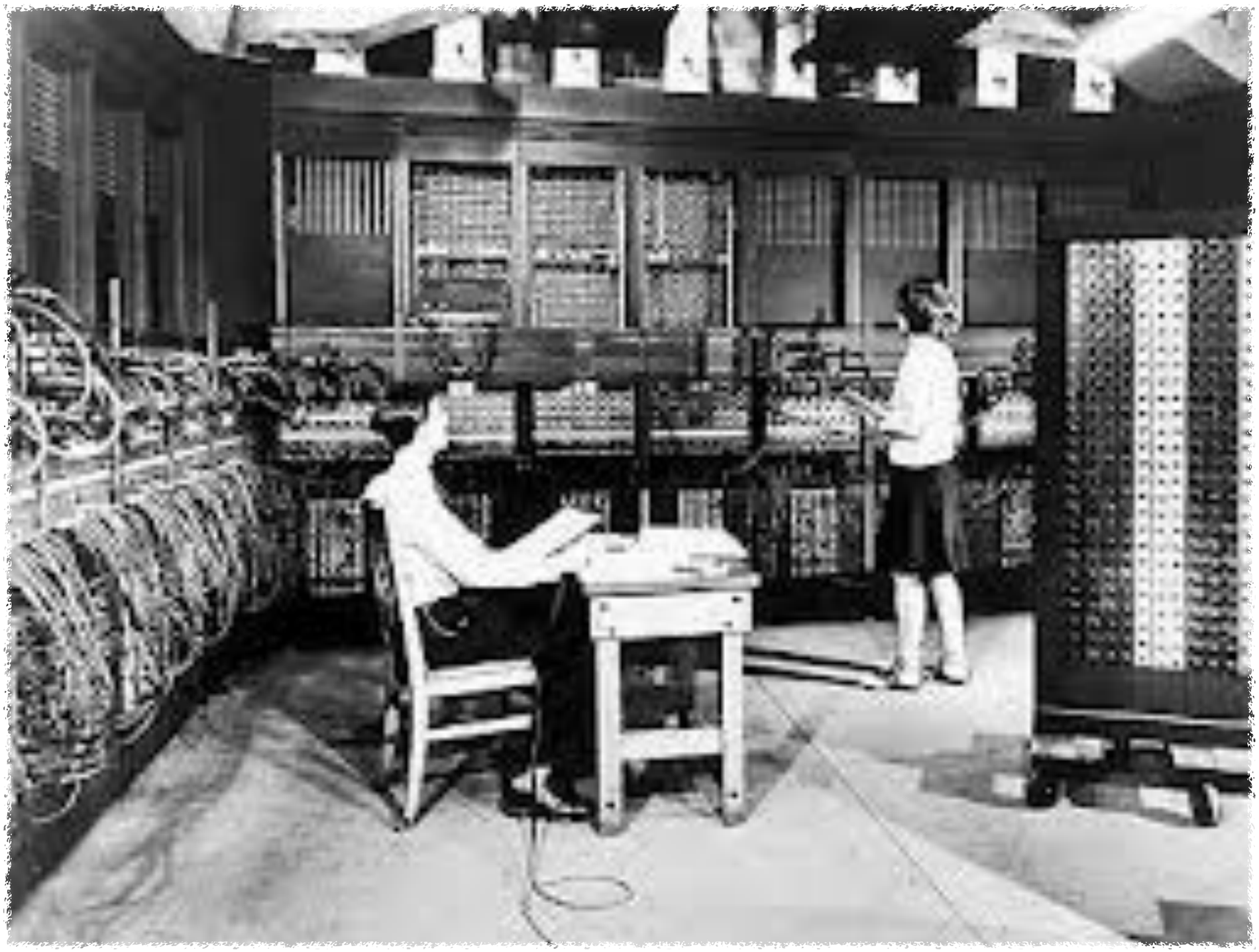
Many different automatic counting machines

Filled entire rooms

No Operating System

No Programming Language

Computers were hard wired to perform a task



ENIAC

Second Generation (1955-1965)

Transistors

More reliable

Became feasible to manufacture and sell computers

Jobs of computer operators became available

Batch jobs were introduced

First Operating Systems

IBM 659

Third Generation (1965-1980)

Integrated circuits replaced transistors

Start of multiprogramming led to a need for a more complex OS

Spooling

Concept of time sharing was introduced

Apple I

Fourth Generation (1980-Present)

Large scale integration

Directly led to the development of the personal computer

MS-DOS developed for the IBM PC

Macintosh 128k


Appearance
All Settings
Appearance


Game Center
Friend Request
Gilbert Solano has sent you a Game Cent...
App Store
New Updates Available
OS X updates are available from the App...
Messages
New Message from Graham Mc...
You there?
New Message from Kyle Olson
Are you free for lunch today?
FaceTime
Andrew Erpelding
Missed Call from Andrew Erpelding
Mail
Danielle Durr
Vacation
We just got back from our vacation to the beach. We visited Jamaica for five days and had a really relaxing time. We couldn't ha...