So You Want to Use Linux?

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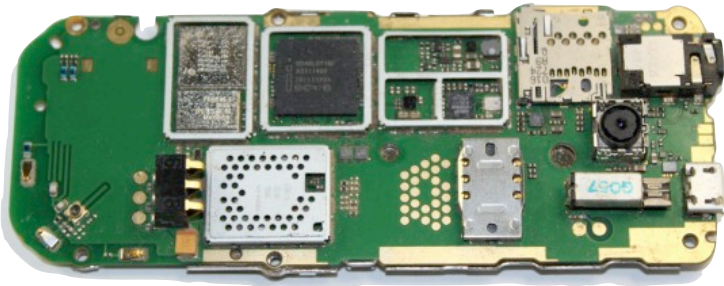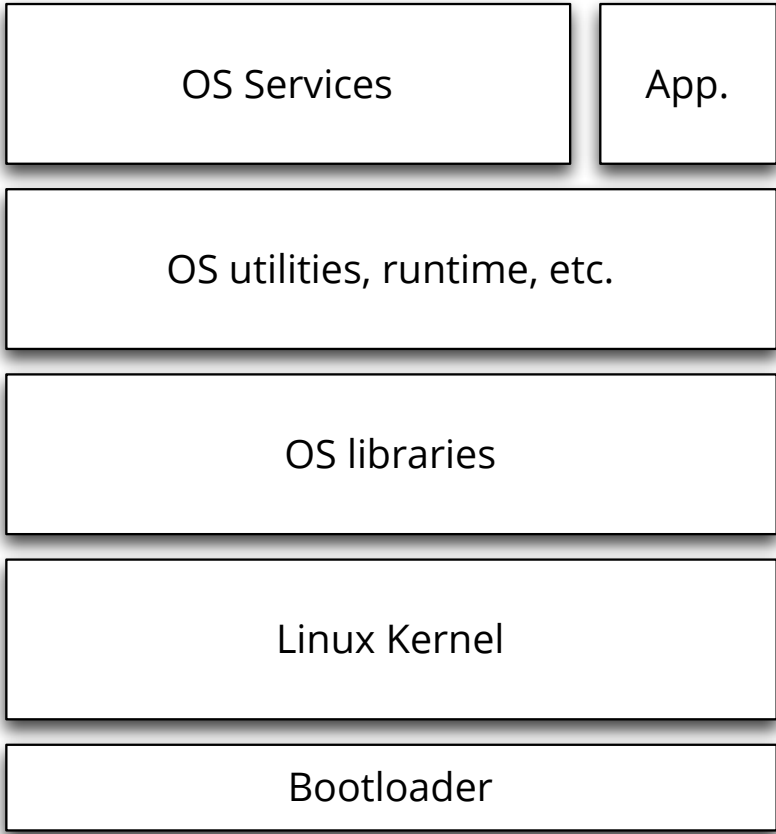
Demystify pieces and function

Demonstrate

How do we **develop** them?

Observations

Q&A

OS Services

App.

OS utilities, runtime, etc.
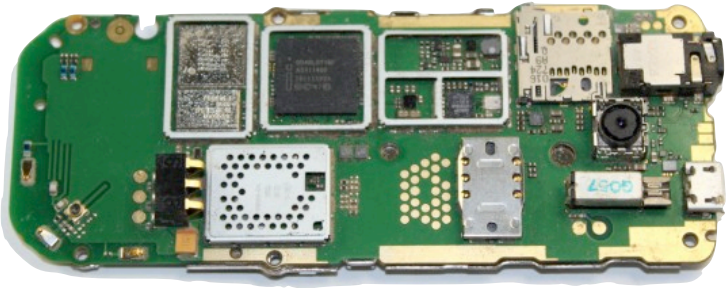
OS libraries

Linux Kernel

Bootloader

OS Services

App.

OS utilities, runtime, etc.

OS libraries

Linux Kernel

Bootloader

Initialize hardware
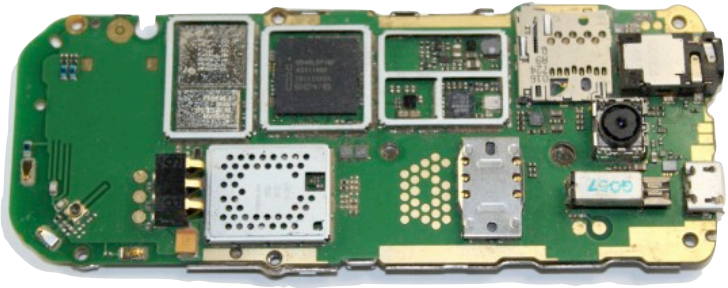
Call kernel

Program images

OS Services	App.

OS utilities, runtime, etc.
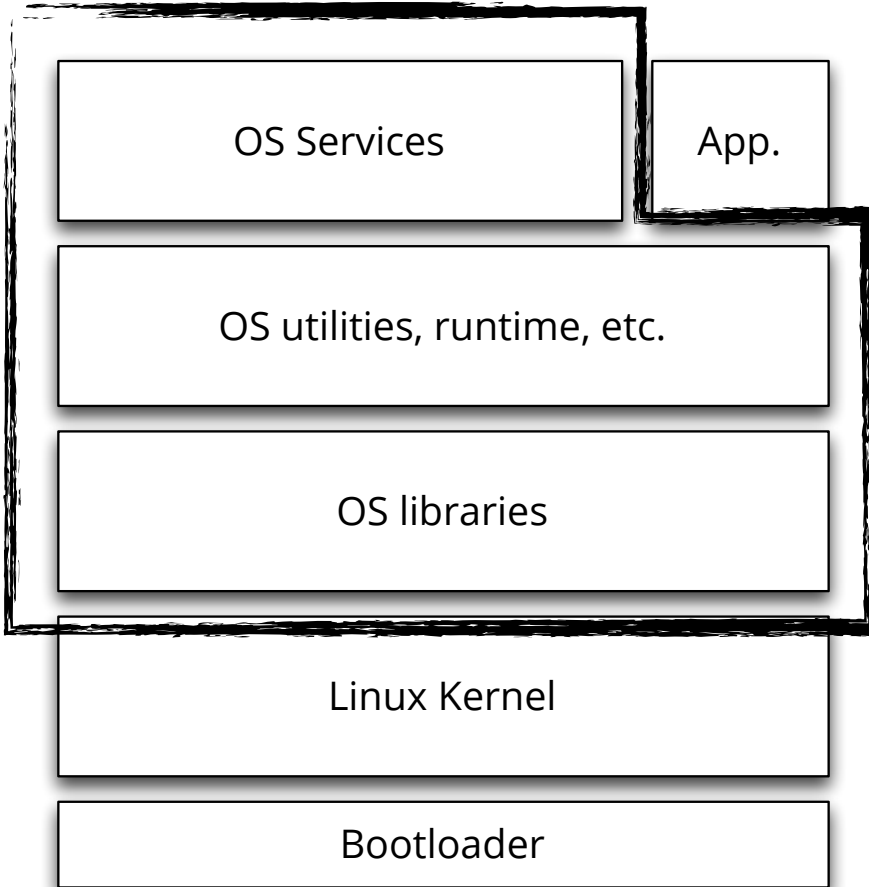
OS libraries

Linux Kernel

Bootloader

Initialize hardware

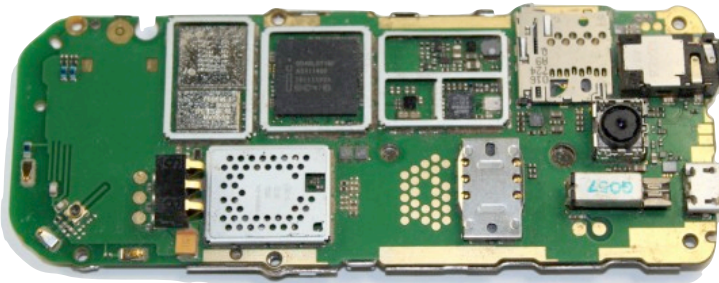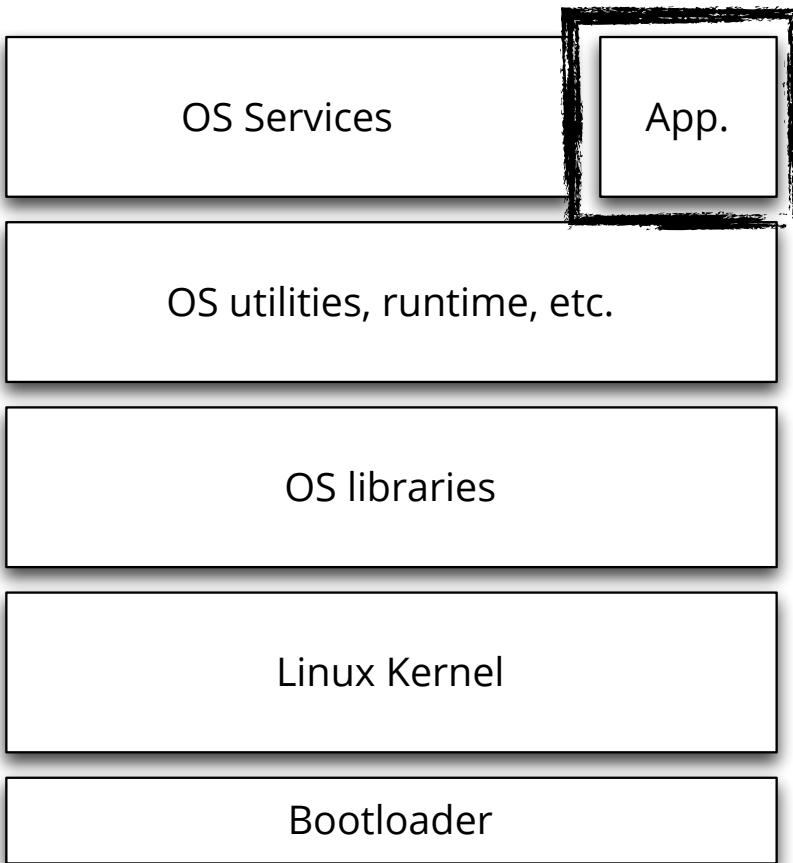Drivers provide interfaces

Manage resources

Scheduling

OS Services	App.

OS utilities, runtime, etc.

OS libraries

Linux Kernel

Bootloader

Programs and libraries

The first program: init

System-level services

Language runtimes

OS Services	App.

OS utilities, runtime, etc.

OS libraries

Linux Kernel

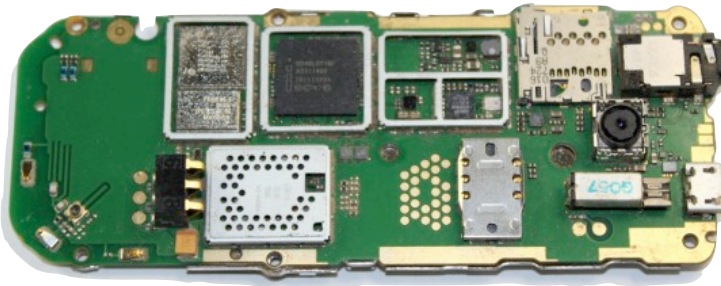Bootloader

What makes your device unique

GUI components

backend

Demo

Power-up to prompt

Often provided by chip
vendor

You modify to suite
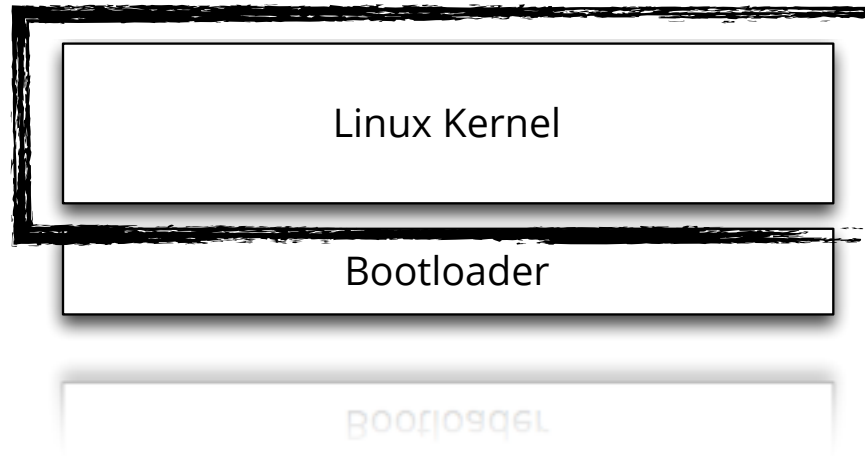components and
schematic, partitioning

Typical options:

U-Boot
uMon
custom

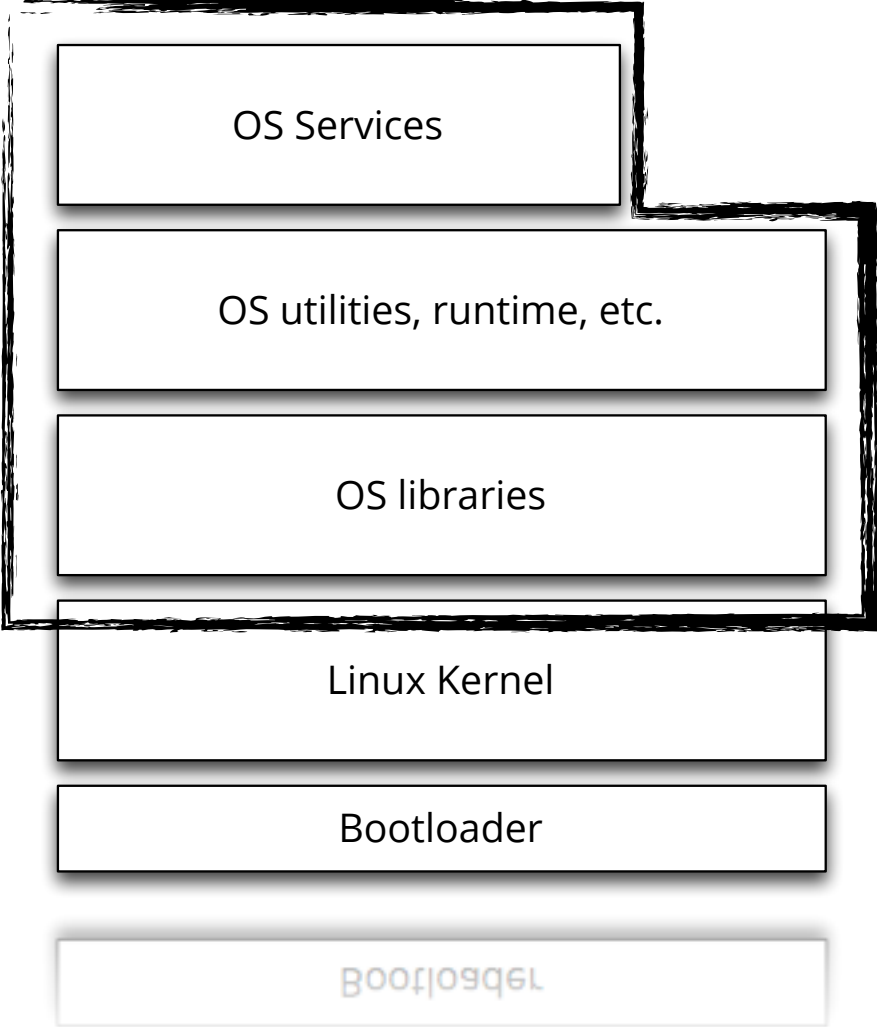Bootloader

Often provided by chip
vendor. You:

Add drivers

Declare connections,
device hierarchy, power
hierarchy

The chip vendor will offer something...

BEWARE

OS Services

OS utilities, runtime, etc.

OS libraries

Linux Kernel

Bootloader

Heavily influences
development
mechanics.

Buildroot
Open Embedded
Yocto
Pragmatux
Android?

| OS Services |
| OS utilities, runtime, etc. |
| OS libraries |
| Linux Kernel |
| Bootloader |
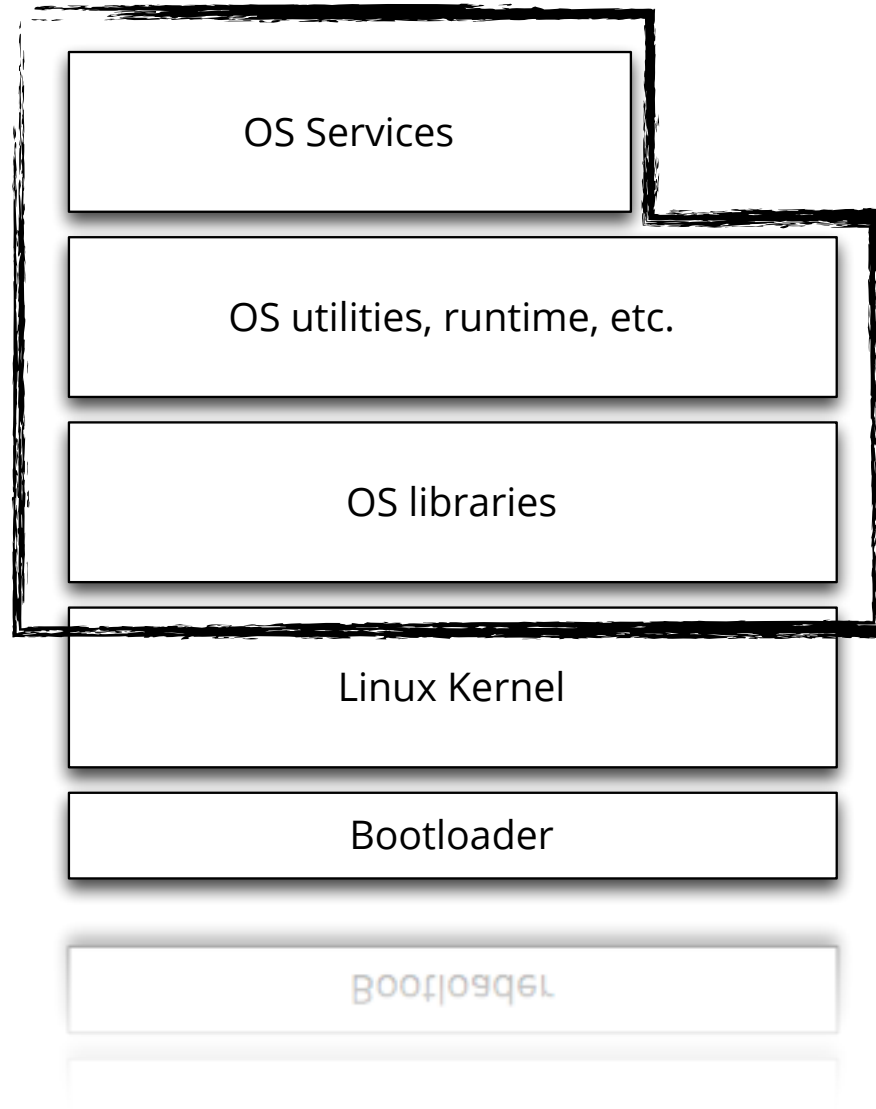
Graphical toolkit

Application framework

Particular libraries

OS Services	App.

OS utilities, runtime, etc.

OS libraries

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Bootloader
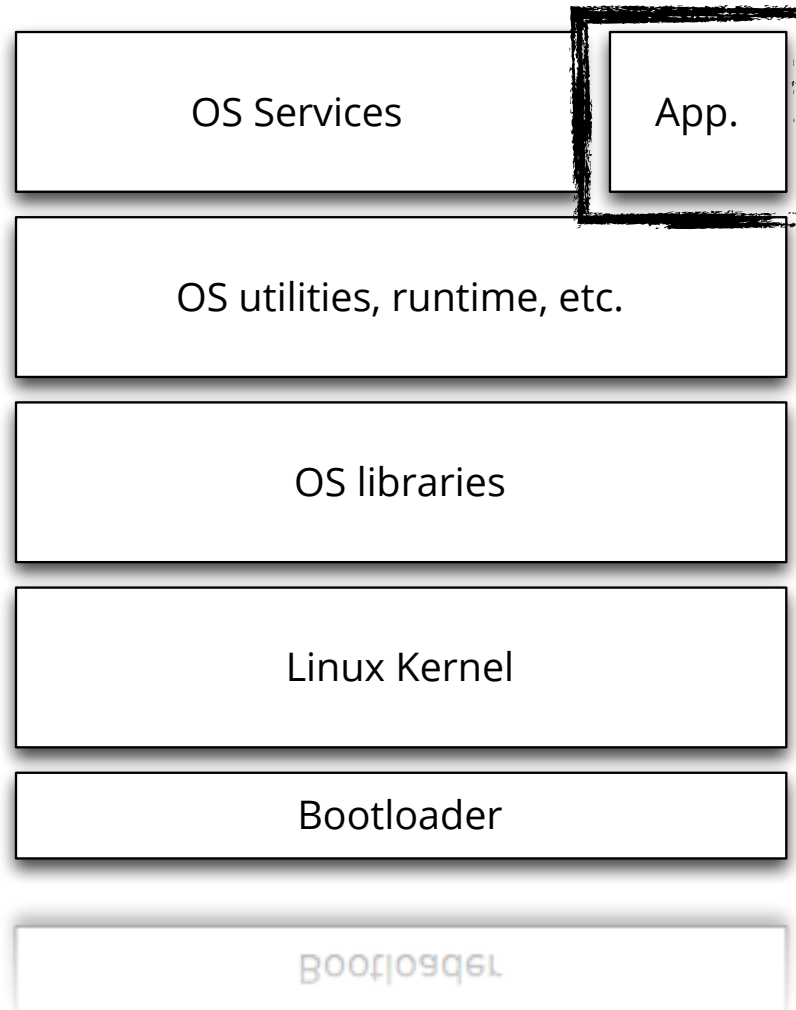
Phasing

Begin on processor development kit

Application development can begin on workstations

Provide ample prototypes

Licensing

attribution

source distribution

may affect code your code

Working with Open Source Software

Don't diverge too far from the project

Extend your development team by working with the community

Send changes upstream

Observations and Recommendations

A large part of a Linux project is the platform

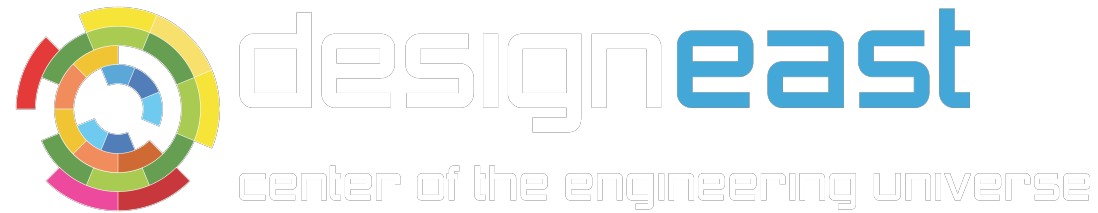If this is your first project, get help with the platform

Observations and Recommendations

Think beyond the initial images:

Development workstations

Tracking OS upgrades

Deploying releases to field

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