Patika.dev & Ford Otosan

Full Stack (.Net & Vue.js) & Cloud Programı

Week 9

Agile Methodology

Agile

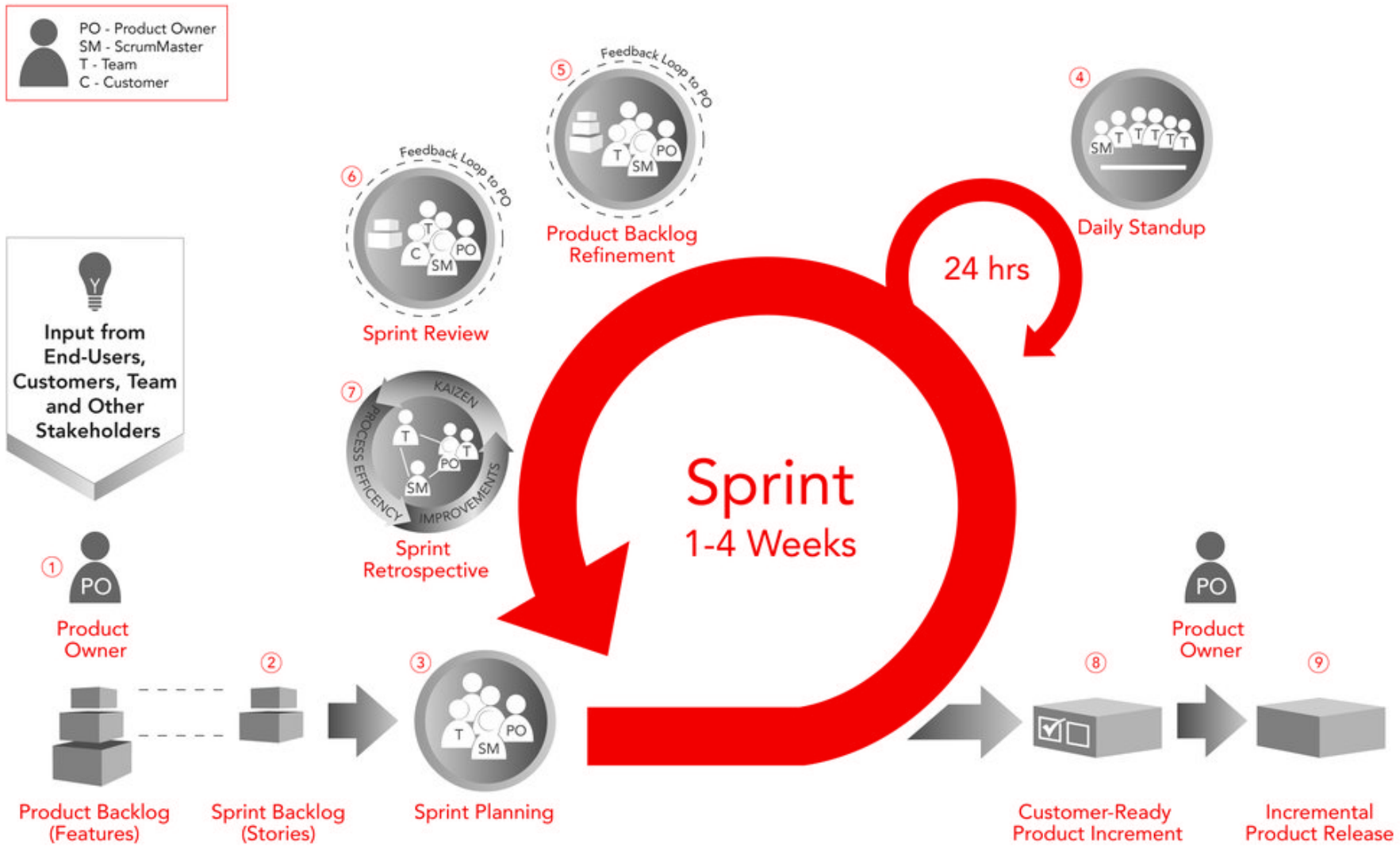
Agile is an iterative approach to project management and software development that helps teams deliver value to their customers faster and with fewer headaches.

Instead of betting everything on a "big bang" launch, an agile team delivers work in small, but consumable, increments. Requirements, plans, and results are evaluated continuously so teams have a natural mechanism for responding to change quickly.

Scrum

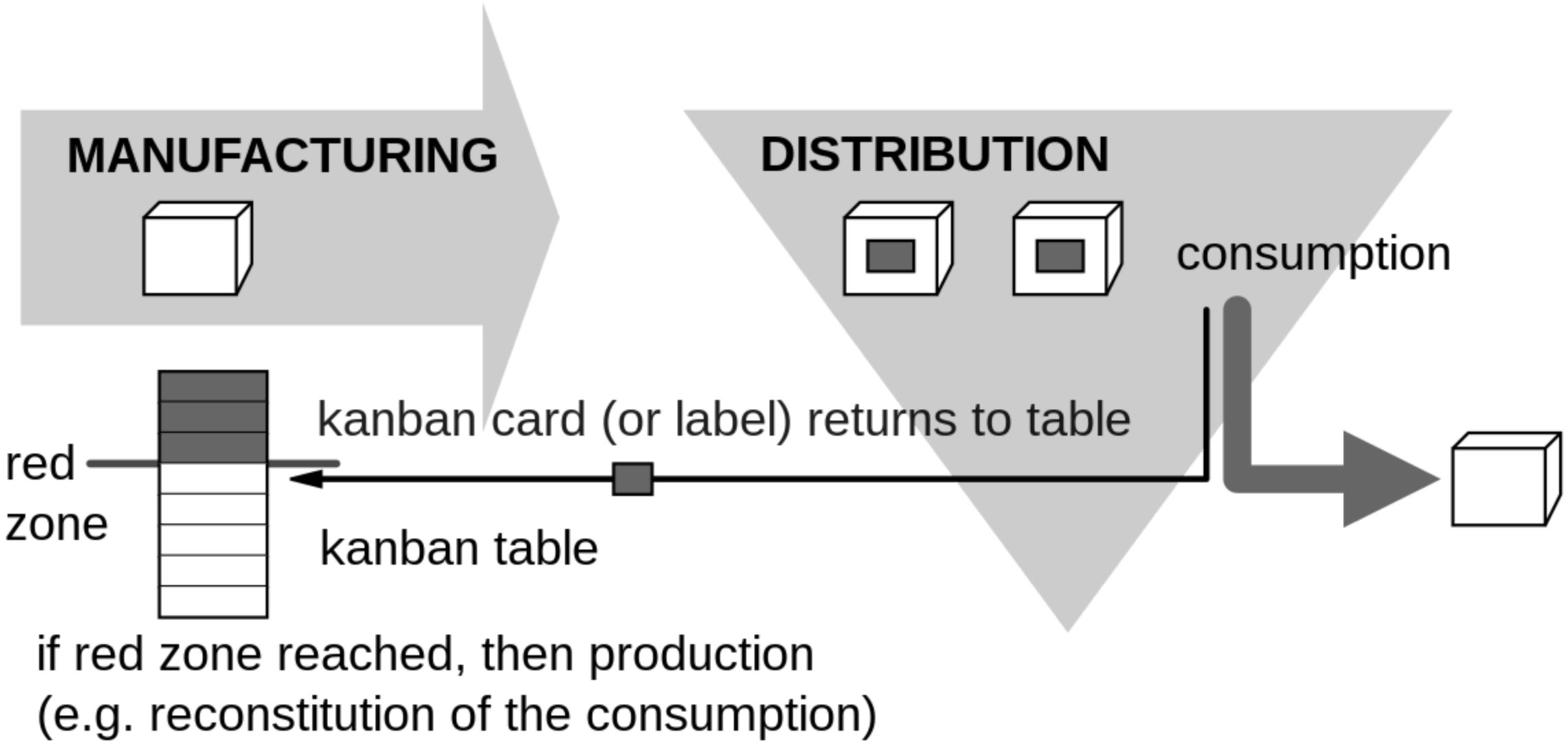
Scrum is an agile project management framework that helps teams structure and manage their work through a set of values, principles, and practices.

How Scrum Works

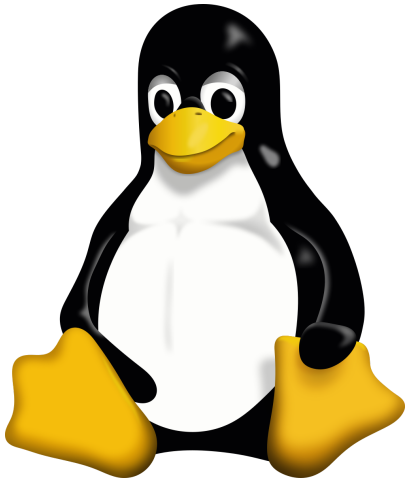


Kanban

Kanban is a popular framework used to implement agile and DevOps software development. It requires real-time communication of capacity and full transparency of work. Work items are represented visually on a kanban board, allowing team members to see the state of every piece of work at any time.


MANUFACTURING
DISTRIBUTION
consumption
kanban card (or label) returns to table
red
zone
kanban table
if red zone reached, then production
(e.g. reconstitution of the consumption)

Linux



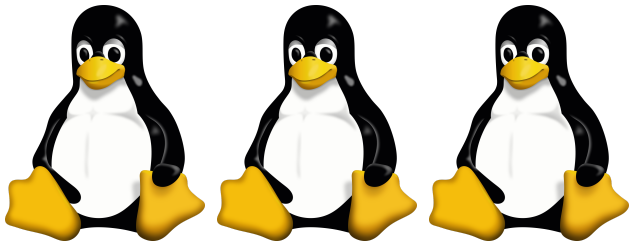
What Linux is?

Brief history of Linux

Linux, computer operating system created in the early 1990s by Finnish software engineer Linus Torvalds and the Free Software Foundation (FSF). While still a student at the University of Helsinki, Torvalds started developing Linux to create a system similar to MINIX, a UNIX operating system.

What a Linux Distribution or Linux Distro is?

Most downloaded distros



Installing Linux

- Bare Metal
- Virtual Machine
- Arm vs x86/x64

Introduction to Shell

A shell is a command-line interface that allows users to interact with a computer's operating system by typing commands and executing scripts. Shell programming enables users to automate repetitive tasks, run commands and scripts in a specific sequence, and customize their computing environment to suit their needs.

Shell Types

- Bourne shell (sh)
- C shell (csh)
- Korn shell (ksh)
- Bourne-Again shell (bash)
- Z shell (zsh)

Essential Linux Commands

- ls
- cd
- mkdir
- rm
- mv
- chmod
- cp
- find
- grep

Essential Linux Commands cont

- vi
- cat
- tar
- ps
- kill
- top
- ifconfig
- ping
- du

Linux Administration

Inputs / Outputs

- stdin : read
- stdout : ls
- stderr :

File / Folder Operations

- ls
- touch
- chmod, chown, chgrp, umask

Environment Variables

- printenv
- $PATH, export
- set

Processes, Logs and Job Control

- top
- ps
- tail

Scheduling / Cron

- cron
- systemctl
- &

User Management

- adduser
- addgroup
- usermod
- deluser
- delgroup

Disk / Volume Operations

- disk
- disk partition
- file system
- file

Disk / Volume Operations cont.

- fdisk
- mount
- df
- du

Network (TBD)

Container

What is Container?

A container is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing environment to another.

A container image is a lightweight, standalone, executable package of software that includes everything needed to run an application: code, runtime, system tools, system libraries and settings.

Container technology is almost as old as VMs, although IT wasn't talking about the topic until Docker, Kubernetes and other tech made waves that caused a frenzy of activity.

Automation

Why we need Automation?

```
- Automation can improve efficiency by streamlining repetitive and time-consuming tasks.
- It can reduce the risk of human error and increase consistency and accuracy.
- Automation can free up human resources to focus on more complex and creative tasks.
- It can help reduce costs by reducing the need for manual labor and increasing productivity.
- Automation can also improve quality by reducing variability and improving standardization.
- By automating tasks, we can save time, increase throughput, and meet deadlines more reliably.
- Automation can help organizations stay competitive by enabling faster and more efficient processes.
- It can also enhance safety by reducing the need for manual intervention in hazardous or high-risk environments.
```

Automation tools

- Ansible
- Puppet
- Chef
- SaltStack
- Terraform
- vagrant

Network

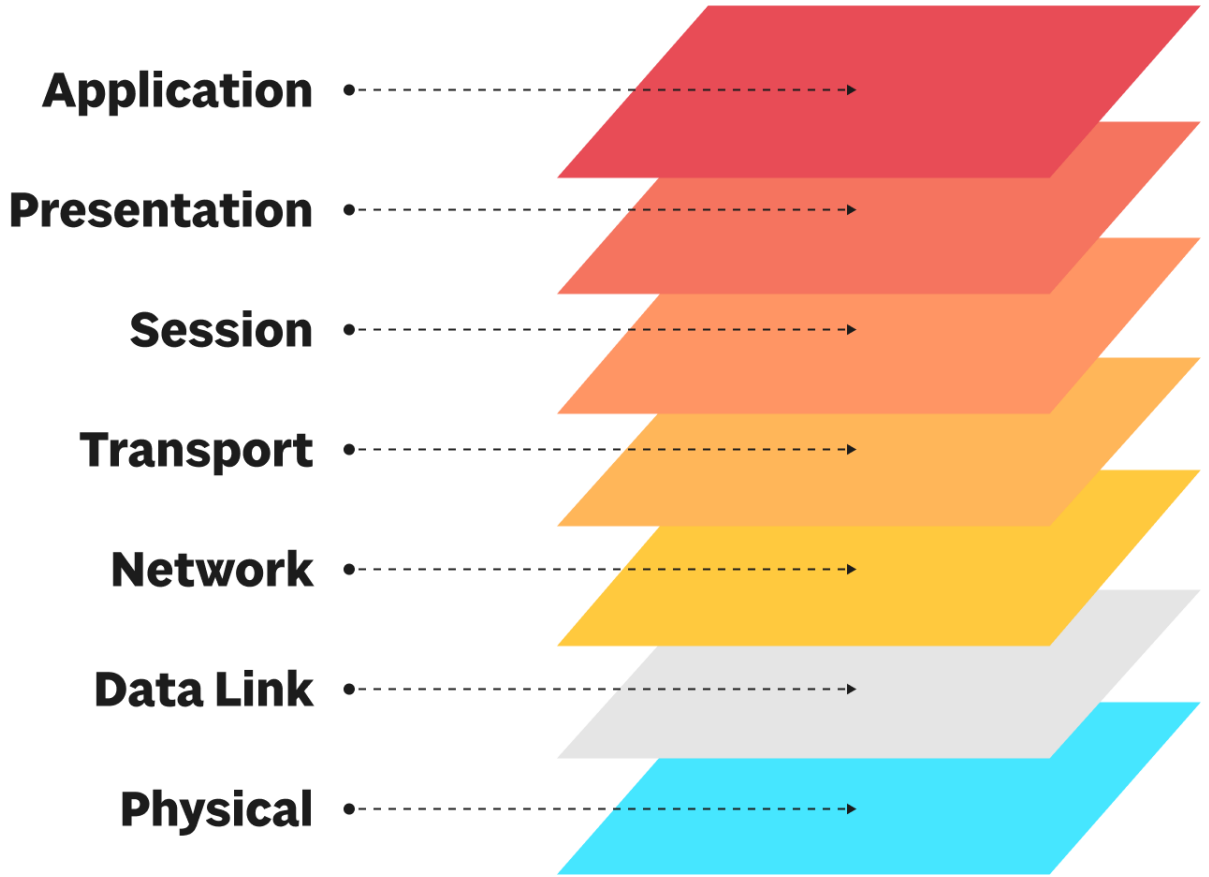
What is Computer Network

A computer network is a connection between two or more network devices, like computers, routers, and switches, to share network resources.

Type of Networks and Topologies

- PAN (Personal Area Network)
- LAN (Local Area Network)
- MAN (Metropolitan Area Network)
- WAN (Wide Area Network

The OSI Model



Protocols

- Application layer (ex. DHCP, DNS, HTTP, SMTP, MQTT, SNMP, FTP, LDAP)
- Presentation layer
- Session layer (ex. SOCKS, SMPP)
- Transport layer (ex. TCP, UDP)
- Network layer (ex. IP, ICMP)
- Data link layer (ex. IEEE 802.11, CAN)
- Physical layer (ex. RS-232, RS-485, ISDN, USB, PCI-x)

Network Devices

- Switch
- Router
- Gateway
- Access Point

NoSQL

NoSQL databases (aka "not only SQL") are non-tabular databases and store data differently than relational tables. NoSQL databases come in a variety of types based on their data model. The main types are document, key-value, wide-column, and graph. They provide flexible schemas and scale easily with large amounts of data and high user loads.

- Document databases (MongoDB)
- Key-value stores (Redis)
- Column-oriented databases (Cassandra)
- Graph databases (Neo4j)

Many thanks.

linkedin@erhansiraci