BOOTCAMP 2020

WELCOME!

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रapa Learning

Knowledge As A Service
TRITECH SAMVIT

INTRODUCTION

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WE DID GOOD IN 2019 ☺

I remember SOLID principles and clean code the most

...start thinking in the right direction

it's a healthy habit that we develop gradually as an engineer.

will help throughout our career..

it shed exposure on how software field would be.

Space out the concepts, esp. GitHub; relevance to project

OO, C#, C++, JavaScript were effective and practical

Venu can take all the classes

...LOOKING FORWARD TO 2020!

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BOOTCAMP THEME

UNDERSTANDING TO APPLICATION

Source:
A Model of Learning Objectives
Iowa State University Center of Excellence in Learning and Teaching

OUTCOMES

Commitment 'I **do** what I say'	Estimate Commit Hustle Complete
Span technologies 'I look for **best practices**'	Reach out to the state-of-the-art
Production-grade code 'It's **more** than make-it-work'	Engineer a Product
Maintain & Refactor '**Better than before**'	Improve Incremental
Collaboration 'I contribute to our **goal**'	Teamwork
Efficiency and Effectiveness 'Our **time** is important'	Max outcome for invested effort
Confidence 'I **can** do it'	Technical familiarity
Assertiveness 'I **participate**'	Own. Unmute and speak ☺

MY PROGRAM WORKS.
What next?

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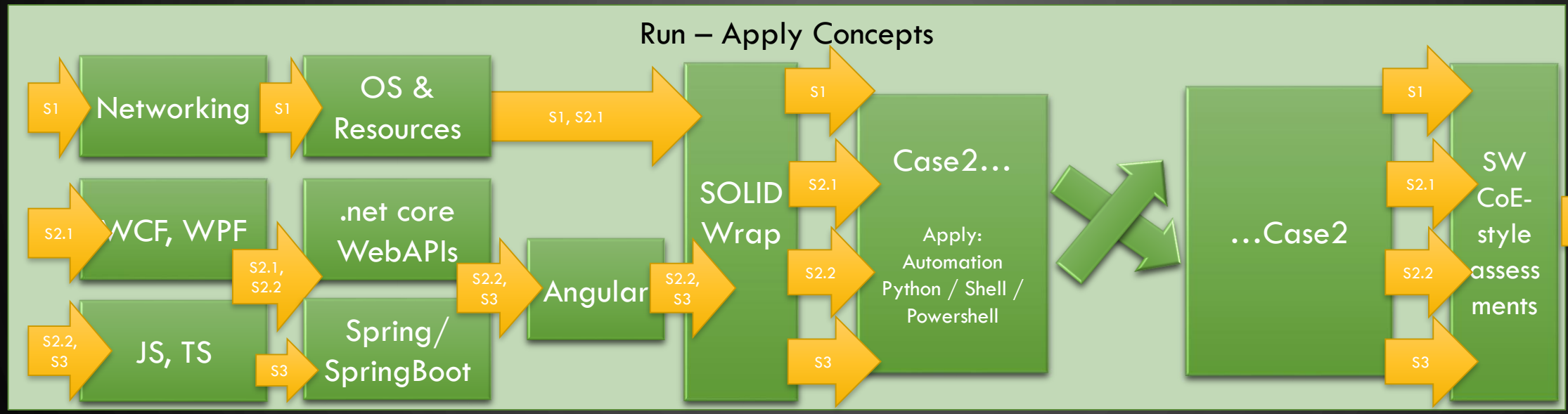

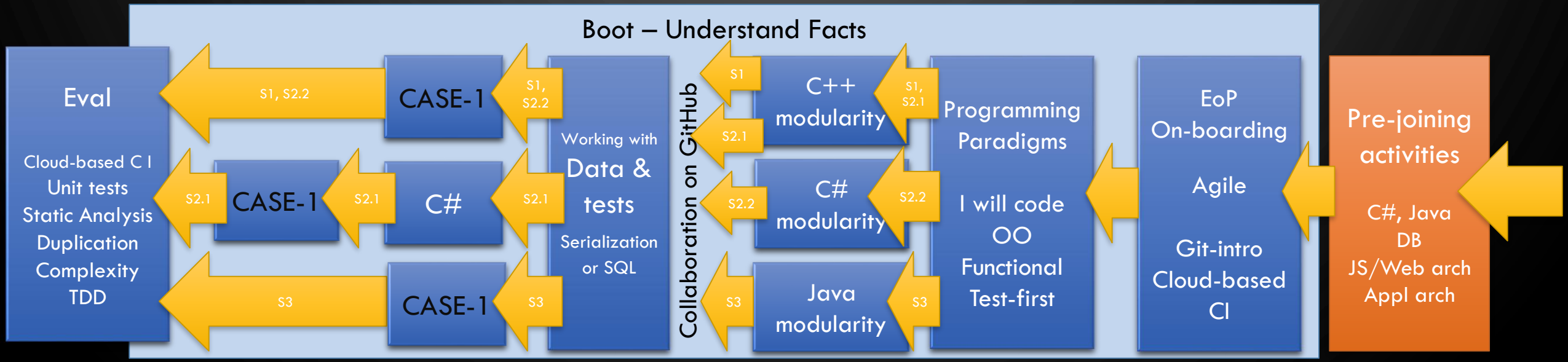

GET STARTED

HTTPS://ENGIN-BOOT.GITHUB.IO/GET-STARTED/LOOK-FORWARD.HTML

WHAT'S IN A NAME?

HTTPS://WWW.MENTIMETER.COM/S/208DBB40DD8C33811EDFABFDA608F484/BE8791380FB7

Correct	Precise
Salary will be paid	Date, per month, agreed amount, breakup, payroll
Company will pay salary on… for … amount …	Bank account, advance, bonus, whose, who will pay, currency, mode of payment, why
My bank transactions are secure Bank secures…. Customer secures….	Secure Password, secure connection, non-public nw, OTP, personal details, encryption for req and resp, Secure from {virus, hackers…}
	Name of the bank, transactions – online and offline, mode of txn, txn-id, report of vulnerability Security standards, preconditions, algos
My watch is water-proof	Depth, pressure, std time of immersion, brand, type, purchase date, accuracy of time/sync, warranty, type of water proof
	Water resistant, splash resistant, sweat resistant Charging time, what should not happen after immersion pH level, owner/purpose/swimming/dips, temperature,
The address shall be retrieved getAddress getAddressUsingSQLonOracle getBillingAddress	Home, office, whose, purpose, why is important, who is retrieving, component, from where, temporary, format, physical or PObox, how it is retieved, how it is presented

WHAT IS ACCEPTABLE ?

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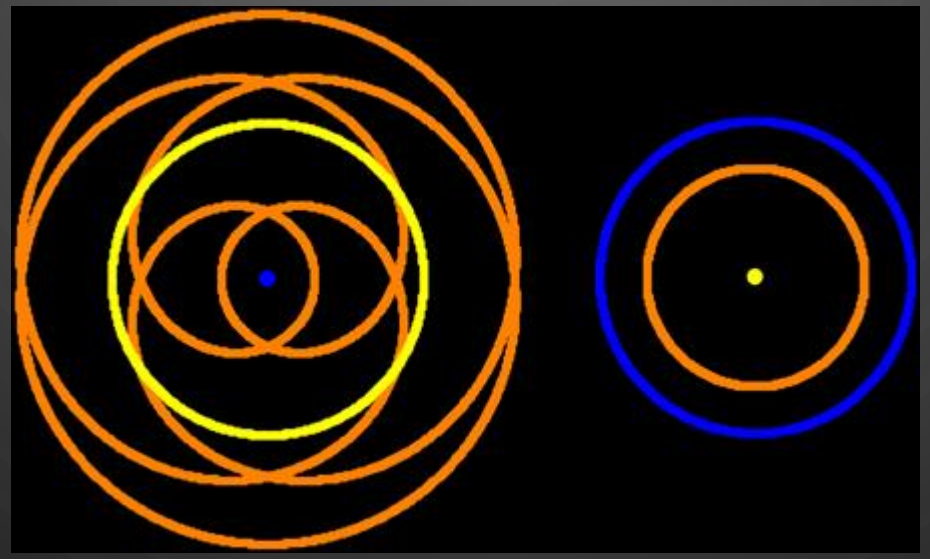
MODEL = REALITY ?

Business / Efficiency

Geocentric:
'Earth is at the center'



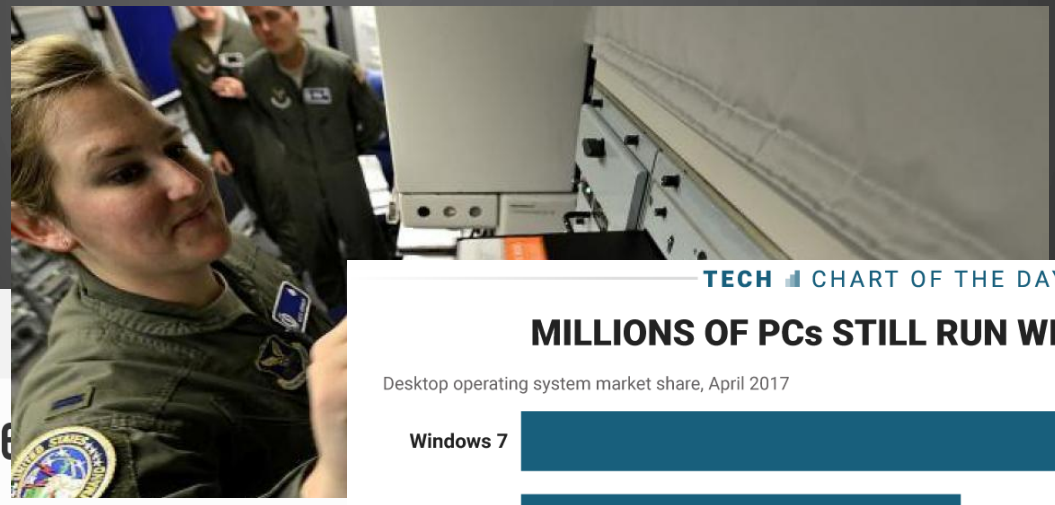
Heliocentric:
'Sun is at the center'

https://www.researchgate.net

SOFTWARE IS HARD TO CHANGE ?

- WINDOWS XP, WINDOWS 7 ARE STILL AROUND
- CHANGE SOMETHING IN HTML
  → WHICH BROWSER WILL BREAK?
- DON'T DO ANYTHING
  → MY APP DOESN'T WORK ON ANDROID Q

SOFTWARE FALL-OUT



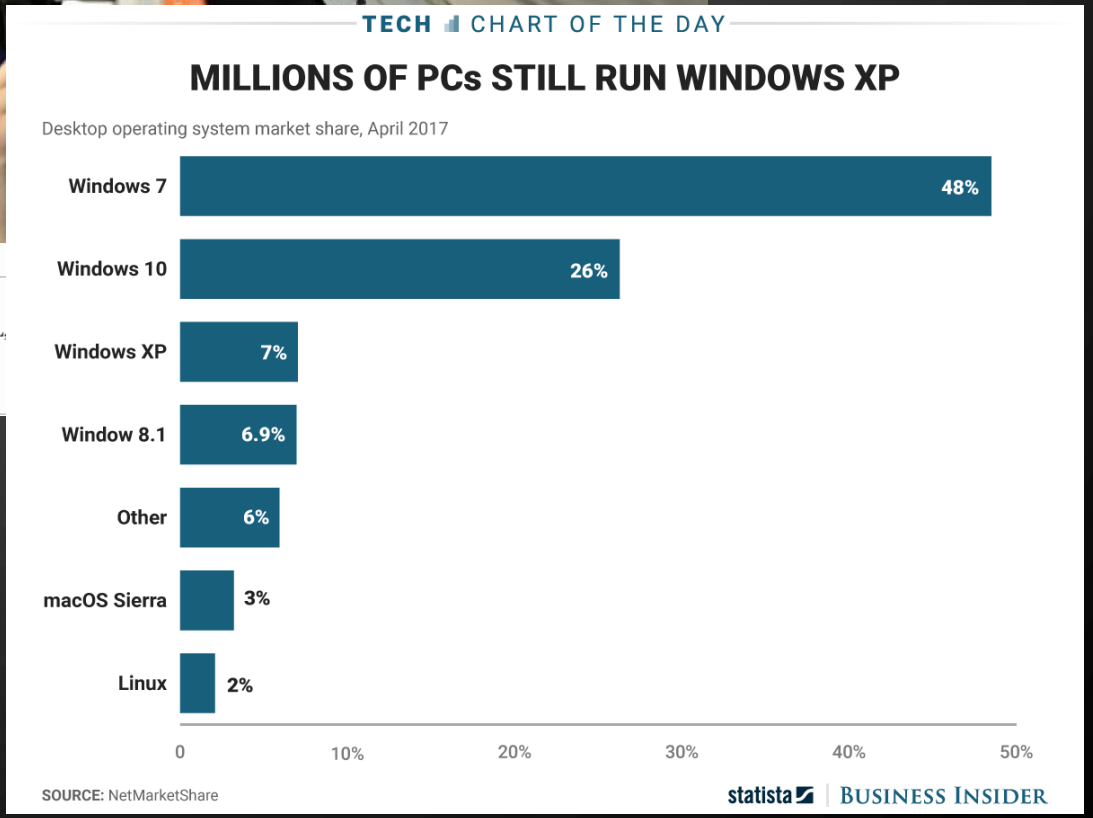
Jobs

Cleveland, OH

MAY
17

Programmer / De

Good Knowledge of IBM Mainframe technologies such as COBOL, JCL, and CICS. Good verbal and written communication skills....

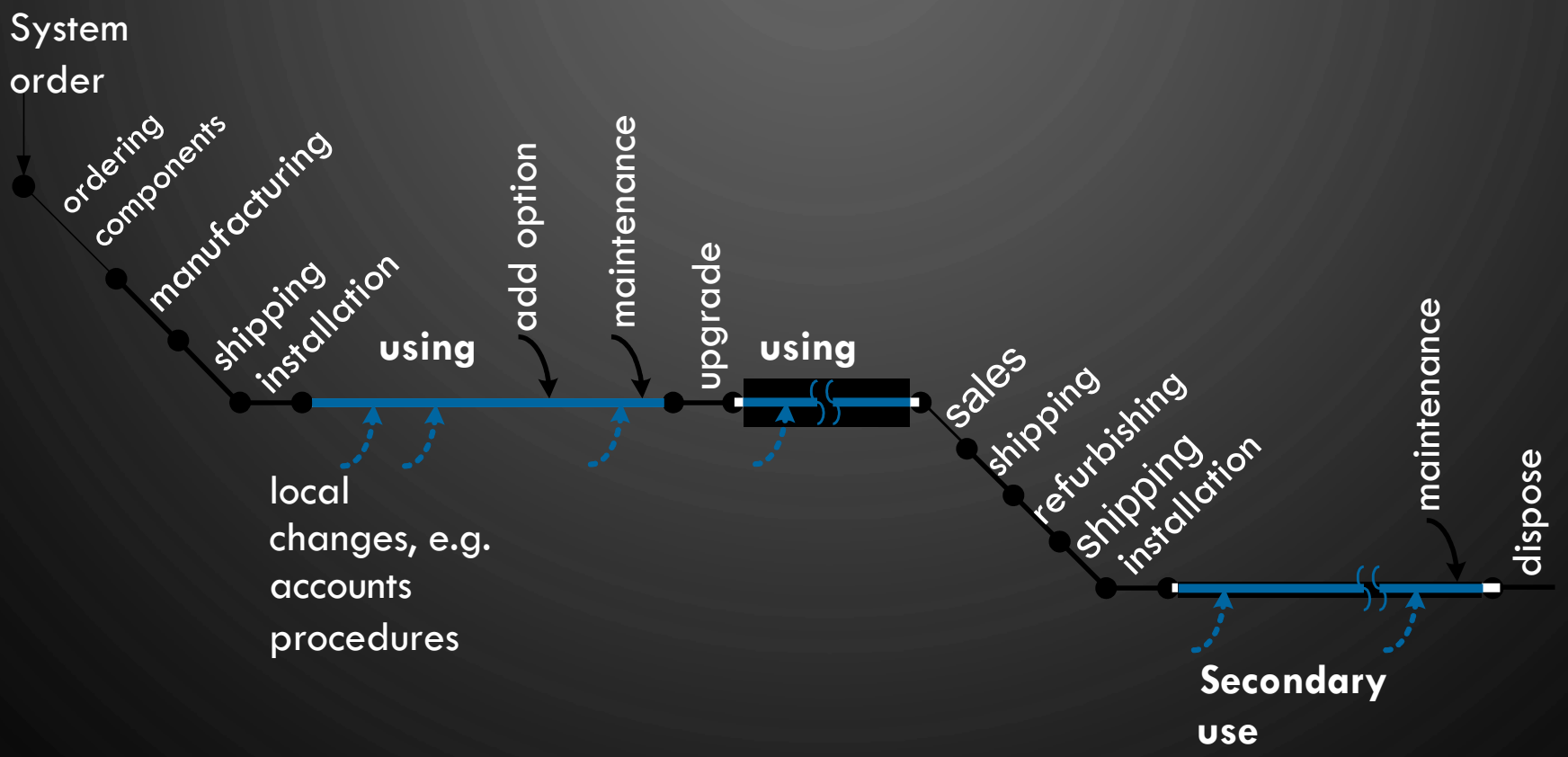


WHY DO THINGS BECOME OBSOLETE?

- TECH EVOLUTION
- ADVANCE
- NEEDS WILL CHANGE
- MORE EFFICIENT WAYS COME UP
- FIND NEW PROBLEMS TO SOLVE
- MORE EFFICIENT WAYS
- SPREAD OF TECHNOLOGY
- MORE POSSIBILITIES
- MORE WITH LESS COST
- MORE COMPUTATION POWER
- SMALLER FORM FACTOR
- VULNERABILITIES ARE FIXED
- IMPROVE OVERALL EXPERIENCE

- OLD DEVICES CANNOT HANDLE NEW DATA
- INTEGRATED SYSTEMS = OLD USAGE GOES DOWN
- LOSS OF COMPATIBILITY
- COST OF MAINTENANCE INCREASES
- KNOWLEDGE BURDEN
- OLD LANGUAGE = LIMITED VOCAB
- NO UPGRADE PATH

- DIFFERENT PARTS OF THE SYSTEM HAVE DIFFERENT GENERATIONS
- CTQ / ACCEPTANCE CRITERIA
- WHY?


System order
ordering components
manufacturing
shipping
installation
using
add option
maintenance
upgrade
using
sales
shipping
refurbishing
shipping
installation
maintenance
dispose
local changes, e.g. accounts procedures
Secondary use

System-software Lifecycle example

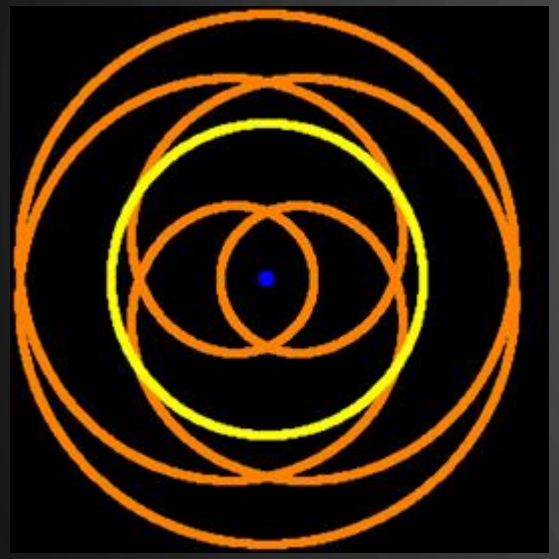
- 2010: Switched from 'old' FPGA+XP-PC-board to 3 XP-PCs
- Last-time-buy of boards

- 2010 – 2014: Several SPs, PC-changes

- Apr 2014: End of Win XP support
- WES2009 release for main PC. But 1.5 day upgrade time
  Other PCs remain on Win XP. Whitelisting for security.

- 2016: End of OEM agreement to ship Win XP →Cannot produce
  No PCs available that can run Win XP →Cannot repair
- Win7 release for PC-based systems. But extra RAM and license costs

- Jan 2019: End of WES2009 support →Cannot service
  Jan 2020: End of Win7 support →Cannot service, cannot sell
- Win10 release for PC-based systems



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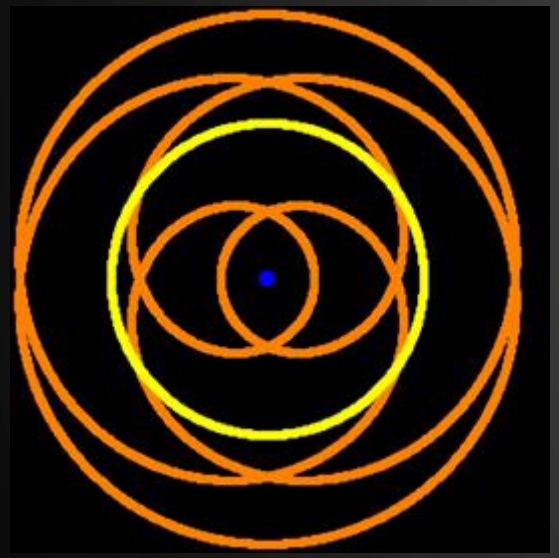
- Code and Test out-of-sync
- Docs and code out-of-sync
- Adding vs Changing
- Boundaries vs Modules
- Assumptions vs Life



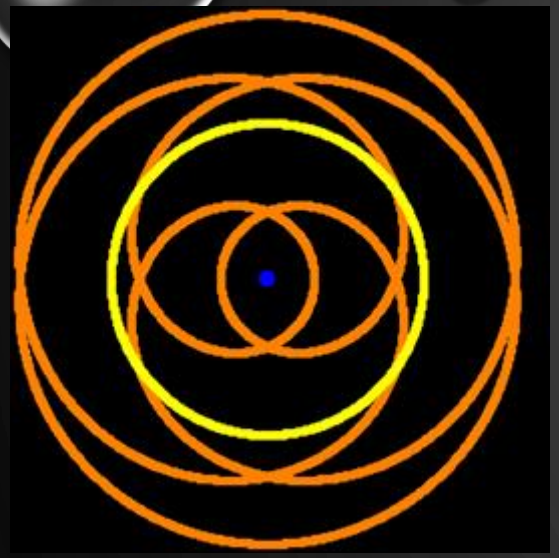
IN TODAY'S WORLD…

- JAVA SPRING
- ZUUL PROXY
- OAUTH2 SERVER
- EC2/VM ON CLOUD
- AMAZON RDS
- ELK STACK
- D3JS

- Cloud Firestore
- Python Scripting
- PowerBI

THE JOURNEY

- MODEL IN-LINE WITH REALITY
- EASY TO READ
- EASY TO MAINTAIN



YESTERDAY'S EXERCISE
WHAT IS HARD

- GitHub usage, running code & check output
  - Pipeline + cloud-hosted dev
- YML file path (C#)
  - collections/collections: duplication of the repo name
- README.md
  - Just document vs. Markdown standard!
- IntelliJ incompatibility
  - Environment vs task at hand
- Deleted cs file, how to recover in github, cloning, classroom

WHY?
<<

- GITHUB?
- MD?
- ACTIONS?
- TESTS?

SELF-REFLECTION

Yesterday's You

is not

Today's You

THE MISMATCH…

```
ArrayList<String> names_copy = new ArrayList<String>(names);
for (int i = 0; i < names_copy.size(); i++) {
    String removed = names_copy.get(i);
    if (removed.startsWith("oggy")) {
        names.remove(removed);
```

```
static void RemoveOggy(List<string> names)
{
  List<string> Names = new List<string>(names);
  foreach (var name in Names)
  {
      if(name.StartsWith("oggy")) {
          Console.WriteLine($"Need to remove {name}!");
          names.Remove(name);
      }
  }
}
```

THE MISMATCH…

```
static void RemoveOggy(List<string> names)
{
    names.RemoveAll(name => name.StartsWith("oggy"));
}
```

Method

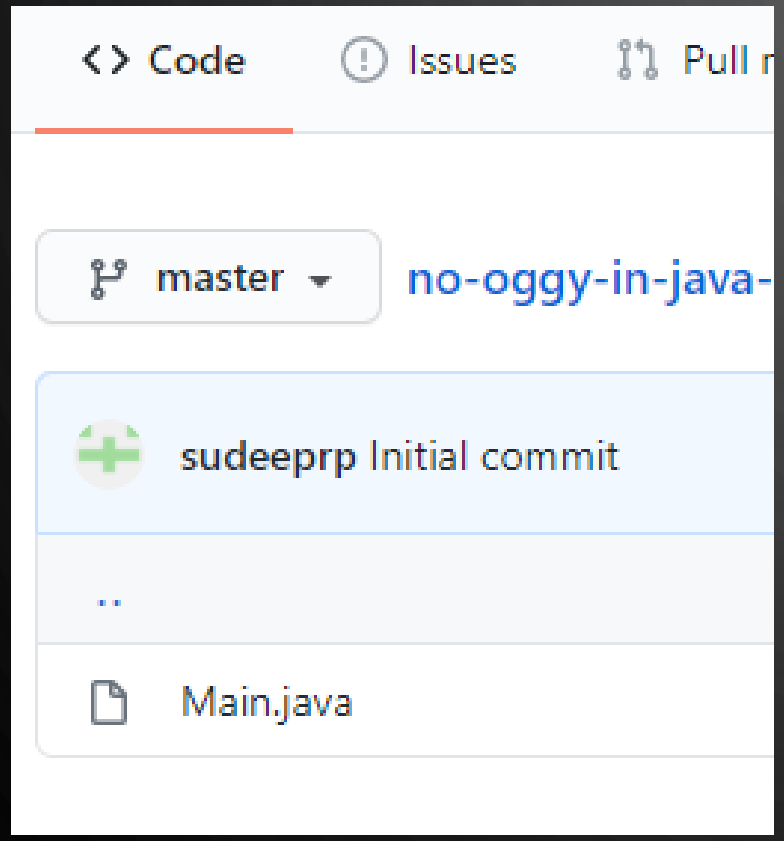
The code doesn't work according to the intention. Make it succeed.

Don't forget to update this file after fixing the code.

TEST MISMATCH – WHY ?

DOCUMENT MISSED – WHY ?

MAIN?



Why didn't they name the file according to purpose?

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1

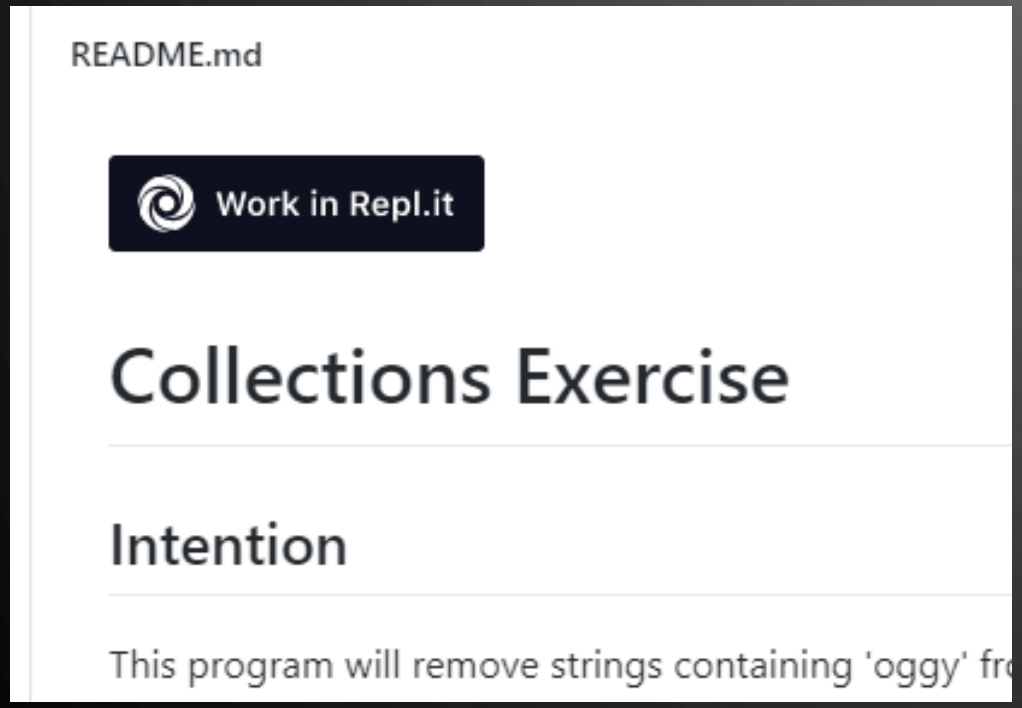
```
for (int i = names.Count -1; i>=0; i--)
{
  var name = names[i];
  if(name.StartsWith("oggy"))
  {
        Console.WriteLine($"Need to remove {name}!");
        names.RemoveAt(i);
    }
}
```

2

```
foreach (var name in names.Reverse<string>( ))
{
    if(name.StartsWith("oggy")) {
        Console.WriteLine($"Need to remove {name}!");
        names.Remove(name);
    }
}
```

```
for(int i= 0; i < names.Count ; i++)
{
    if (names[i].StartsWith("oggy"))
    {
        Console.WriteLine($"Need to remove {names[i]}!"
        names.Remove(names[i]);
        i--;
    }
}
```

One or multiple removal?



markdownlint!