

10/16/17

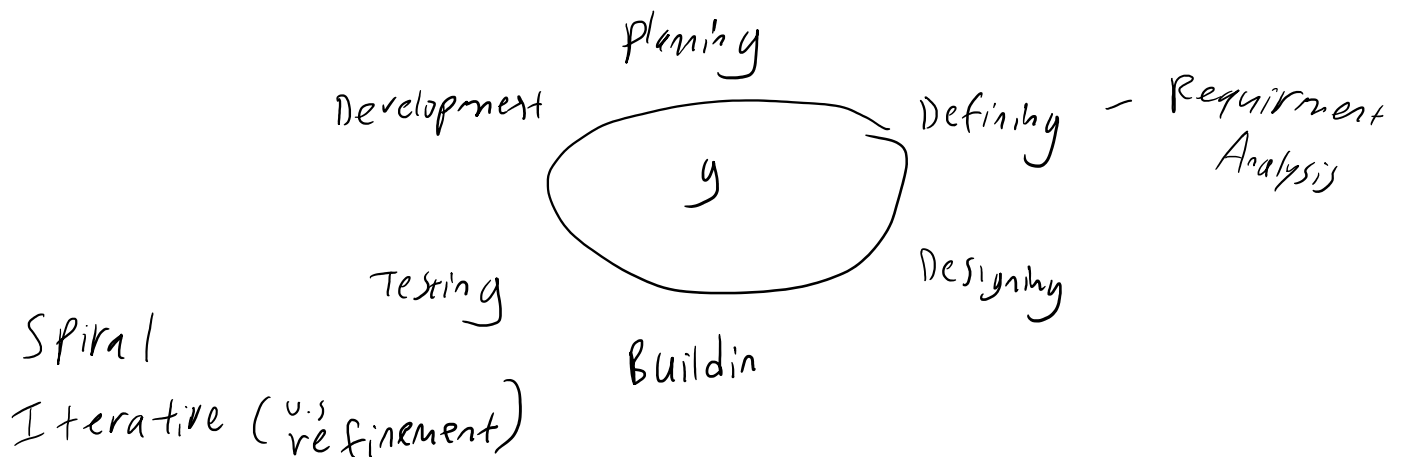
Monday, October 16, 2017 11:04 AM

Software development cycle and 6 sigmas

SDLC - Software Development life cycle
System

Process - steps to accomplish a project

Method - approach to accomplish a project (focus on the steps)
of a process



feasibility study

Pilot Study

non-functional Requirement

functional Requirement

domain Requirement

HW: DOJ system lc
10 step version
3 part hw.

1. short description of each step.
2. Which part of royce's 5 is it under
3. 10th step: why is it named dispose (get rid of) if it's a cycle

~~~~~  
6 sigma - Motorola - GE

6σ  
↑  
Six ↑ std deviation  
There's Belts Certification (martial approach) <sup>called</sup> Borrowed from project management 50 years prior

everythings acronyms.

DMAIC vs DMA DU  
DMAIC: Define / Measure / Analyze / Improve / Control (Quality)  
DMA DU: Define / Measure / Analyze / Design / Verify / Optimize  
First time  
Improving as we go along.  
Identifying defects

# DFSS - Design for Six Sigma.

celebrate

5S

- ① Sort - Determine what's essential vs non essential!
- ② Straighten up / Set -  
everything has to be certain way, no sloppy.
- ③ Scrub - clean your own mess up.  
be your own Inspector. Physically clean
- ④ Standardize - Standardize across your Workspace.  
every office is the same
- ⑤ Sustain - Put into place, everyone's schedule.  
everything's planned. No surprise

Ishikawa Fishbone

5m's - measurement

Materials - data, code, software

methods - functions, Algorithms.

Machines - PLC / hardware

Manpower - people

Environment - electricity

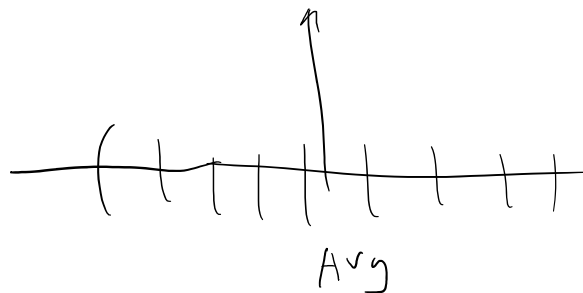
Probability - predict future

$$\frac{\text{number of ways for a specific event}}{\text{number of ways for all possible events}}$$

Statistics - Understand past

$\mu$  - Avg

$\bar{X}$  - mem



(1) Avg deviation from Mean

(2) Avg ~~absolute~~ but no calculation on it, no denominator.

(3) Avg Square deviation - Variance

(4) Sqrt (variance)  $\equiv$  Std deviation

$-3\sigma / +3\sigma \times$

$-6\sigma / +6\sigma \times$

$\pm 1.5 / \pm 4.5$



dpmo - defect per million operation.

Allow 3.74/1e6 dpmo.

