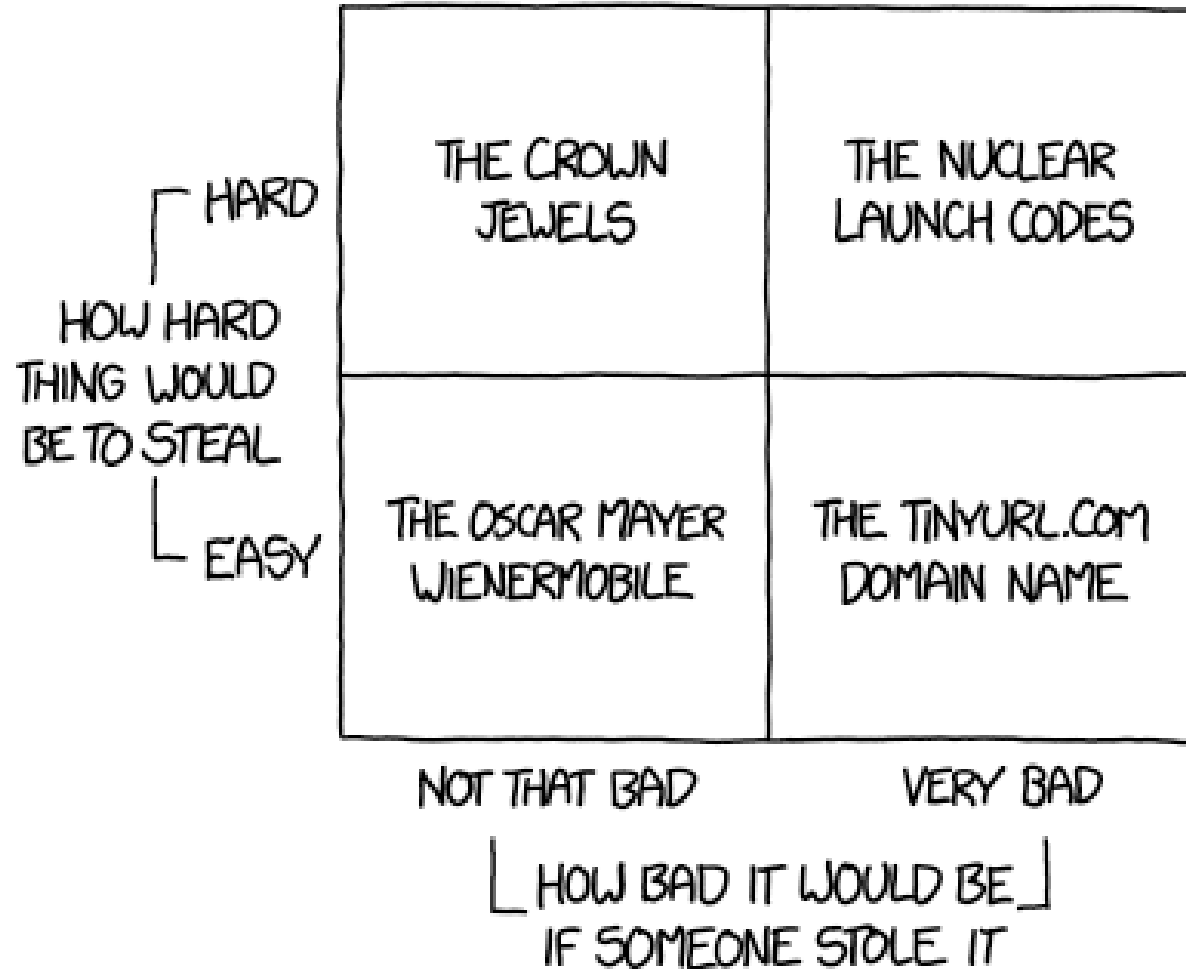


# Refactoring Katas

Training To Instinctively Improve Code



# Gary Ray

Email: [gary.ray@agilecoder.net](mailto:gary.ray@agilecoder.net)

Twitter: @geekcyclist

Github: [geekcyclist/utah-bmdd-2018](https://github.com/geekcyclist/utah-bmdd-2018)

# Code Katas

A **code kata** is an exercise in programming which helps programmers hone their skills through practice and repetition.

(Wikipedia)

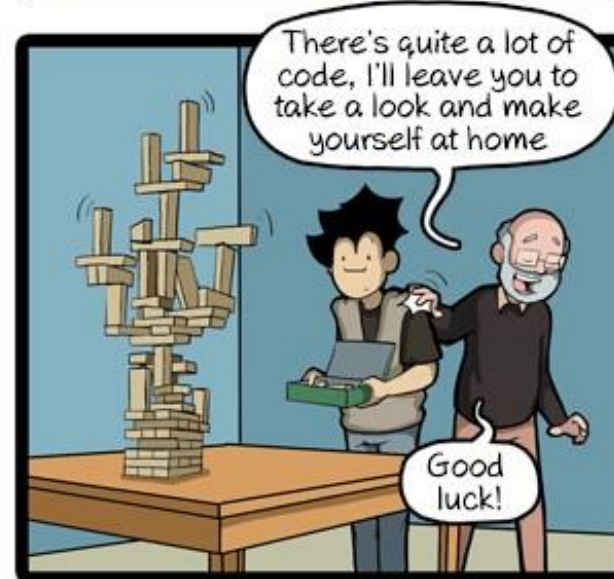
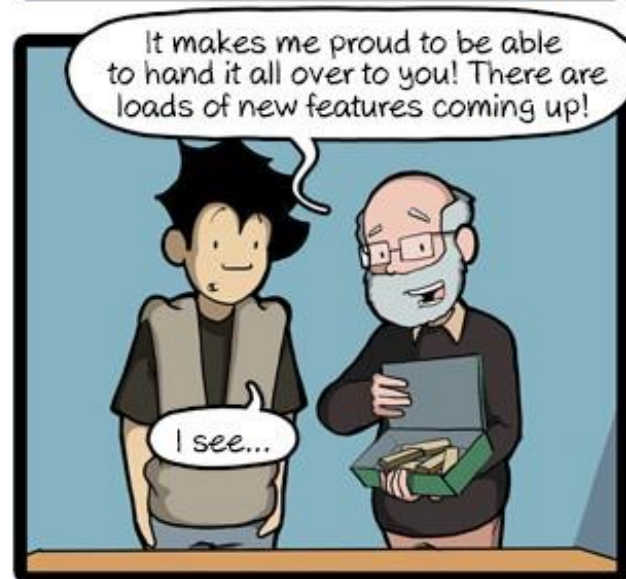
# Code Katas

A **code kata** is an exercise in programming which helps programmers hone their skills through practice and repetition.

(Wikipedia)

# Refactoring Katas

A specific sub-set of **code kata** where the starting point is existing code with identifiable flaws rather than a clean slate with the specific goal of building the programmer's ability to quickly **read, understand and change** existing code.



# Legacy Code is...

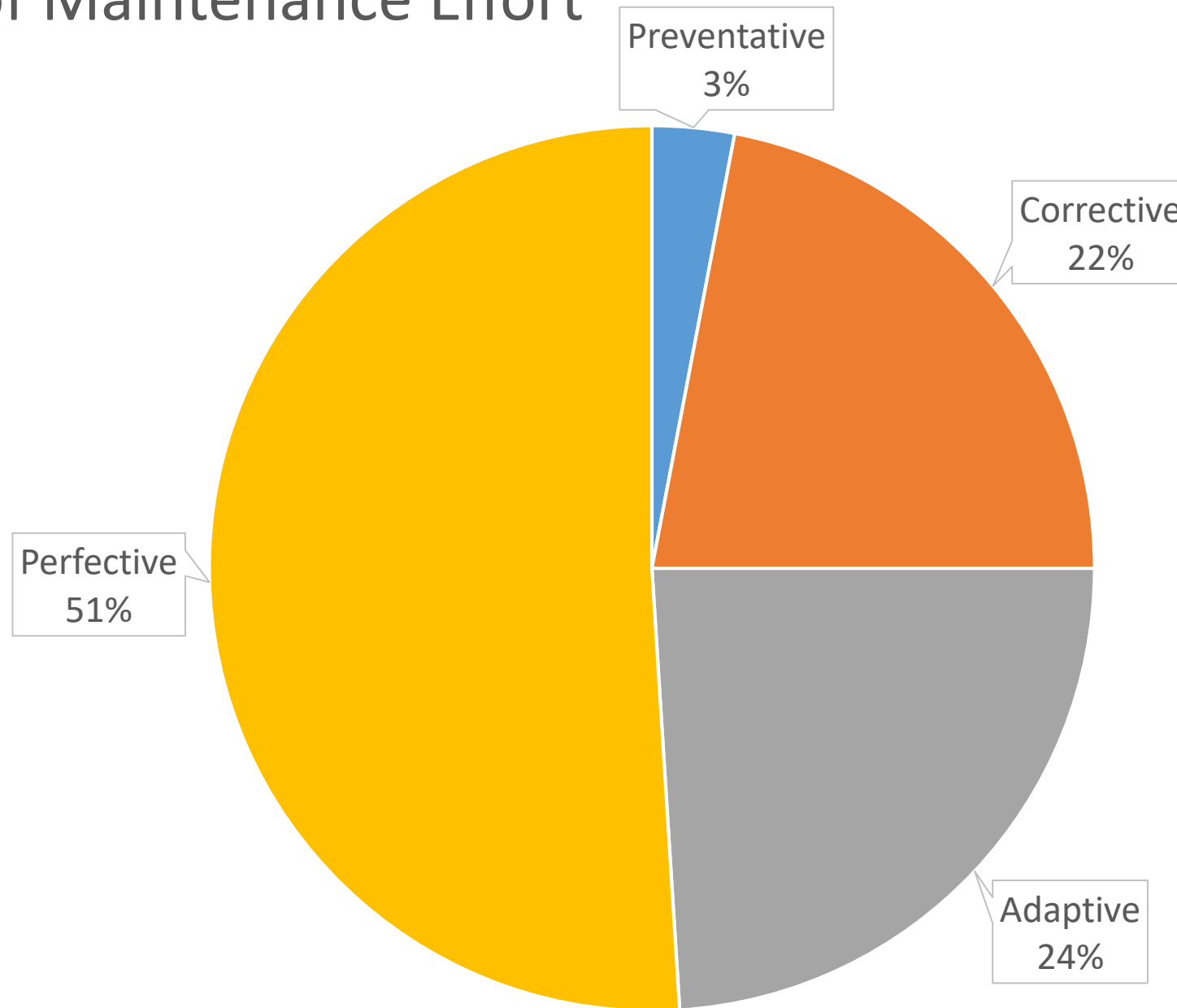
- Code maintained by an administrator that did not develop the code – George Olivetti
- Legacy code is simply code without tests. — Michael C. Feathers, Working Effectively with Legacy Code
- By legacy [code] I mean any production enterprise code older than a week! – Alan Hemmings @snowcode

# Legacy Code is...

... any production code where the business value continues to outweigh the cost of maintenance.

Business Value – Technical Debt = Technical Net Worth

# Distribution of Maintenance Effort



Lientz, B.P. and E.B. Swanson, Software Maintenance Management, Addison-Wesley Longman, 1980.





What about MY code?

Max Complexity	Avg Complexity	Max Depth
162	7.81	9+
159	2.76	9+
157	4.28	9+
152	3.81	9+
110	3.23	9+
107	5.53	9+
93	6.03	9+
93	6.03	9+
90	10.20	9+
84	13.62	9+

Controllers

Candidate.vb

Elections

Ballots

ByMail

Forms

frmBallotsByMailNewImport.Designer.vb

Kevin

FormsKevin

Misc

frmIDVerification.vb

NVRA

frmNVRA.vb

Pending

frmPendSearch.vb

SB54

frmAddCandidatePacket.vb

frmCand\_Pet\_Sig\_Totals\_Update.vb

Voters

frmRegistrants.vb

ModulesKev

modKevin.vb

ReportsRay

AbsReports

rptVoterIDandName.Designer.vb

frmreports.vb

modRayReports.vb

My Project

Ray

FormsRay

Documents

frmSignature.vb

Elections

Petitions

UserControls

ucPetitionCandidatePacketList.vb

ENR

frmElectionResults.vb

ModulesRay

VistaHelp

Web References

app.config

frmMain.vb

Branches

Update

View: Branch

Select all

Reset path

Selected path: S:\Election Projects\VISTA\VISTA Application

VISTA Application/MAIN

DEV

Dev Citrix

Functionality of Spoiled Ballots

Internet Registration

New AGRC Map

No changing ballot issued by other county

Petition problem

Test change for SLC

Zipcode error DL

History

Show

Show next 50

Cancel

Changeseet details

VISTA Application/MAIN

DEV

Dev Citrix

Functionality of Spoiled Ballots

Internet Registration

New AGRC Map

No changing ballot issued by other county

Petition problem

Test change for SLC

Zipcode error DL

Changeseet

Date

Comment

756

3/28/2018 4:17:45 PM

Checking in more classes

755

3/28/2018 4:05:42 PM

Branched from S:\Election Projects\VISTA\VISTA Application/DEV

754

3/28/2018 4:05:14 PM

753

3/28/2018 4:04:04 PM

752

3/28/2018 4:02:51 PM

751

3/28/2018 3:50:57 PM

Branched from S:\Election Projects\VISTA\VISTA Application/DEV

750

3/28/2018 3:49:58 PM

749

3/28/2018 3:42:39 PM

747

3/28/2018 3:33:33 PM

Branched from S:\Election Projects\VISTA\VISTA Application/DEV

746

3/28/2018 8:38:22 AM

Working on tab A

743

3/22/2018 1:22:57 PM

Branched from S:\Election Projects\VISTA\VISTA Application/DEV

708

1/5/2018 11:28:23 AM

Integrated HorizonView calls for local drive redirection on the HorizonView Client.

703

12/20/2017 6:04:36 PM

As per Mark's approval, I merged in Kevin's (Task 729) Additional Action Status branch that contains several other bug fix/task work items. These should

696

12/7/2017 10:32:13 AM

Fix zipcode to take only the first 5 characters.

678

11/14/2017 11:13:09 AM

Merged in 734 - RDI tag missing.

677

11/14/2017 11:01:22 AM

Merged in 671 - Disable auto-activate voters...

676

11/14/2017 10:57:06 AM

Merged 288 - Add birthday to the duplicate searh screen.

675

11/14/2017 10:46:13 AM

Merged 676 - Age in Petition Search

660

11/7/2017 10:59:45 AM

Updated NuGet and the verbiage.

648

9/28/2017 5:19:05 PM

647

9/28/2017 5:10:15 PM

NuGet Updates.

638

9/28/2017 4:12:35 PM

NuGet Updates.

623

7/10/2017 12:01:30 PM

Branched from S:\Election Projects\VISTA\VISTA Application/New AGRC Map

622

7/6/2017 3:38:26 PM

580

5/24/2017 2:34:59 PM

564

5/16/2017 8:54:06 PM

563

5/16/2017 8:50:31 PM

559

5/16/2017 7:58:03 AM

Branched from S:\Election Projects\VISTA\VISTA Application/Petition problem

558

5/15/2017 2:17:01 PM

Zipcode error fixed.

557

5/15/2017 2:09:46 PM

Branched from S:\Election Projects\VISTA\VISTA Application/Zipcode error DL

498

4/24/2017 7:51:45 PM

496

4/24/2017 7:13:51 PM

Updated the DL services. Changed the Registrant window title so the driving functionality will work again that is based off the window title.

495

4/24/2017 6:43:26 PM

494

4/24/2017 3:40:30 PM

Change screen name back to what they were not VISTA.

487

4/24/2017 10:46:01 AM

Branched from S:\Election Projects\VISTA\VISTA Application/Test change for SLC

485

4/24/2017 2:40:07 AM

482

4/24/2017 12:07:39 AM

480

4/23/2017 4:44:19 PM

479

4/23/2017 4:27:28 PM

Updated the NuGet package changes for the Common and Configuration Utilities to reset the main connection when switching between LIVE and TEST.

445

4/19/2017 3:14:50 AM

NuGet Package Updates

444

4/19/2017 3:13:23 AM

NuGet Package Updates

386

4/11/2017 3:11:44 PM

Updated the onload connection configurations for the new file structure HorizonView will be using.

385

4/10/2017 10:54:29 AM

Branched from S:\Election Projects\VISTA\VISTA Application/No changing ballot issued by other county

340

3/29/2017 3:33:21 PM

319

3/15/2017 1:31:42 PM

318

3/15/2017 9:46:34 AM

300

3/1/2017 3:46:28 PM

Fixed the X and or Y not being set for provisional voter residences, will also fix any residence that comes into voters without an X or Y.

263

2/16/2017 3:02:34 PM

Merging How Many to include party and status for counts.

254

2/15/2017 1:10:55 PM

Branched from S:\Election Projects\VISTA\VISTA Application/Functionality of Spoiled Ballots

240

2/9/2017 9:41:47 AM

239

2/9/2017 9:34:46 AM

Modified the VISTA Local Dashboard screen so that the screen can be stretched.

238

2/9/2017 9:32:40 AM

Disable the Residence button on the Voter screen when the residence is in the holding area.

219

2/8/2017 12:41:21 PM

Fixed the issue with the signature source and date fields losing value on the voter merge screen.

217

2/8/2017 12:32:05 PM

Created the new UOCAVA Report.

215

2/8/2017 12:30:05 PM

Moved the Ballot ID column over and stretched the Ballot History screen.

130

1/28/2017 7:48:41 PM

Branched from S:\Election Projects\VISTA\VISTA Application/MAIN

114

1/28/2017 7:01:31 PM

86

1/28/2017 5:44:14 PM

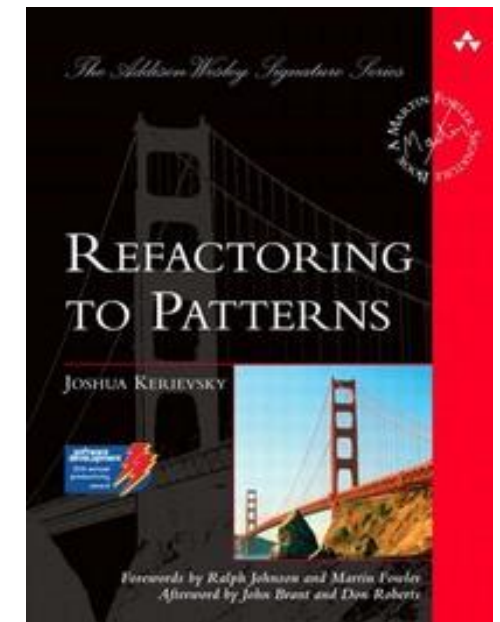
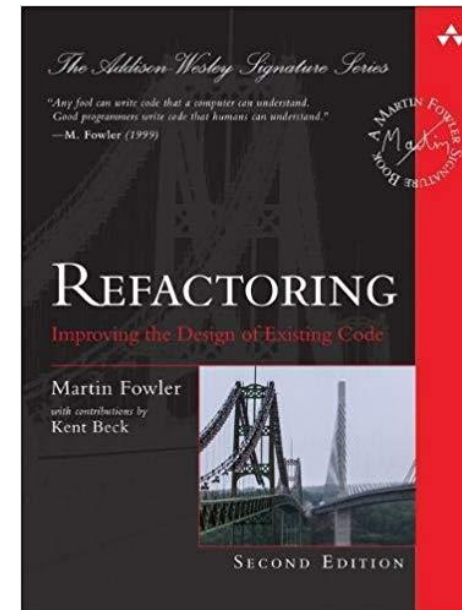
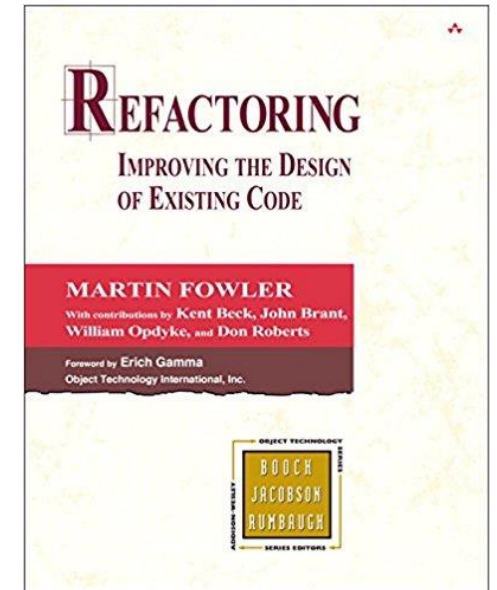
74

1/28/2017 4:48:31 PM

Learn to Read By Refactoring

# Read by Refactoring

- Remove Clutter
- Name Things: The Core 6 Refactorings
- Simplify Control Flow
- Refactor to Patterns



Sparrow Decks







# The Core Refactorings

- Rename
- Inline
- Extract Method
- Introduce Local Variable
- Introduce Parameter
- Introduce Field

# Learning Refactorings

- Ask the IDE – “Refactor This”
- JetBrains Presentation Assistant (IDEA, Resharper)
- Pull the plug



# More Sparrow Decks:

<http://llewellynfalco.blogspot.com/p/sparrow-decks.html>

# Refactoring Kata Resources

Tennis Rules - <https://github.com/emilybache/Tennis-Refactoring-Kata>

Roy Oshero's TDD Katas - <http://osherove.com/tdd-kata-1/>

Gilded Rose - <https://github.com/marcoemrich/Refactoring-Katas/tree/master/GildedRose>

Fowlers Video Store (Example from Refactoring)

Video Store (Java) - <https://github.com/unclebob/videostore>

Video Store (C#) - <https://github.com/trikitrok/VideoStore-1>

Design Patterns tag on <https://codewars.com>

# Tips

- Pair and Mob
- Tiny Changes
- Spaced Repetition
- Create Your Own

# References

Sparrow Decks - <http://llewellynfalco.blogspot.com/p/sparrow-decks.html>

Core 6 Refactorings - <http://arlobelshee.com/the-core-6-refactorings/>

Legacy Code Rocks: podcast, slack and github resources focused on saving that legacy code - <https://www.legacycode.rocks/>

## Please Leave Feedback...

# Thanks to our Sponsors!

## Partners

---



## Premier



Logo: