

Willkommen

Coding Dojo 25.02.2015

Twitter: #CodingDojoVie

Next Session: Wed, 20150311? @Willhaben

Moderation

Peter Kofler 

- Ph.D. (Appl.Math.)
- Professional Software Developer for 15y
- „fanatic about code quality“
- I help development teams

Martin Hillbrand

- DI(FH) (SE), MA (IEM)
- Software Development 8y & Scrum Master 6y
- „team work & fun @ work“
- Work @ ÖLG

Coding Dojo Mindset

- Safe place outside work
- We are here to learn
- Need to slow down
- Focus on doing it right
- Collaborative Game

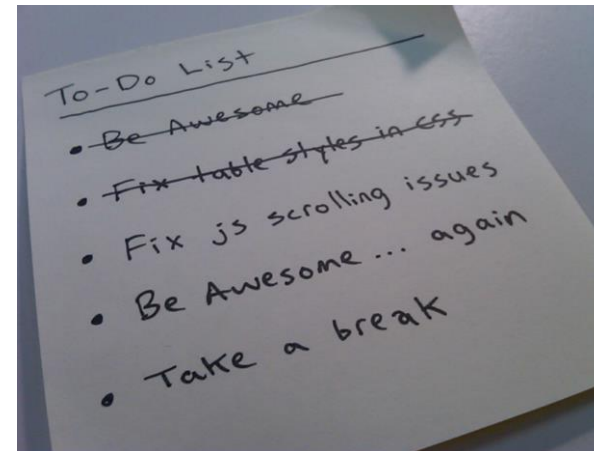


Two Basic Rules

- Collaborative = Pair Programming
 - „Randori“ (pairing on the projector)
 - or programming in pairs
- Refactoring
 - Identify code smells:
 - Think: Maintainability, Extensibility
 - Decide for necessary change
 - Transform incrementally using small steps

Coding Dojo Structure

- Introduction 10'
- Round 1 50'
 - Code 45'
 - Reflect 5'
- Break 10'
- Round 2 50'
 - Code 45'
 - Reflect 5'



The Assignment – Refactoring Kata

YATZY

- Dice Game, with 5 6-sided dice.
- Reroll dice (or some) max 3 times.
 - Rolled (3,4,5,5,2),
 - Re-roll (3,4,-,-,2) to get more 5's.
- Place dice in one category:
- Ones, Twos, ... Sixs, 1 pair, 2 pairs, etc
- Detailed info see handout.
- **Assignment: Clean it up!**

Yahtzee® Name _____

UPPER SECTION		HOW TO SCORE	GAME #1	GAME #2	GAME #3	GAME #4	GAME #5	GAME #6
Aces	☐ = 1	Count and Add Only Aces						
Twos	☐ = 2	Count and Add Only Twos						
Threes	☐ = 3	Count and Add Only Threes						
Fours	☐ = 4	Count and Add Only Fours						
Fives	☐ = 5	Count and Add Only Fives						
Sixes	☐ = 6	Count and Add Only Sixes						
TOTAL SCORE		→						
BONUS If total score is 63 or over		SCORE 35						
TOTAL Of Upper Section		→						
LOWER SECTION								
3 of a kind		Add Total Of All Dice						
4 of a kind		Add Total Of All Dice						
Full House		SCORE 25						
Sm. Straight	Sequence of 4	SCORE 30						
Lg. Straight	Sequence of 5	SCORE 40						
YAHTZEE 5 of a kind		SCORE 50						
Chance		Score Total Of All 5 Dice						
YAHTZEE BONUS		✓ FOR EACH BONUS SCORE 100 PER ✓						
TOTAL Of Lower Section		→						
TOTAL Of Upper Section		→						
GRAND TOTAL		→						

- Download: <http://github.com/emilybache/Yatzy-Refactoring-Kata>
- By Jon Jagger

Round 1

- No constraints -> unless you give yourself one

Topics for reflection

- Which smells did you identify?
- Which smells are STILL in the code?
- Did you check completeness of test cases before starting refactoring?
- How extensible is your solution, if the die has numbers 1 to 8?

Impressions of 1. Reflection

Identified	CODE SMELLS	STILL Change
Duplication		
Naming		
Inconsistent (Dir & Path) ↳ Design		
Params		
Formatting misleading		
! Lint Frei		
Unit Tests ! Selbstwahl.		
Falsche Zuordnung	*	
Code Coverage		
Test Smell		
Versions Verwaltung		

Did you check the completeness of tests?	
Yes	No

Für die Pause:
How extensible is your
solution, if the die
has eyes 1-8?

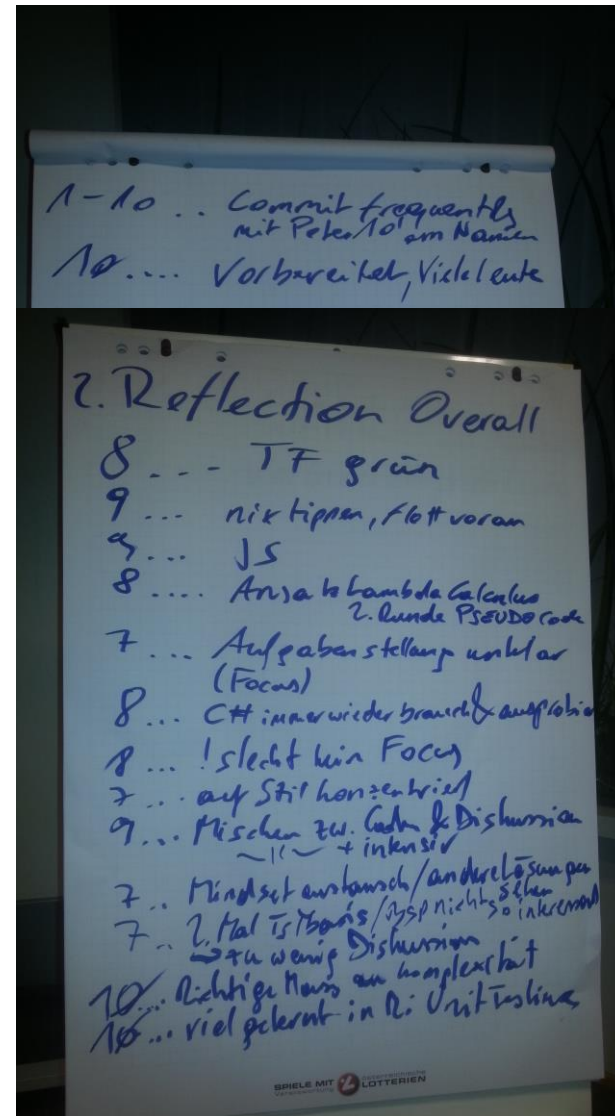
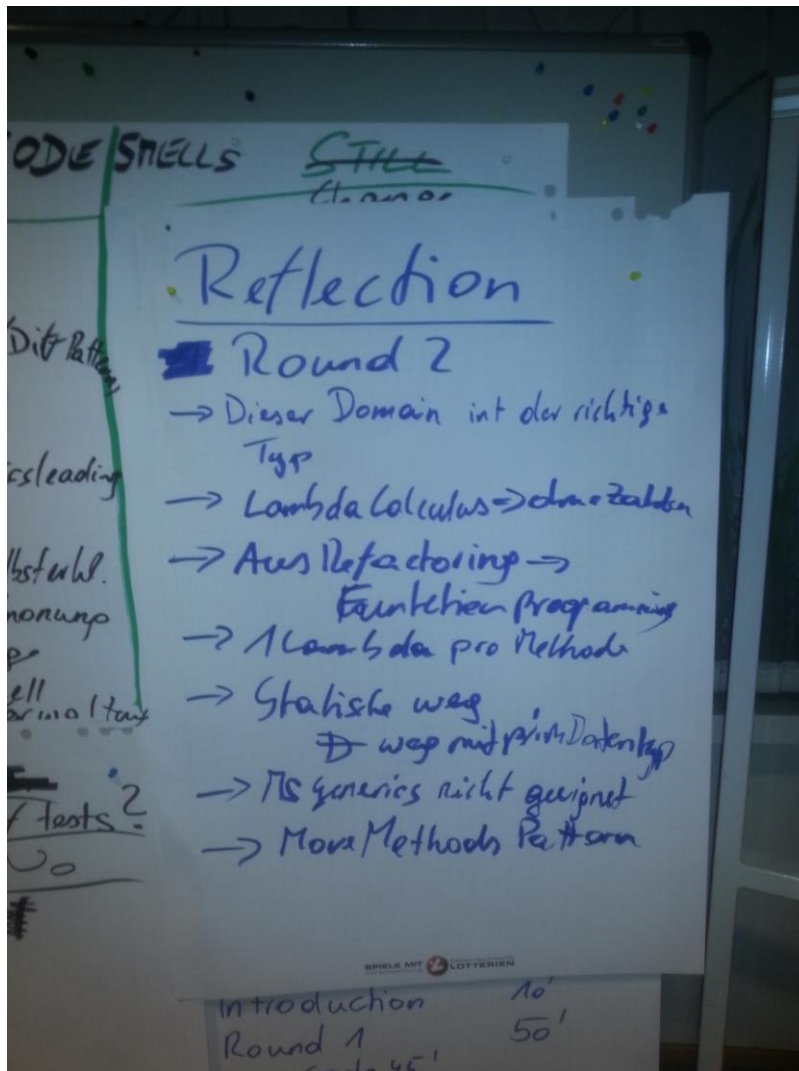
Round 2

- Constraint: No primitive datatypes in method interfaces.

Topics for reflection

- Did you change test cases?
- Did you add test cases?
- How clear are your names now?
- How much duplication do you still have in your code?

Impressions of 2. Reflection



Final

- Peter Kofler 
 - @codecopkofler
 - www.code-cop.org
- Martin Hillbrand
 - @master_hilli
- Game by
 - Jon Jagger
 - <http://jonjagger.blogspot.co.uk/2012/05/yahtzee-cyber-dojo-refactoring-in-java.html>

Attendee Impressions



Thanks

CC Images

- **Dojo:** <http://www.flickr.com/photos/49715404@N00/3267627038/>
- **Todos:** <http://www.flickr.com/photos/kylesteeddesign/3724074594/>
- **Yahtzee:** <http://www.memory-improvement-tips.com/yahtzee-score-sheets.html>

Handout – Category Table

Game	Points Player 1	Points Player 2	Dice Player 1	Dice Player 2	Comments
Ones	0	3	2,3,4,5,6	1,1,3,1,5	The sum of all dice showing the number 1 (max points 5)
Twos	6	6	2,2,2,1,5	2,2,2,6,1	The sum of all dice showing the number 2. (max points 10)
Threes	9	12	3,3,3,5,6	3,3,3,3,1	The sum of all dice showing the number 3. (max points 15)
Fours	12	8	4,4,4,1,2	4,4,2,1,5	The sum of all dice showing the number 4. (max points 20)
Fives	15	15	5,5,5,6,1	5,5,5,2,3	The sum of all dice showing the number 5. (max points 25)
Sixes	24	18	6,6,6,6,1	6,6,6,5,1	The sum of all dice showing the number 6. (max points 30)
Sum Up	66	62			
Bonus	35	0			35 bonus points, if sum of all one of a kind is higher 63
One Pair	4	6	2,2,2,4,5	3,3,4,5,1	Two dice showing the same number. Score: Sum of those two dice. (max points 12)
Two Pairs	10	22	2,2,3,3,1	5,5,6,6,3	Two pairs of dice. Score: Sum of dice in those two pairs. (max points 22)
Three of a Kind	15	15	5,5,5,1,2	5,5,5,5,1	Three dice showing the same number. Score: Sum of those three dice. (max points 18)
Four of a Kind	0	24	2,2,2,6,6	6,6,6,6,2	Four dice with the same number. Score: Sum of those four dice. (max 24)
Small Straight	15	15	1,2,3,4,5	1,2,3,4,5	The combination 1, 2, 3, 4, 5. Score: 15 points (sum of all the dice).
Large Straight	20	20	2,3,4,5,6	2,3,4,5,6	The combination 2, 3, 4, 5, 6. Score: 20 points (sum of all the dice).
Full House	28	28	5,5,6,6,6	5,5,6,6,6	Any set of three combined with a set of two. Score: Sum of all the dice. (max. 28)
Yatzy	50	0	1,1,1,1,1	5,5,1,1,1	All five dice with the same number. Score: 50 points.
Chance	21	19	1,5,5,6,4	3,6,6,2,1	Any combination of dice. Score: Sum of all the dice. (max 30)
Sum Down	162	149			
Gesamtsumme	264	211			Sum Up + Bonus + Sum Down

Handout - Game Description

Game description

- It is a dice game.
- You need 5 dice.
- The die has 6 sides.
- The player with the most points wins in the end, after 15 rounds.

Process of the Game

- Every player has 3 Rolls for his dice, per Round but does not have to use it.
 - After first roll the player decides for which category he will Reroll.
 - He does not have to reroll all dice.
 - After that, puts points into category.
- After that the next player starts.
- The Game ends after 15 rounds.

How does the Game work (e.g.)

We have Player 1 & Player 2.

- **Round 1 starts – Player 1:**
 - First Roll (5 dice) returns: 3,2,5,2,6 (he goes for the category **Twos**)
 - Reroll of 3,5,6 (3 dice) returns 1,4,5.
 - Reroll of 1,4,5 (3 dice) returns 1,2,5. → Now he has 3 2's so he can add 6 points to **Twos**.
- **Round 1 – Player 2:**
 - First Roll (5 dice) returns: 5,5,6,6,2 (decides to go for category **Full House**)
 - Reroll of 2 (1 die) returns 3.
 - Reroll of 3 (1 die) returns 3 again. → Now he has no **Full House**, but has Two Pairs -> so he adds 22 points to **Two Pairs**.
- **Round 1 ended.**

- **Round 2 starts – Player 1:**
 - First Roll returns 1,1,1,1,1 (decides to go for category **Yatzy**), already achieved so no reroll and add 50 points to category **Yatzy**.
- **Round 2 – Player 2:**
 - First roll returns 1,1,1,5,6 (decides to go for **Yatzy** or **Ones** -> both are still possible and usefull)
 - Reroll of 5,6 returns 2,4.
 - Reroll of 2,4 returns 4,5. → decides to add points to **Ones** and adds 3 points.
- **Round 2 ended.**
- **... all other rounds, filling up the categories**
- **Round 15 starts – Player 1:**
 - Still needs category **Four of a kind**.
 - First Roll returns 2,3,4,2,6
 - Rerolls 3,4,6 returns 2,4,5
 - Rerolls 4,5 returns 6,6 → did not get **Four of a kind**, so enters 0 points into this category.
- **Round 15 – Player 2:**
 - Still needs **Yatzy**.
 - First Roll returns 5,5,6,6,1
 - Rerolls 6,6,1 returns 6,1,2
 - Rerolls 6,1,2 returns 1,1,1 (has **Full House**, but already filled out, so 0 points for **Yatzy**)
- **Round 15 ended & Game finished:** Sum up all points. Player 1 wins.