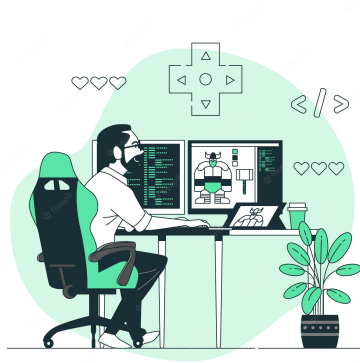


Maturarbeit
Documentation

Game

2022



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Gymnasium
KZO - Kantonsschule Zürcher Oberland

Extract

This will be the best extract that ever existed. By Eli and Marc:

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Teil I

Ziel

Kapitel 1

Vision

JassTracker is a web app which allows tracking and analysis of the popular Swiss card game Jass. There are many forms of playing, but the one we're focusing on is called "Coiffeur". The following paragraphs expect the reader to know the basic rules and concepts of a "Coiffeur Jass".

What It Does

The goal of the JassTracker is to allow the players to focus on the game without having to worry about tracking points or whose turn it is. Instead of having to write down the scores using pen and paper, you can simply input them into the JassTracker digitally. The website automatically tracks whose turn it is and analyses your scores for you. You can also gain exhaustive insight into your play style by looking at personal or group statistics, such as average score by player or historic averages. The system is also very flexible and can be configured to your liking. For example, once you have configured a Jass table, you can easily start a new game with the same players.

How It Works

The first step is to create a new table and enter all team members for the game. Then you start playing the game physically, just like you would normally. Once a round is over, you input the score for the scoring member and "Trumpf". After entering the points, a few things happen automatically:

- Player & team score update
- The upcoming starting person is shown
- Statistics refresh with the latest information

When the game has finished, highlights of the game (e.g. the best player or highest round score) are displayed.

Extensions

Some potential ideas to expand on:

- Configurable Jass game (e.g. Coiffeur with 8 instead of 10 options)
- Prediction of scores based on historic performance
- Current game trajectory (win probability by team)
- Share the scoreboard in real-time with other members in case you want to show the scoreboard on a different device as well
- Associate game to a personal account to track personal statistics across games
- In-depth statistics like play style, favorite “Trumpf”, best “partner” by win probability etc.
- Charts in game to show statistics

Kapitel 2

Anforderungen

2.1 KZO

2.2 Notwendige Features

Info:

2.3 Nice to have

2.3.1 Online Multiplayer

ID	NFR-7
Requirement	Browser Support
Trigger(s)	User wants to use a specific browser
Measure(s)	Last 2 major version of any browser with more than 1% usage (except IE 11) is supported
Testing	Manual

ID	NFR-8
Requirement	Mobile Device Support
Trigger(s)	User wants to access application using a phone or tablet
Measure(s)	The application must support being used on mobile devices
Testing	Manual

ID	NFR-18
Requirement	Unicode Support
Trigger(s)	User wants to include special characters or emojis in his user-name
Measure(s)	Support umlauts and emojis by using utf-8 and unicode
Testing	Manual

2.3.2 Monetarisierung

ID	NFR-1
Requirement	Reasonable response time for the rendering of new scores
Trigger(s)	User doesn't want to wait to see scores
Measure(s)	Rendering of the new scores must be doable within 1 second
Testing	Manual

ID	NFR-2
Requirement	Authentication Response Time
Trigger(s)	User wants to be able to login in a timely manner
Measure(s)	Authentication of a user at login must be doable within 1 second
Testing	Manual

ID	NFR-3
Requirement	New Game Creation Time
Trigger(s)	User wants to start the game as soon as possible
Measure(s)	Setting up a new game must be doable within 1 second
Testing	Manual

2.3.3 Graphiken

ID	NFR-4
Requirement	Keyboard-only usability
Trigger(s)	User has no touch-screen or pointing device available
Measure(s)	Application must be usable with only a keyboard
Testing	Manual

ID	NFR-5
Requirement	General Usability
Trigger(s)	Users want to be able to use the application without getting stuck
Measure(s)	Hallway testing shows eight people used the app without getting stuck
Testing	Manual

ID	NFR-6
Requirement	User Guidance
Trigger(s)	User wants to be able to access a Help-Center
Measure(s)	Hallway testing shows eight people find the Help-Center and say it's helpful
Testing	Manual

2.4 Skizzen

Disclaimer: These are just Mock-ups. Design can still change, and colors aren't fixed and are just as a visual aid for where containers should go.

Kapitel 3

Skizzen

Kapitel 4

Risiko

4.1 Hoch

1. Used technologies are not well known by all team members (certain, critical)
 - (a) Mitigation: Every team member should create a PoC in the used technologies to ensure basic understanding is present
 - (b) Mitigated risk: Low

4.2 Mässig

1. Inaccurate estimations (likely and critical)
 - (a) Mitigation strategies: apply cone of uncertainty, apply definition of ready to ensure planning quality
 - (b) Mitigated risk: Low
2. Poor risk management (likely and critical)
 - (a) Mitigation strategies: likelihood calculation, risk mitigation plans and monitoring of risks every planning
 - (b) Mitigated risk: Low
3. Project reviewer's expectations are not aligned with project (possible and critical)
 - (a) Mitigation strategies: obtain frequent approval and acknowledgement (naturally happens for us with review meetings)
 - (b) Mitigated risk: None
4. Unexpected absence of team member (unlikely and catastrophic)
 - (a) Mitigation strategies: Code changes need to be pushed on a daily basis, stories could at any point be taken over by another team member
 - (b) Mitigated risk: Medium

4.3 Tief

1. Insufficient code quality (possible and marginal)
 - (a) Mitigation strategies: code reviews, clear coding standards, apply definition of done
 - (b) Mitigated risk: None
2. Lack of ownership (possible and marginal)
 - (a) Mitigation strategies: setting clear responsibilities for roles
 - (b) Mitigated risk: None
3. Losing sight of documentation tasks (possible and marginal)
 - (a) Mitigation strategies: documentation strategy, documentation part of definition of done
 - (b) Mitigated risk: Low
4. Failure of hardware like personal devices, OST GitLab, Jira, hosted environment (rare, catastrophic)
 - (a) Mitigation strategies: Code changes need to be pushed on a daily basis
 - (b) Mitigated risk: Low

Teil II

Produkt

Project name: JassTracker

Team Members

1. Pascal Honegger (pascal.honegger1@ost.ch)
2. Marcel Joss (marcel.joss@ost.ch)
3. David Kalchofner (david.kalchofner@ost.ch)
4. Jamie Maier (jamie.maier@ost.ch)

Availabilities

Time slot	Mon	Tue	Wed	Thu	Fri	Sat
08h00-09h00	(XO)	-	-	-	(XO)	-
09h00-10h00	(XO)	-	-	-	(XO)	XO
10h00-11h00	(XO)	-	-	-	(XO)	XO
11h00-12h00	(XO)	-	-	-	(XO)	XO
12h00-13h00	(XO)	(XR)	(XR)	(XO)	(XO)	XO
13h00-14h00	(XO)	XR	-	(XO)	(XO)	XO
14h00-15h00	(XO)	XR	-	(XO)	(XO)	XO
15h00-16h00	(XO)	-	-	(XO)	(XO)	XO
16h00-17h00	(XO)	-	-	(XO)	(XO)	XO
17h00-18h00	-	-	-	(XO)	(XO)	-
18h00-19h00	-	-	-	(XO)	(XO)	-

Project Idea

JassTracker is a web app which allows tracking and analysis of the popular Swiss card game “Jass”. There are many forms of playing, but the one we’re focusing on is called “Coiffeur”. The two teams have two players each and need to keep track of what they’ve already played and which options are available to them. They also track whose turn it is, apply the correct multiplication to the score and sum it all up in the end. To work around this, a project team member is currently using a excel spreadsheet, but this solution provides limited functionality and has many drawbacks.

To make the scoring easier JassTracker allows players to easily track, analyze and sync games digitally. In a first step you will be able to create and arrange team members for a given game. Then you start playing the game physically and assign scored rounds to the correct member. During this phase you’ll also be able to see live stats such as average score by player so far. After the game some highlights (e.g. the best player)

are highlighted. You can also gain exhaustive insight into your play style by looking at personal or group statistics such as average score by player or historic averages. To enable this, other physical members are able to associate their game to their personal account to track personal statistics across games.

Some potential ideas to expand on: configurable Jass game (e.g. Coiffeur with 8 instead of 10 options), prediction of scores based on past performance, current game trajectory (win probability by team).

Proposed Realization

We plan on implementing a web app using Vue.js as a frontend library. For styling we plan on using Bootstrap for basic styles. The server will be implemented in Kotlin using the Ktor framework. Persistent data is stored in a PostgreSQL database and accessed using jOOQ. Development will be done locally in IntelliJ IDEA, production deployments will be using Docker containers. CI / CD will be implemented using the OST GitLab.

Kapitel 5

Architektur

Kapitel 6

Feedback

Time tracking is done exclusively in Jira. Detailed reports with hours spent per issue, epic and sprint can be found there. The following charts focus on the overall progress to notice early trends, in case certain members invest significantly more or less time than expected

Who	Logged Hours	Expected Hours
Pascal	135h	120h
Marcel	115h	120h
David	111h	120h
Jamie	106h	120h
Team	468h	480h

Kapitel 7

Zukunft

Teil III

Schwierigkeiten

Kapitel 8

Technologien

8.1 Unity

1. Pascal Honegger (pascal.honegger1@ost.ch)
2. Marcel Joss (marcel.joss@ost.ch)
3. David Kalchofner (david.kalchofner@ost.ch)
4. Jamie Maier (jamie.maier@ost.ch)

8.2 Github

Time slot	Mon	Tue	Wed	Thu	Fri	Sat
08h00-09h00	(XO)	-	-	-	(XO)	-
09h00-10h00	(XO)	-	-	-	(XO)	XO
10h00-11h00	(XO)	-	-	-	(XO)	XO
11h00-12h00	(XO)	-	-	-	(XO)	XO
12h00-13h00	(XO)	(XR)	(XR)	(XO)	(XO)	XO
13h00-14h00	(XO)	XR	-	(XO)	(XO)	XO
14h00-15h00	(XO)	XR	-	(XO)	(XO)	XO
15h00-16h00	(XO)	-	-	(XO)	(XO)	XO
16h00-17h00	(XO)	-	-	(XO)	(XO)	XO
17h00-18h00	-	-	-	(XO)	(XO)	-
18h00-19h00	-	-	-	(XO)	(XO)	-

8.3 LaTeX

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Kapitel 9

Team Management

Kapitel 10

Time Management

10.1 Roadmap

Teil IV

Reflexion

Kapitel 11

Rückblick

11.1 Team

11.2 Marc

11.3 Eli

Kapitel 12

Nächstes Mal

12.1 Team

12.2 Marc

12.3 Eli

Glossar

Acorns A suit in the Swiss playing cards, also known as Eichen.

Bells A suit in the Swiss playing cards, also known as Schellen.

Bottoms-up A kind of Contract in the Coiffeur Jass which plays without a trump. The lowest card always wins, the 8 card counts as 8 points and the 6 is worth 11 points, but the ace is worthless.

Coiffeur Jass A variant of Jass which is played by four players. Two teams of two players each compete against each other, trying to get the higher score.

Contract A available option within a coiffeur. Possible contracts: any Trump, Bottoms-up, Tops-down, Slalom and Guschti.

Game A game starts by selecting the appropriate table and starting a new game. A game consists of 20 rounds in total, 10 for each team.

Guschti A kind of Contract in the Coiffeur Jass which plays without a trump. Starts with either Bottoms-up or Tops-down for the first 5 Tricks and then flips, scoring rules apply from the first chosen option.

Jass A Swiss card game, see Wikipedia for more details.

Jass table Physically Jass is usually played sitting around a table. In Coiffeur Jass, diagonally opposite players are in the same team.

Joker A special Contract which can be used to do any other valid contract, even if already used.

pass A player has the option to not choose a Contract but instead pass on the decision to the next player (Schiebe). This can only be done once per round.

Roses A suit in the Swiss playing cards, also known as Rosen.

Round A round starts by being dealt 9 cards and is done once all cards are played.

score To take a Trick. After every player played one card from his hand the player with the strongest card in the current Contract scores.

Scoreboard The board on which the scores (points) are tracked. Known as “Jasstafel” in swiss german.

Shields A suit in the Swiss playing cards, also known as Schilten.

Slalom A kind of Contract in the Coiffeur Jass which plays without a trump. Alternates between Bottoms-up and Tops-down or vice-versa, scoring rules apply from the first chosen option.

Swiss-suited playing cards A big part of swiss german speaking switzerland uses the Swiss-suited playing cards. There are four suits: Bells (Schellen), Shields (Schilten), Roses (Rosen), Acorns (Eicheln).

Tops-down A kind of Contract in the Coiffeur Jass which plays without a trump. The highest card always wins, the 8 card counts as 8 points.

Trick A trick consists of four cards played in counter-clockwise order.

Trump A suit can be declared as the trump suit (Trumpf), which changes the card values within that suit for the round.

Literaturverzeichnis

- [Jen19] Jenschke. Medien in der kategorie “jass”. <https://commons.wikimedia.org/wiki/Category:Jass>, 2019. [Online; accessed 21-May-2022].