

# Kolloquium zur Bachelorarbeit

Entwicklung und Evaluation von Methoden zur Absenkung der  
Nutzungsschwelle von Kommandozeilen-Interfaces

Jonathan Neidel

HTW Berlin, Angewandte Informatik

31. März 2023

# Gliederung

1. Vorstellung des Themas
2. Probleme des CLI
3. Demonstration der implementierten App
4. Ergebnisse der Evaluation
5. Fazit

# Vorstellung des Themas

# Vorstellung des Themas

- ▶ Absenken der Nutzungsschwelle bzw. Erhöhen der Usability
- ▶ von Kommandozeilen-Interfaces

Durch:

- ▶ Entwicklung
- ▶ Implementation
- ▶ Evaluation

von Methoden

# Probleme des CLI

# Problem 1

Erinnern von: Kommandos, Subkommandos, Flaggen, Argumenten



## Problem 2

Wahrung richtiger Syntax und Semantik

# Syntax Beispiel

---

```
1 \ $ git comit -m "Add commit"
2 git: 'comit' is not a git command. See 'git --help'.
3
4 The most similar command is
5     commit
```

---



# Semantik Beispiel

---

```
1  \ $ git add remote origin git@github.com:jneidel/..
```

---

## ከተሠ.

# Unterstützen aller Hilfs- und Versionsflaggen

```
$ ~ oraclett -V
oraclett/0.2.0 linux-x64 node-v19.7.0
$ ~ oraclett -v
oraclett/0.2.0 linux-x64 node-v19.7.0
$ ~ oraclett version
oraclett/0.2.0 linux-x64 node-v19.7.0
$ ~ oraclett --version
oraclett/0.2.0 linux-x64 node-v19.7.0
$ ~ oraclett -version
oraclett/0.2.0 linux-x64 node-v19.7.0
$ ~
```

# Flaggen anstatt Argumenten

```
$ ~/code/ba ⤵ master± oraclett hour add -H 3 -p INTPD999DXD -t 01 --date yesterday  
Successfully added hours
```

Hours logged for this week (Feb27 - Mar05):

| Project:     | Task Details | Mon | Tue | Wed | Thu | Fri | Total |
|--------------|--------------|-----|-----|-----|-----|-----|-------|
| INTPD999DXD: | 01           |     | 3   |     |     |     | 3     |
| Sums         |              |     | 3   |     |     |     | 3     |

```
$ ~/code/ba ⤵ master± oraclett hour add -p INTPD999DXD -t 01 --date yesterday -H3  
Successfully added hours
```

Hours logged for this week (Feb27 - Mar05):

| Project:     | Task Details | Mon | Tue | Wed | Thu | Fri | Total |
|--------------|--------------|-----|-----|-----|-----|-----|-------|
| INTPD999DXD: | 01           |     | 6   |     |     |     | 6     |
| Sums         |              |     | 6   |     |     |     | 6     |

# Relevante Standartwerte

```
$ ~/code/ba ↵ master± oraclett hour add -p INTPD999DXD -t 01 -H3  
Successfully added hours
```

Hours logged for this week (Feb27 - Mar05):

| Project: Task Details | Mon | Tue | Wed | Thu | Fri | Total |
|-----------------------|-----|-----|-----|-----|-----|-------|
| INTPD999DXD: 01       |     | 6   | 3   |     |     | 9     |
| Sums                  |     | 6   | 3   |     |     | 9     |

# Interaktives Nachfragen bei fehlendem Parameter

```
$ ~/code/ba ↵ master± oraclett hour add -p INTPD999DXD -H3
? What task detail?
  03 - Discipline Weeks
  04 - Domain/Industry Training
  05 - Team One to Ones
> 06 - Foreign Language Training
  07 - Induction & Awareness training
  08 - Innovation Lab
  09 - Leadership Training
(Move up and down to reveal more choices)
```

# Fehlerkorrektur

```
$ ~/code/ba % master± oraclett hours list
> Warning: hours list is not a oraclett command.
Did you mean hour list? [y/n]: y
Hours logged for this week (Feb27 - Mar05):
```

| Project: Task Details   | Mon | Tue | Wed | Thu | Fri | Total |
|---|-----|-----|-----|-----|-----|-------|
| INTPD999DXD - People Development DXD: 01 - Career development | 6   | 3   |     |     | 9   |       |
| Sums  | 6   | 3   |     |     | 9   |       |

# Natürliche Sprache

```
$ ~/code/ba / master$ oraclett hour add -p INTPD999DXD -t01
? How many hours? 3
? What date? 1
>> Invalid date passed.
```

Natural language dates like these supported:

today, yesterday, tomorrow, Thursday, fri, next wednesday, last week tue, mon 3 weeks ago, aug 15

Alternatively an exact dates like 5/24/2022 can also be used.



# Relevante Kommandovorschläge

```
$ ~/code/ba % master± oraclett hour add -p INTPD999 -t01 -H3
```

```
Error: The project does not exist.
```

```
To check existing: project list
```

```
To add a new one : project add
```

# Autovervollständigung

Nicht implementiert.

```
$ ~/code/ba | master± oraclett
autocomplete          -- display autocomplete installation instructions
help                  -- Display help for <%= config.bin %>.
hour:list              -- List all logged hours.
note:list              -- List all notes.
note:remove           hour:remove note:edit hour:edit -- If a day is specified, you will edit that days hours.
```

# Menü-basiertes Interface

Nicht implementiert.

```
jneidel@jneidel-x240:~/code/ba/thesis.pdf
12 _minted-slides
11 _minted-thesis
10 bibliography.bib
9 extra.bib
8 images
7 make-if-changed
6 Makefile
5 README.md
4 script.octave
3 slides.pdf
2 slides.tex
1 slides.vrb
thesis.pdf
1 thesis.sum
2 thesis.tex

-rw-r--r-- 1 jneidel jneidel 1.4M Sun Feb 19 08:29:32 2023 13/15
```




Abbildung: Am Beispiel von If.

# Ergebnisse der Evaluation

# Demonstration der GUI

DXDDV003 - Soon at Endava | 03 - Concurrent Engineering | Regular

**13.00** Hours

Mon, Feb 06; 4.00 Hours

Tue, Feb 07; 2.00 Hours

Thu, Feb 09; 4.00 Hours

Fri, Feb 10; 3.00 Hours

## Comments

Mon: Bug fixes; Tue: internal Discussion; Thu: Implement mailer; Fri: Review PRs

---

INTPD999DXD - People Development DXD trainings  
timecards | 03 - Discipline Weeks | Regular

**8.00** Hours

Wed, Feb 08; 8.00 Hours

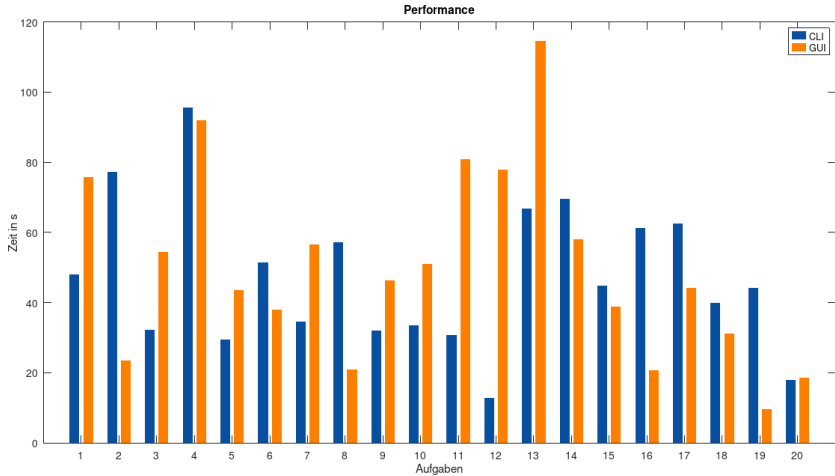
## Comments

Wed: Dev Week preparations

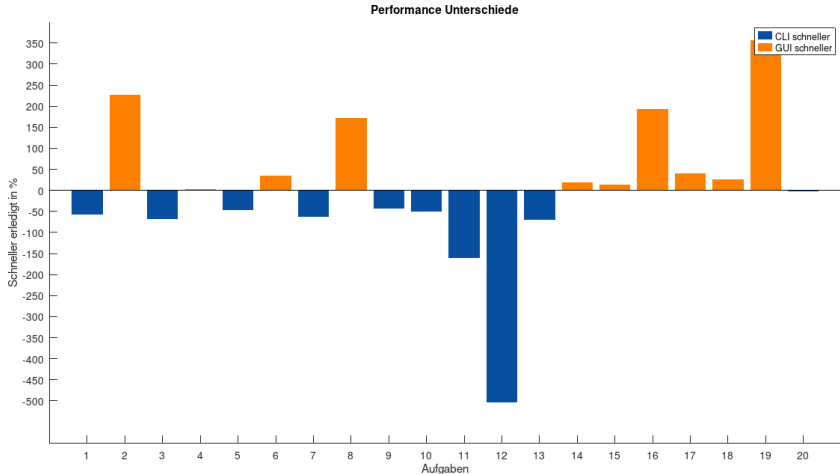
# Hypothesen

1. Vergleichbare Performance
2. CLI Performance verbessert sich
3. CLI wird vorgezogen

# Performance

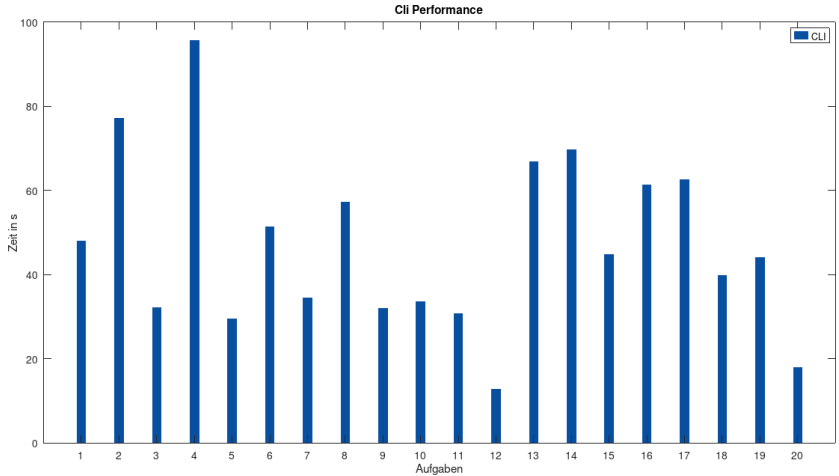


# Performance Unterschiede



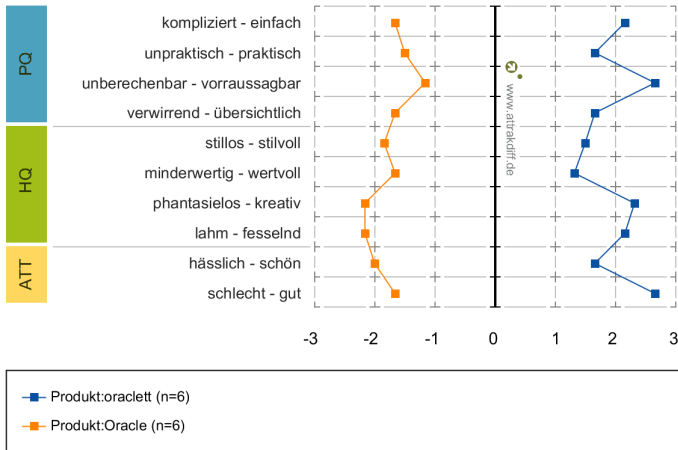


# CLI Performance



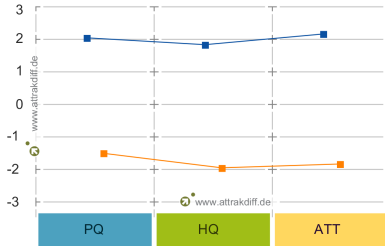
# Umfrage I

## Profil der Wortpaare



# Umfrage II

### Diagramm der Mittelwerte



- Produkt:oraclelett (n=6)  
PQ:2,04 HQ:1,83 ATT:2,17
- Produkt:Oracle (n=6)  
PQ:-1,50 HQ:-1,96 ATT:-1,83

## Portfolio-Darstellung



# Fazit