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Project Report

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AALBORG UNIVERSITY
STUDENT REPORT

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Chapter 1

Introduction

Autism spectrum disorder (ASD) is a condition that is characterized by a broad range of challenges within different areas such as social skills, speech and nonverbal communication, or by causing repetitive behavior. In 2014 there were 16.8 occurrences of the ASD diagnosis per 1,000 children, and approximately 1% of all Danes have an ASD diagnosis[1]. As ASD is a spectrum disorder, each person diagnosed with it has different strengths and challenges. This results in people with ASD learning, thinking and solving problems very differently, with ranges from highly skilled and functional to severely challenged. Some may require support in their daily lives while others on the spectrum can live entirely independently[2].

1.1 About GIRAF

GIRAF (Graphical Interface Resource for Autistic Folk) is an ongoing project developed by 6th semester software engineering students at Aalborg University. The project has been continuously developed on since 2011 with Ulrik Mathias Nyman as project coordinator, with the new students assuming responsibility and learning to cooperate in a bigger environment with an existing codebase. GIRAF is a program that serves the purpose of helping people with autism, with the primary user group being children. The primary goal of the system is to provide visual representation of the daily or weekly schedule for the users. During the lifetime of the project, different types of games and communication tools to help with education have been implemented, but most of these functionalities do not work after the API rework of 2017. The current focus of the GIRAF project is to make the weekplanner stable and fit for use, before resuming work on the other parts of the project.
A special aspect of the project, in comparison to previous projects, is the direct interaction with real customers, who are essential for the project. The customers serve to define requirements of the program and facilitate the familiarization of students with industry processes.

Currently the institutions that are represented are:

- Mette and Emil, Egebakken (School)
- Kristine and Susanne, Birken (Kindergarten)
- Flemming, Center for Autism
- Niels, IT manager in the elderly and disability administration.

1.1.1 State of Giraf - February 2019

1.2 Technologies and Tools

1.3 Before sprint 1

Before the first semester wide sprint could start, our group had some work to do as preparation hereof. First of all, during the readthrough of the reports from previous years, it was discovered that the PO group of 2018 had left us a suggestion for content in the first sprint:

Suggested sprint 1

Relevant user stories

- T1005: As a guardian, I would like to be able to mark activity(s).
- T1242: Setting - Change the way an activity is marked as completed.

Requirements

This release focuses on one small guardian quality-of-life feature, as well as a setting for the citizens.

Mark activities The guardian must be able to enter a mark state from a button on the master-detail page. The mark state enables the guardian to mark one or multiple activities (much like how it works with email inboxes, where you can mark the emails you wish to interact with.) Then after they've entered this mark state, the button to enter marked mode must be replaced by a return button that leaves mark mode and removes all marks. Also, the ability to delete all marked activities should be implemented.

Completed marker The completed marker is the ability to change the way an activity is marked as completed. The following options must be implemented for this release:

- Checkmark: A checkmark is placed on top of the activity. (This is already implemented, but must be an option once more options are added)

- Hide activity: The activity disappears from the citizens perspective but must still be visible to guardians so they can remove the completion marker.
- Move to the right: Move the activity further to the right in the day-column. This should only be available if the citizen also only prefers to have the week-planner shown in portrait mode, and thus prefers to have a single day shown.

This must be implemented on the settingspage.

Suggested sprint 2

Relevant user stories

- T913: As a user, I would like to be able to time tasks using a timer.
- T922: As a user, I would like to be able change the visual representation of the timer

Requirements

The release focuses on a timer for the activitypage, which is the page you get when tapping an activity. This timer is used by the citizens to keep track of time for those activities that need it, and thus the guardians must be able to place a timer on the activity page, which the citizens can then access.

The timer The guardian must be able to add a timer to an activity. The purpose of the timer is to time the activities that need to be timed, to remove the necessity of the guardians using a physical timer. If the guardian chooses to time an activity, the timer must be placed on the activitypage of the given activity. The guardian must also be able to set the specific length of the timer, with the visualization of a timer adapting to the length. Furthermore, the guardian must be able to add timers to future activities, to prevent them having to constantly enter the application to add a timer to an activity.

A citizen must be able to start the timer by entering the activity page for an activity marked as active and pressing a "Start" button. If the activity is not marked as active, the timer cannot be started.

Setting for visualization of timer Citizens visualize time in different ways. It is, therefore, necessary for the guardians to be able to choose the specific timer that a citizen wants to use. The citizens must, therefore, have a setting that specifies the visualization of the timer. As a start, the visualization setting must include the following different timers.

- Digital clock
- Egg-clock

- Hourglass

The chosen visualization must then be used as the timer in the activity.

1.3.1 Interview with Emil from Egebakken

1.3.2 User stories

Based on the suggested sprints from the previous PO group and the interview with Emil, we defined a series of user stories with suggested features.

1.3.3 Design guide

1.3.4 Producing Prototypes in Adobe XD

Chapter 2

Sprint 1

2.1 Interview with Birken

2.1.1 Prototype feedback

Chapter 3

Sprint 2

Chapter 4

Sprint 3

Chapter 5

Sprint 4

Chapter 6

Conclusion

Chapter 7

Appendix

Bibliography

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[2] Autism Speaks Inc. *What is autism?* Accessed: 2018-02-22. URL: https://www.autismspeaks.org/what-autism.

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