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Project Report
Group: SW610f19

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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 Scrum of Scrums

Scrum is a framework that is used extensively in software projects. Its an agile approach to working with complex and changing problems where a normal waterfall model does not work optimally. Scrum of Scrums (SoS) is a modification of Scrum to scale it better for bigger teams. Many of the activities are similar to normal Scrum. The sprint process of SoS works in the following way:

- Sprint Planning
- SoS Stand Up
- Skill Group Meetings
- Release Preparation
- Sprint Review
- Sprint Retrospective
- Release Party

1.2.1 Sprint Planning

1.2.2 SoS Stand Up

1.2.3 Skill Group Meetings

1.2.4 Release Preparation

1.2.5 Sprint Review

1.2.6 Sprint Retrospective

1.2.7 Release Party

1.3 Technologies and Tools

This section describes the technologies and tools that are used in this project. Some of them are used to facilitate the collaboration between all the groups in the GIRAF project while others are used internally in our group.

Jira

Jira is a software development tool developed by Atlassian and is used for agile software development. The software facilitates the creation of a backlog of user stories that can then be assigned to a sprint. The team can assign story points to each assignment and assign a user to the user story, to distribute the workload properly over the coming sprint. Jira also includes multiple tools for managing and monitoring sprints and their progress, to help with retrospectives and to ensure the sprint is proceeding as planned. We used it for our weekly sprints that were run internally in the group.

Adobe XD

Adobe XD is a program for prototype creation, that is easy to pick up and create simple designs in. Adobe XD makes it easy to reuse components in multiple design projects and to collaborate with others. It also lets you assign functionality to the prototypes, meaning they can be used for usability testing with the users to demonstrate the functionality.

GitHub

GitHub is a development platform that makes it possible for multiple people to collaborate on a project. All of the code in the GIRAF project is hosted on GitHub. The issue and project features are used to create and assign user stories to the different groups that are working on the GIRAF project and to manage the sprints. The GIRAF wiki is also hosted on GitHub.

Slack

Slack is a collaboration hub where users can create a workspace that they can invite their collaborators to. It is possible to create multiple channels with independent communication. The collaborators can then choose which channels they want to join. Slack has been used for all communication across the participating groups of the GIRAF project.

1.4 Before Sprint 1

1.4.1 Interview with Emil from Egebakken

1.4.2 Producing Prototypes in Adobe Xd

1.5 Scrum of Scrums

Scrum is a framework that is used extensively in software projects. Its an agile approach to working with complex and changing problems where a normal waterfall model does not work optimally. Scrum of Scrums (SoS) is a modification of Scrum to scale it better for bigger teams. Many of the activities are similar to normal Scrum. The sprint process of SoS works in the following way:

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1.5.1 Sprint Planning

1.5.2 SoS Stand Up

1.5.3 Skill Group Meetings

1.5.4 Release Preparation

1.5.5 Sprint Review

1.5.6 Sprint Retrospective

1.5.7 Release Party

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

- [1] Centers for Disease Control and Prevention. *Data & Statistics on Autism Spectrum Disorder*. Accessed: 2019-02-22. 2018. URL: <https://www.cdc.gov/ncbddd/autism/data.html>.
- [2] Autism Speaks Inc. *What is autism?* Accessed: 2018-02-22. URL: <https://www.autismspeaks.org/what-autism>.

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