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Project Report  
Group: SW610f19

Aalborg University  
Department of Computer Science  
Selma Lagerlöfs Vej 300  
9220 Aalborg East, DK

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**AALBORG UNIVERSITY**  
STUDENT REPORT

**Department of Computer Science**  
Aalborg University  
Selma Lagerlöfs Vej 300  
9220 Aalborg East, DK  
[www.cs.aau.dk](http://www.cs.aau.dk)

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**Participant(s):**

Andreas Stenshøj  
Daniel Moesgaard Andersen  
Frederik Valdemar Schrøder  
Jens Petur Tróndarson  
Rasmus Bundgaard Eduardsen  
Mathias Møller Lybech

**Supervisor(s):**

Chenjuan Guo

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## Todo list





# 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. In this project we used Scrum of Scrums (SoS) to structure the groups across the whole GIRAF team. SoS is a modification of Scrum made 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

Sprint planning is a meeting on the first day of a new sprint where all groups are expected to show.

Prior to the meeting the PO-group has made user stories based on communication with the customers. The user stories will have prototypes, a definition of what is needed based of the view of a user and a technical description of what is expected to be coded.

The PO-group has also made relevant and realistic goals for the oncoming sprint, which should translate into a new release of the GIRAF software for the app store. It is important that the goals are reachable to give the groups a sense of accomplishment. This has been an issue in earlier years were groups did not feel that there was a clear improvement in the software which drastically reduced moral.

The meeting starts by the PO-group presenting, or refreshing, the goals they chose for the whole semester and then more specifically the goals they want fulfilled

in the oncoming sprint. Afterwards the groups will look at the user stories that is in the the backlog and ask clarifying question if needed.

The groups then choose a user story from the highest prioritized user stories. Before the groups can begin working they have to get their choice approved by the PO-group. When all the groups have been approved the sprint planning is over and development can begin.

### 1.2.2 SoS Stand Up

During a normal sprint week there will be at least one SoS Stand Up meeting. All groups should send at least one person to these meetings but if necessary more can attend, though the goal should be to send as few as possible. A Stand Up meeting takes at most 15 minutes, when 15 minutes has past the meeting ends no matter what.

During the meeting each group should present what they have, and are, working on and what they will work on until the next meeting. They should also notify the others of what problems they had faced or are facing and if they are about to introduce something new that could affect other groups. Each group representative takes turn to present, if there is time afterwards people may ask questions to the other groups else they have to talk after the meeting.

### 1.2.3 Skill Group Meetings

Based on advise from last years groups we chose to implement skill groups. Compared to previous years where a whole group had a role such as frontend, backend or server, these responsibilities has now been spread out across groups so that each group has at least one person responsible for frontend, backend or server.

### 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**

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### **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**



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# Listings