D.I.E.M.

# GEOMETRIC DRAWING PROGRAM

Final presentation of Software Engineering Project

Group no. 8
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# Objectives

## Develop a JavaFX Application for design and realize geometrical drawings

- User Friendly GUI
- Develop **valuable code**
- Easy to **extend**
- Follow a **test driven development**
- Resolve typical problems using **design patterns**
- Design the application following **an architectural pattern**

# Tools

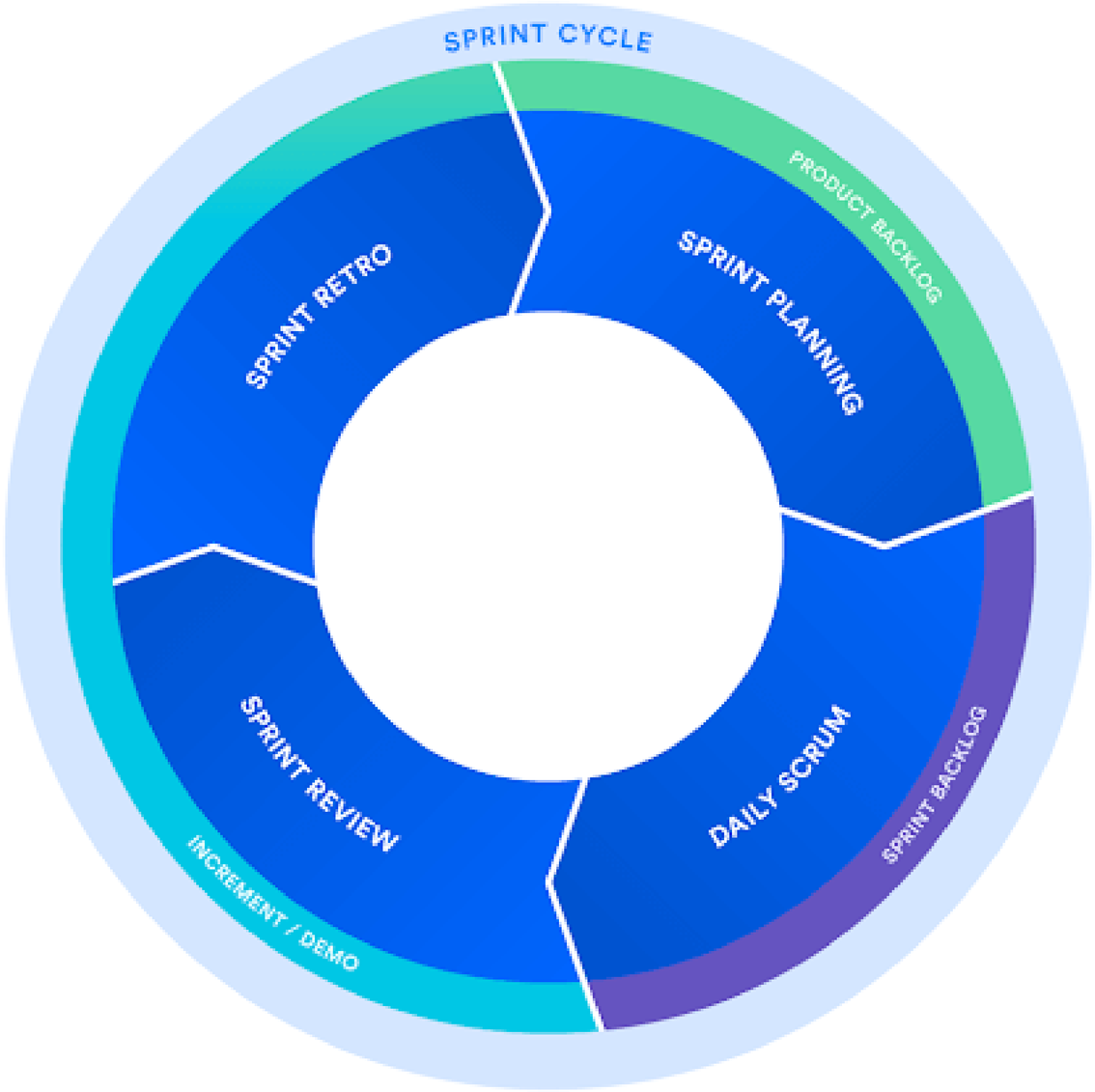
## Technologies used for the development of the project

- **GIT** as version control system
- **TRELLO** for developing collaborative projects
- **MS Teams** for communication in remote
- **NetBeans IDE** with **Java 8**
- **JUnit4** for testing
- **Google Drive** for sharing documents

# SCRUM

## MAIN PRINCIPLES

1. Control over the empirical process
2. Self-organization
3. Collaboration
4. Value-based prioritization
5. Time-boxing
6. Iterative Development



# Pivotal points of development

1

## User Stories

Defined by the Product Owner through the User Epics

2

## Architecture

Model-View-Controller architectural pattern to separate data from view and organize the classes

3

## Test Driven Development

Focuses on creating unit test cases before developing the actual code

4

## User Feedback

Product Owner have a view of the project and meets with the development team a on a daily basis, to share customer feedback and insight

# First sprint

## Design of the project

### Architecture

Model view controller pattern, to spilt the business logic from the graphic one

### Requirement analysis

Definition and prioritization of the User Stories, reading and interpreting the client's requirements

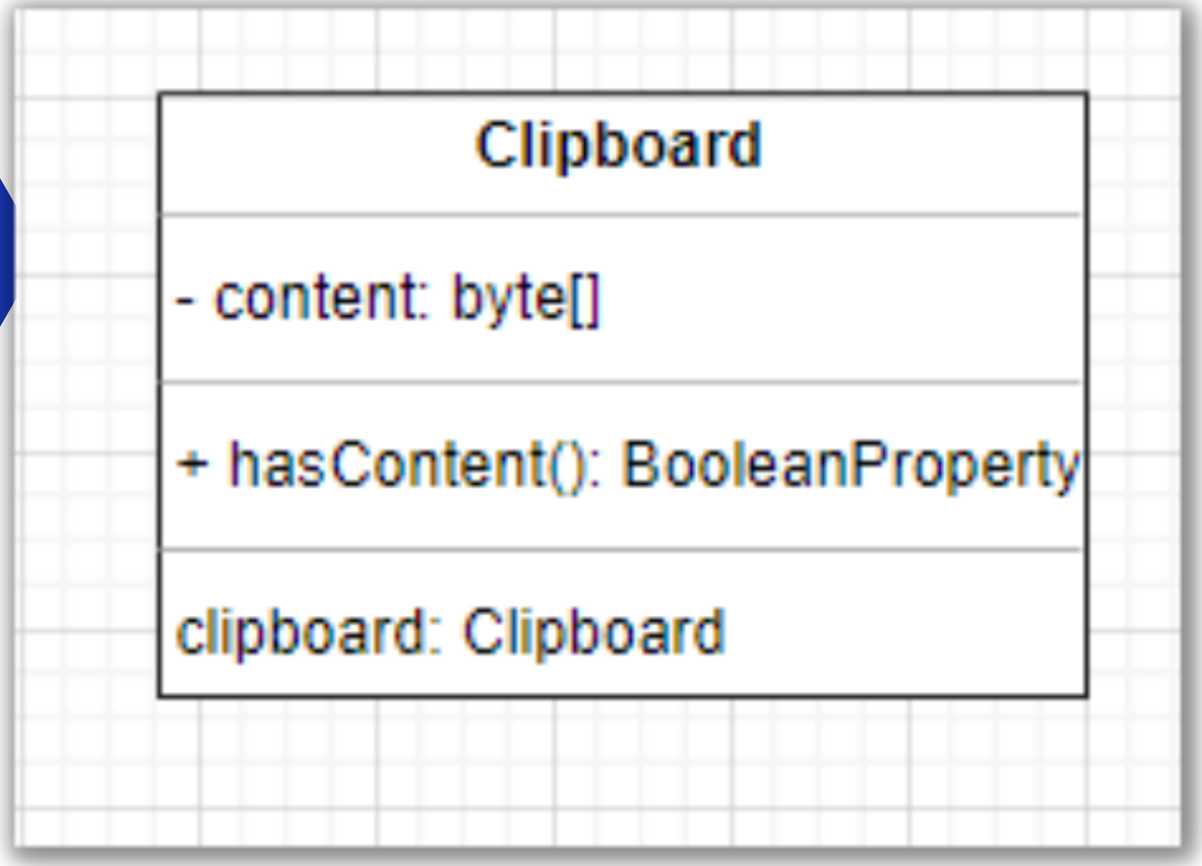
### Definition of done

Done means that every task under the User Story has been completed and tested and any work created is attached to the User Story so the Product Owner can review it and make sure it meets his or her expectations.

# SINGLETON

Design patterns

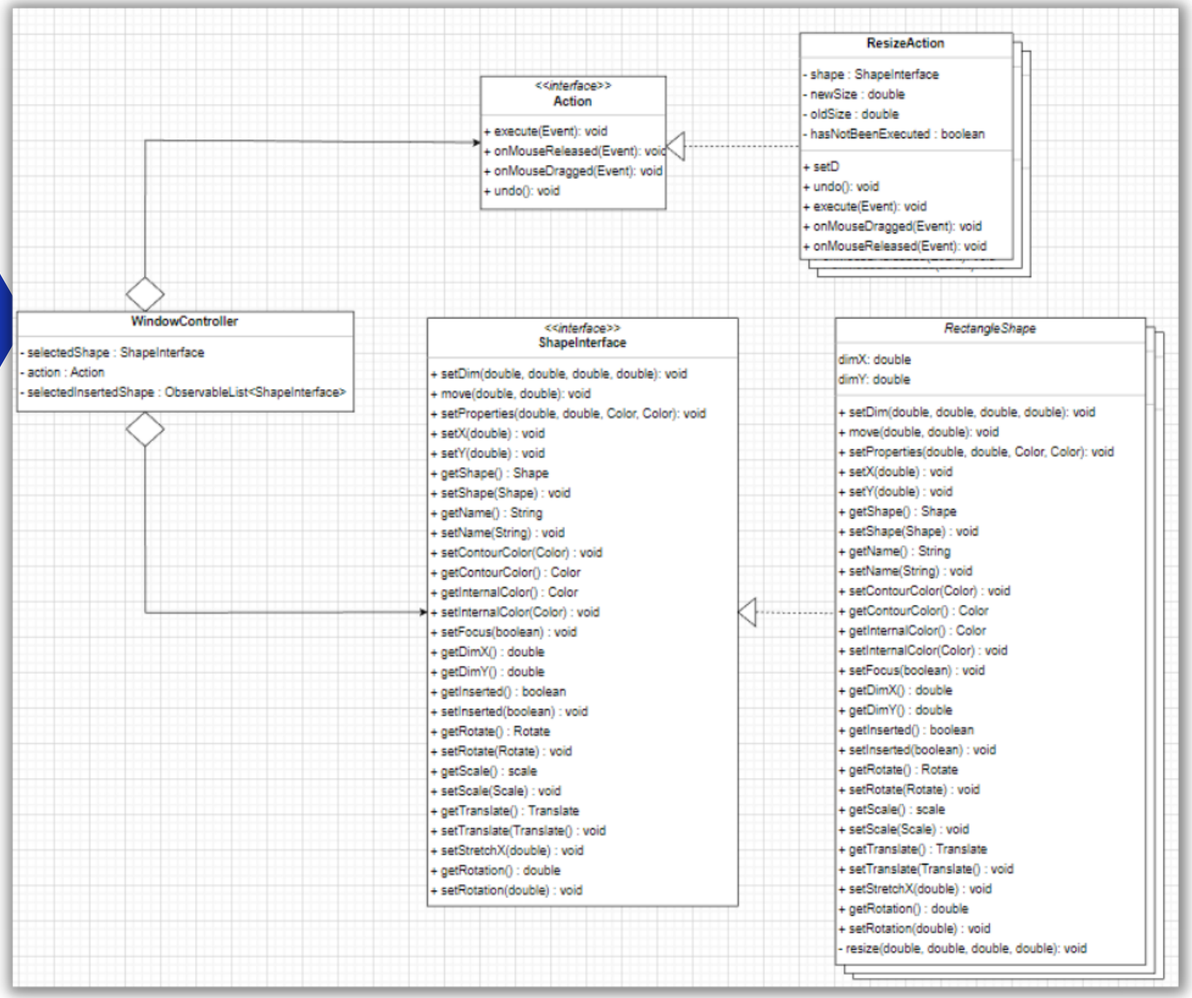
The singleton design pattern is used to be sure that only one instance of the clipboard can be instantiated



# STATE

## Design patterns

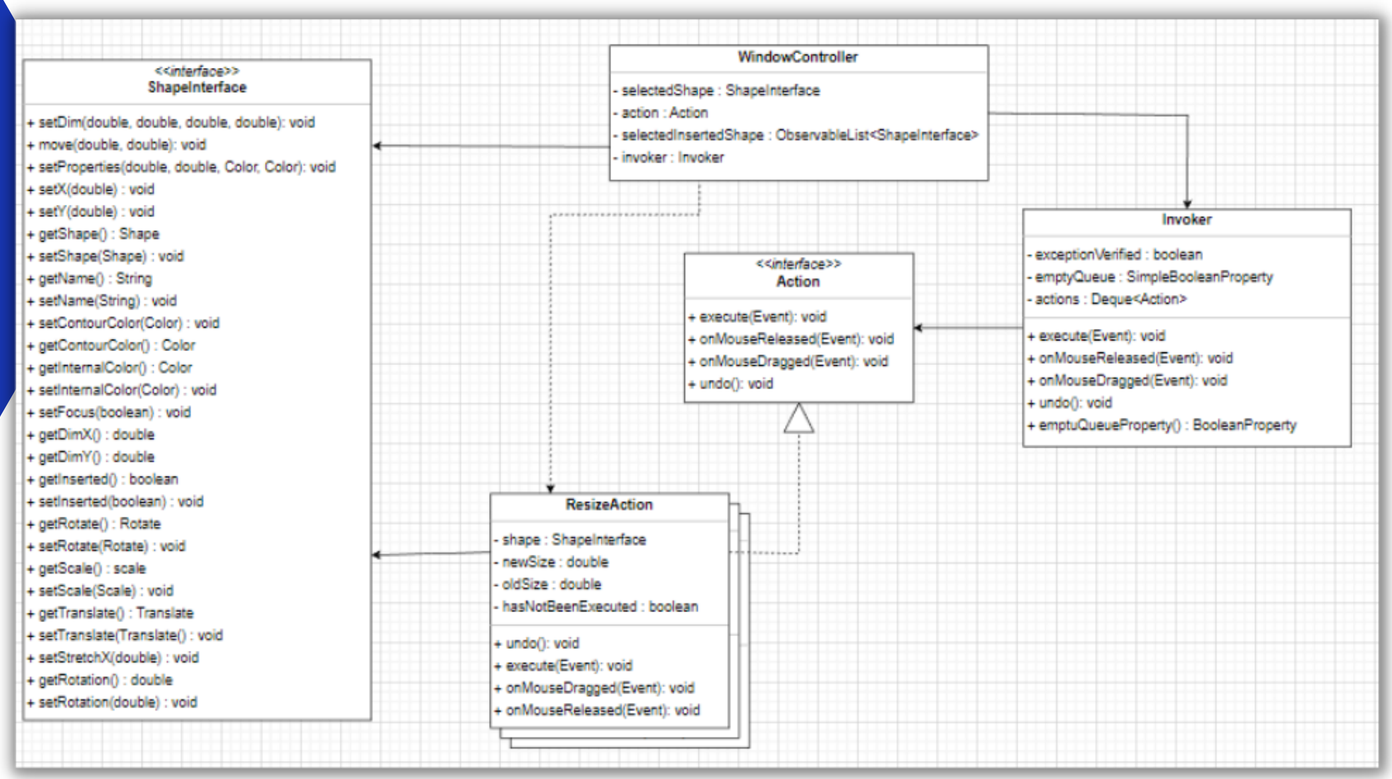
The state design pattern is used to memorize various choices of the user, like the shape selected for inserting or the one selected from the drawing, and for memorizing the action chosen by the user



# COMMAND

## Design patterns

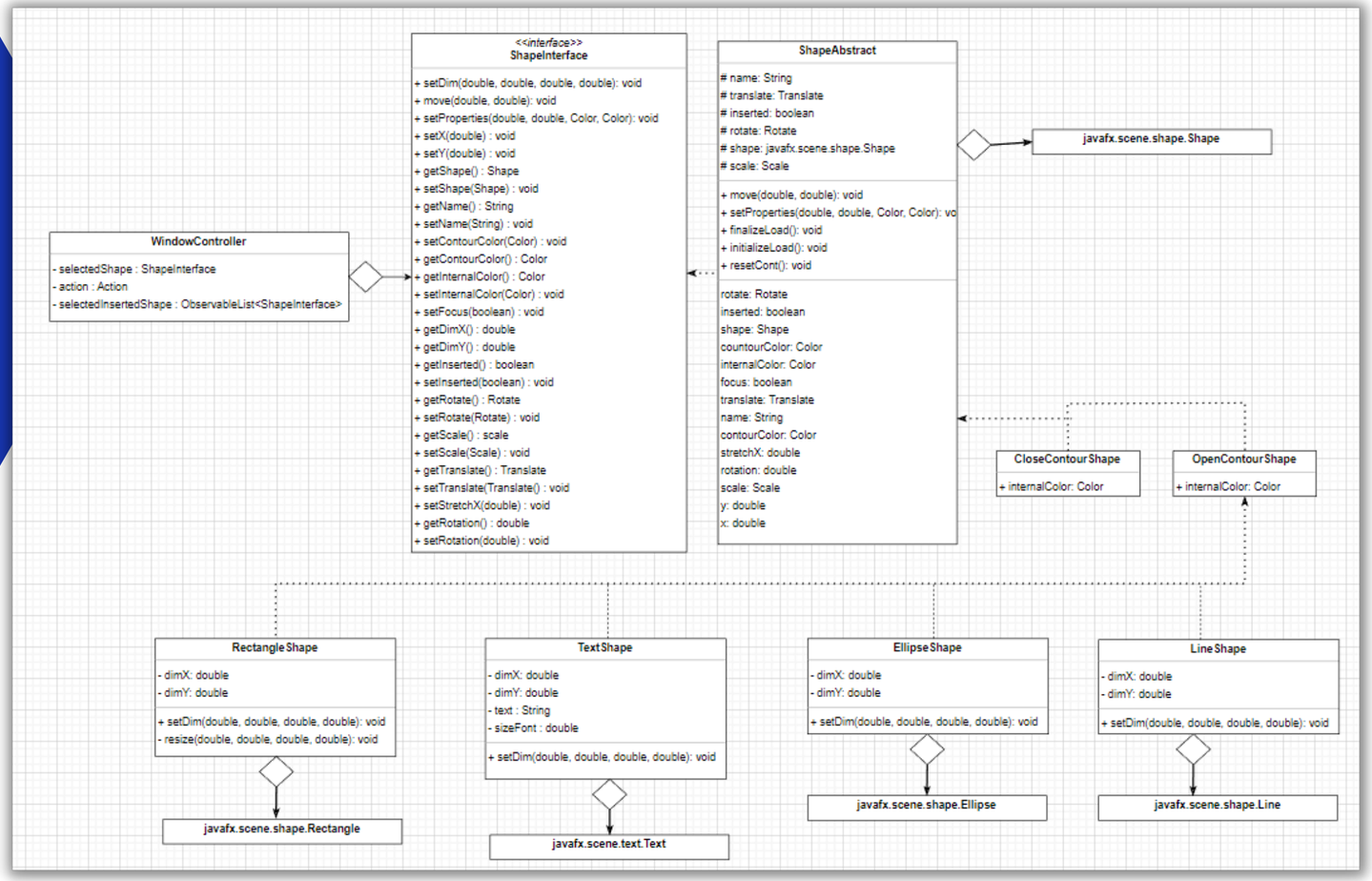
The command design pattern is used to parameterize all the actions to execute and support the undoing of done actions



# ADAPTER (Object)

## Design patterns

The object design pattern is used to adapt the public methods of the default JavaFX shapes to an interface defined by the developers



# Second sprint

## Product updates

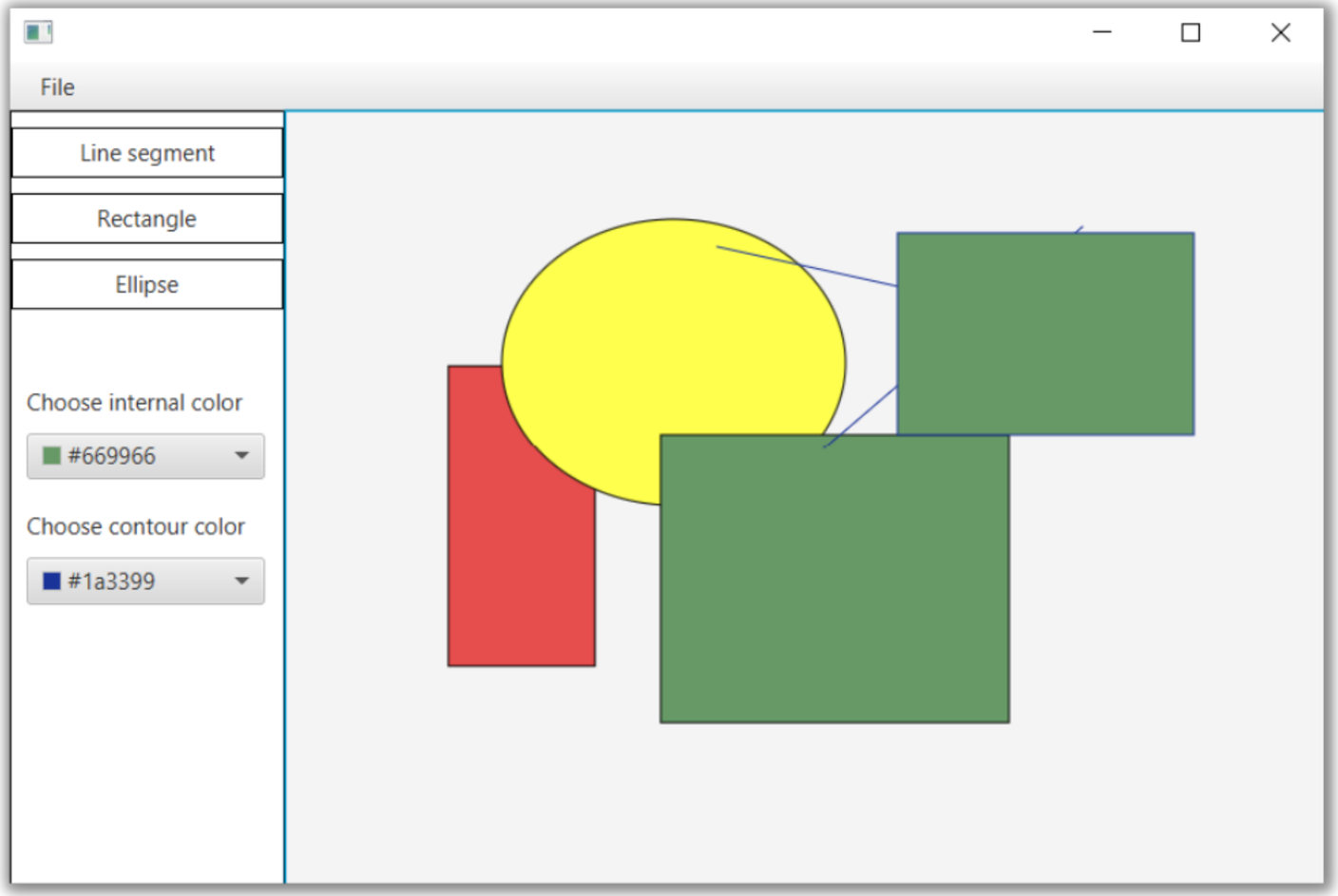
## Basic operations on the drawing window

### Basic GUI with a few operations

- Very simple GUI made of a drawing window and a shapes section from which choose a shape to insert

### Save and load capabilities

- Possibility to save on a binary file the content of the drawing window and load a drawing from it,  so it becomes possible to continue drawing among different execution of the program



# Second Sprint

## Sprint Review and Retrospective

### Process Analysis

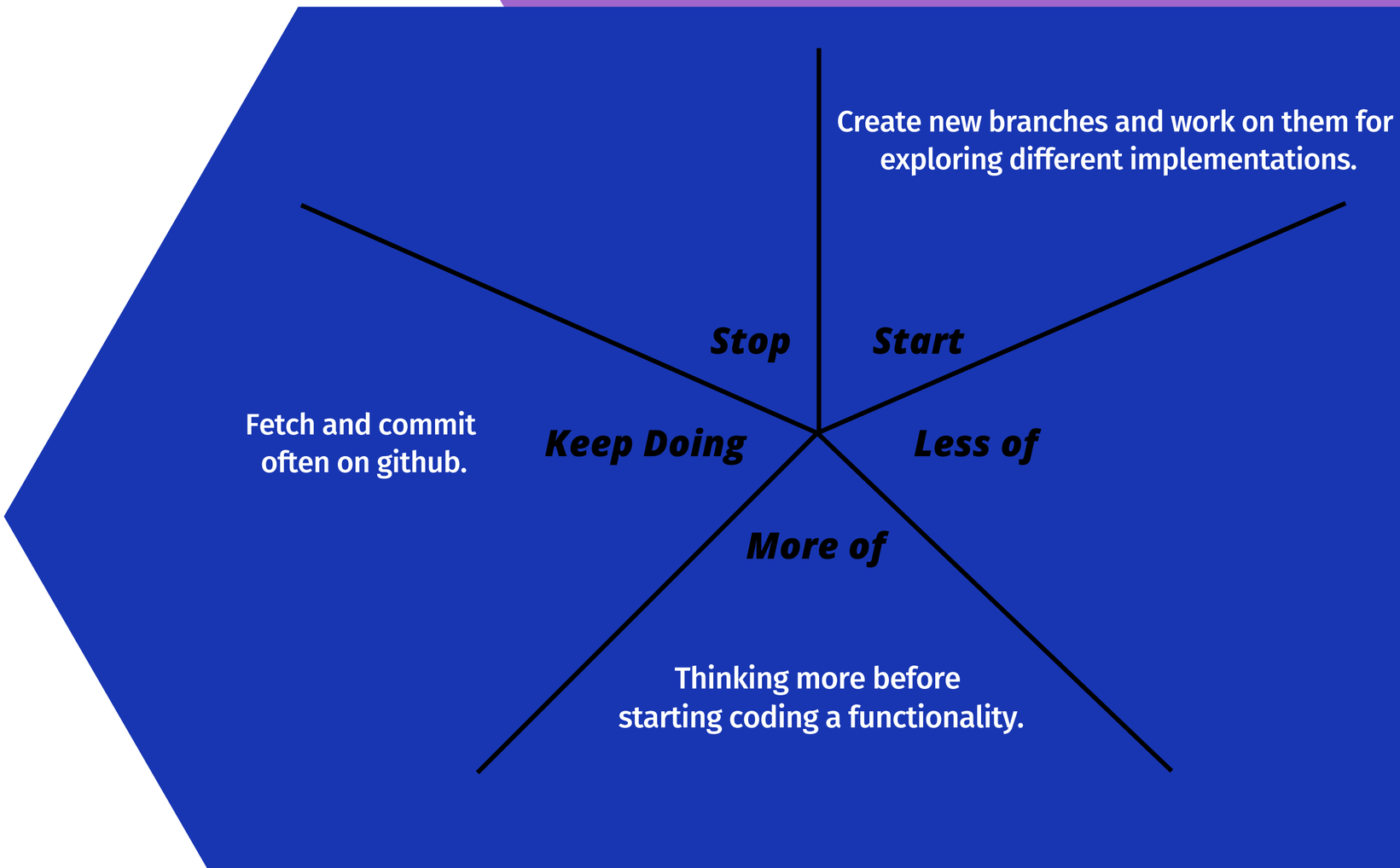
**User Stories planned**: 13
Corresponding story point: 34

**User Stories completed**: 15
Corresponding story point: 41

Estimated initial Project Velocity: 30
**Measured Project Velocity: 41**

Added 2 user stories

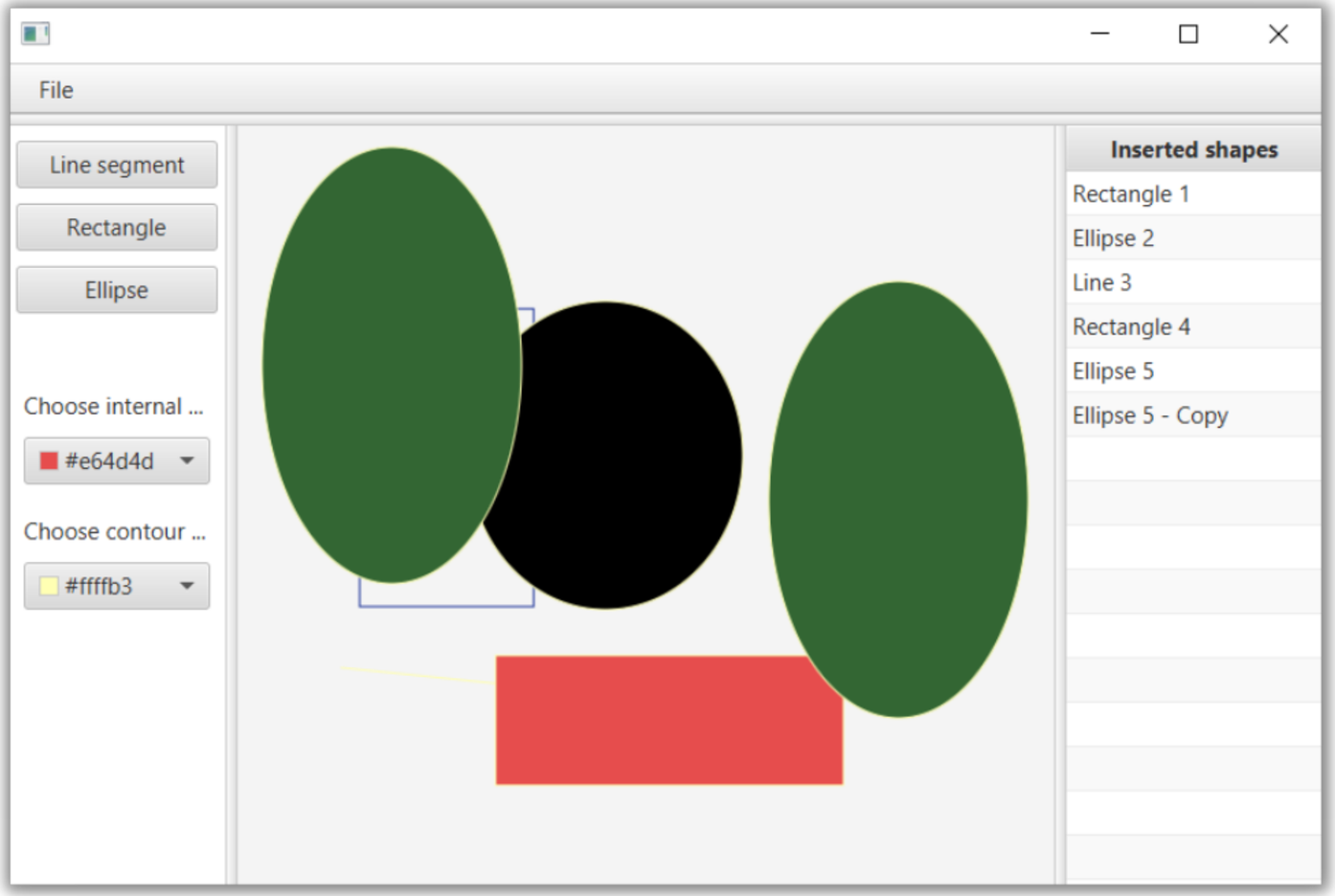
Found 2 bugs and 2 technical debts



# Third sprint

## Product updates

## Shape Editing




**New operations**

- Added move, focus, change internal and contour color, resize, copy and paste operations

**List of shapes**

- On the right side of the program now there is a table filled with the shapes currently inserted in the drawing

# Third Sprint

## Sprint Review and Retrospective

## Process Analysis

**User Stories planned**: 12
Corresponding story point: 50

**User Stories completed**: 10
Corresponding story point: 40

Estimated initial Project Velocity: 41
**Measured Project Velocity: 40**

Added 2 user stories

Found 3 bugs and 1 technical debt
*Solved 2 bugs and 4 technical debts*

# Fourth sprint

## Product updates

## More Shapes and Editing Operations

### Text shape

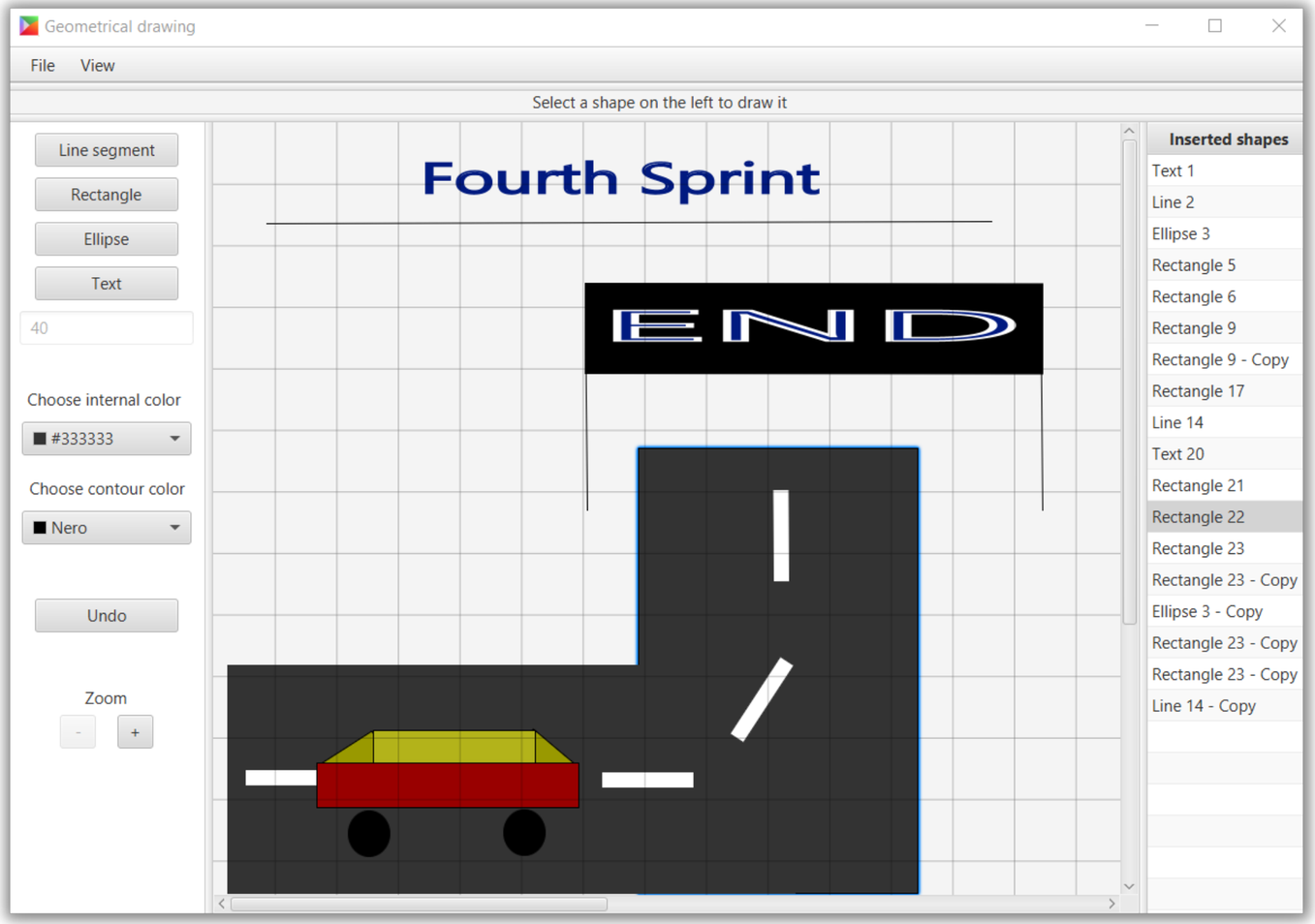
- Now a text shape is available, in which the user can freely write anything

### New operations and undo

- Added cut, rotate, mirror, stretch and set font size operations with the possibility to undo executed operations

### Grid on the drawing

- The user can now place a custom size grid to help him drawing new shapes



# Fourth Sprint

## Sprint Review and Retrospective

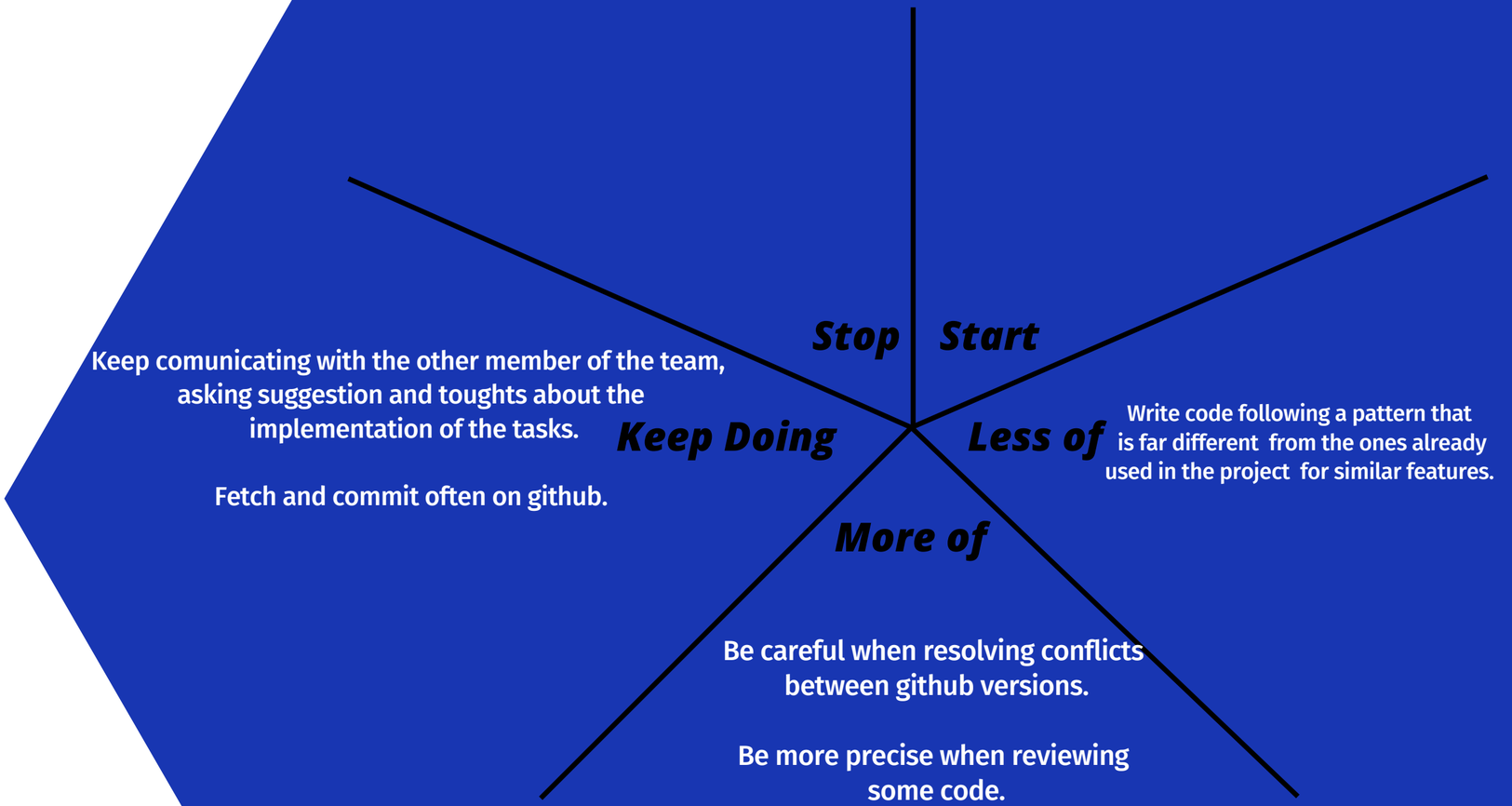
### Process Analysis

**User Stories planned**: 16
Corresponding story point: 42

**User Stories completed**: 15
Corresponding story point: 41

Estimated initial Project Velocity: 42
**Measured Project Velocity: 41**

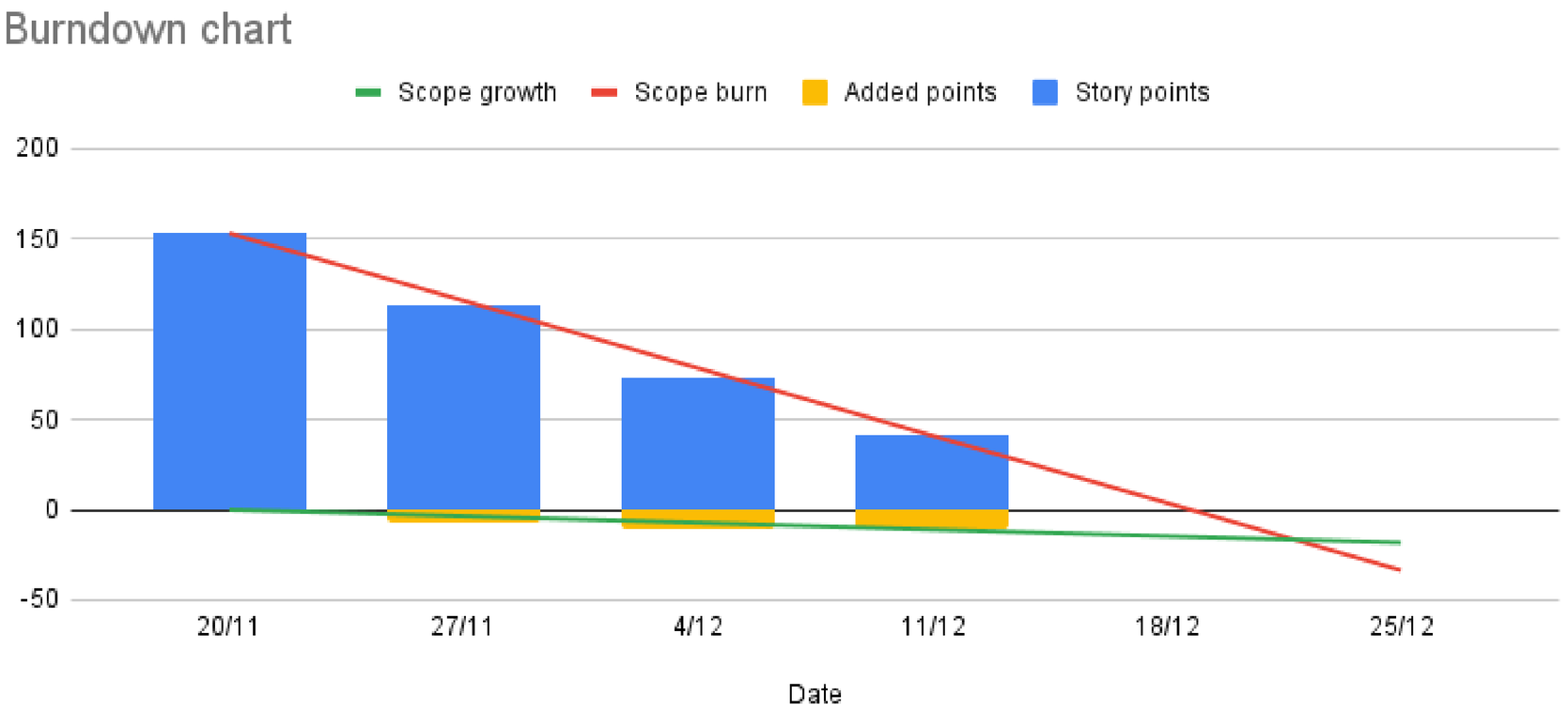
Found 2 bugs and 1 technical debt
*Solved 4 bugs and 1 technical debts*



# Burndown chart

**Likely release date**

Through analyzing the burndown chart it's possible to estimate a likely release date it's foreseen to be around the 20th of December.



# Thank you!