

Florida International University
School of Computing and Information Sciences

CIS 4911 - Senior Capstone Project
Software Engineering Focus

Feature Document

User Story #882

Team Member:

Jorge Nonell, Eric Aguiar, Alex Karpis, Chris Naranjo

Product Owner(s):

Francisco R. Ortega

Mentor(s):

Francisco R. Ortega

Instructor: Masoud Sadjadi

User Story – Add Color Picker

- As a user I want to be able to select a paint color from a variety of colors

Acceptance Criteria

1. Can select a color
2. Can choose alpha (transparency)
3. Show preview of selected alpha, and color

Use case #1 – Use color wheel to select a color

Gaze on the color wheel and tap to select a color

Details

Actor: User, Developer

Pre-conditions:

- “Holo-paint” installed on HoloLens
- Facing a direction with a wall at least 5m away (to start app)
- Canvas active in world

Description

Begins whenever a user starts the program and has an active canvas

Gaze towards desired color, then tap.

Ends when preview pane correctly shows selected color

Post-conditions

Preview pane should show desired color

Decision Support

Frequency

- Often
 - User should be able to change what color they are painting with as often as they wish

Criticality

- High
 - Painting with many colors leads to a better user experience

Risk:

- Medium
 - Diameter of color wheel may need to be increased as it can be tough to hit from certain distances
 - Should be simple enough for a user to understand what each function does

Constraints

Physical device required

Usability

Diameter of color wheel may be an issue, may want to separate the color picker and alpha triangle into different objects

Performance

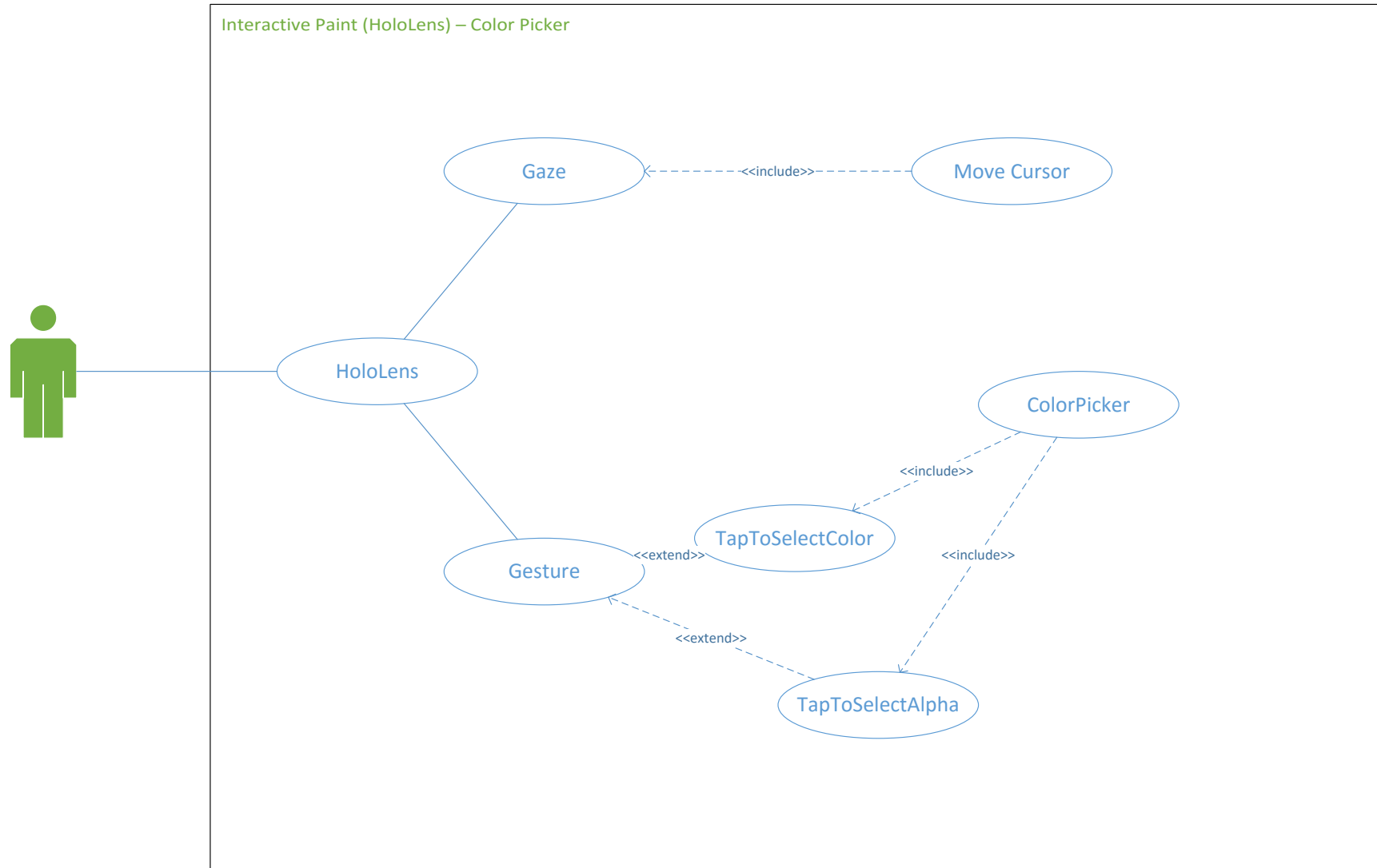
Color wheel adds no perceivable impact to performance

Performance could drop depending on object being painted

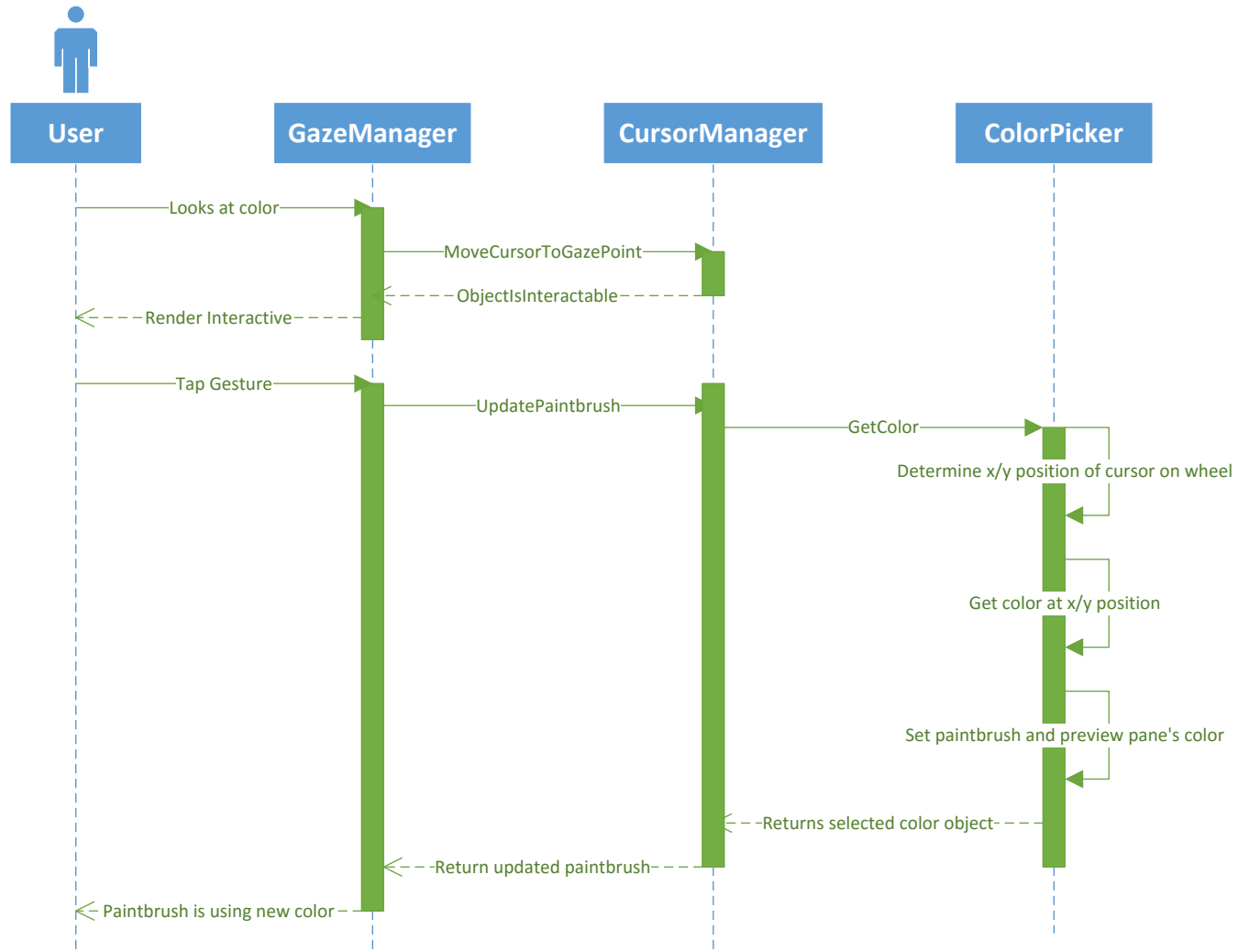
Supportability

Application only works on HoloLens.

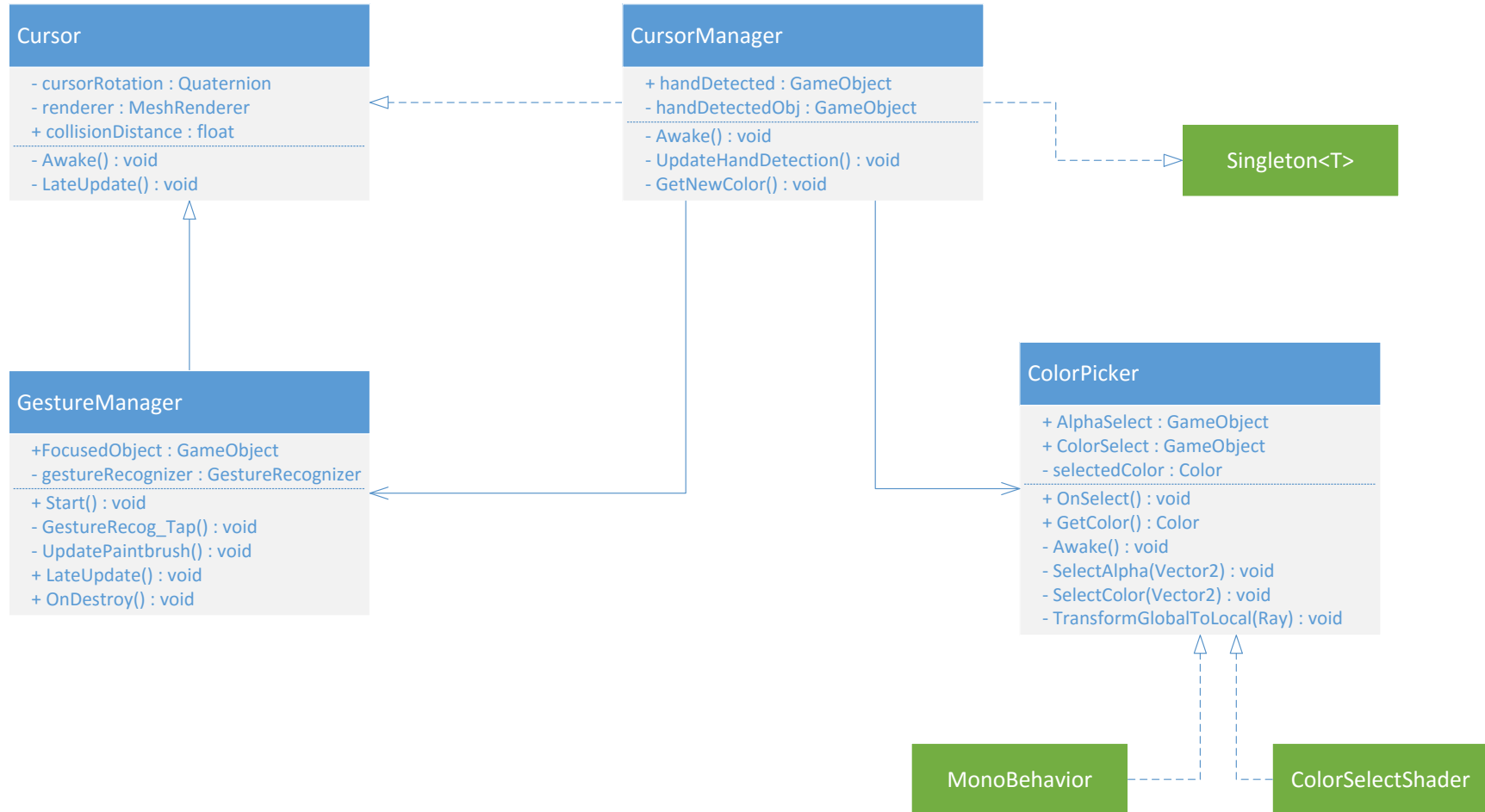
Use Case



Sequence Diagram



Class Diagram



Unit Test

Sunny Day Tests

Test case

Able to select a specific color

Test purpose

User should only be able to select colors and alpha from the supplied wheel

Test Setup

Program Running, with a canvas up.

Test output

Color preview updates when user does a tap gesture

Expected output

Color preview correctly updates

Rainy Day Tests

Test case 1:

Canvas should not be able to be moved on top of the color picker, or catch the GUI as the user walks around the room.

Test purpose

User should not be able to get the color picker or canvas holograms stuck on each other. Color picker is immobile, but does interact with spatial map to prevent it from spawning in a wall.

Test Setup

Program Running
Canvas up
Within 2m to a wall

Test output

User opens color picker, rotates and places itself along intersecting surface

Expected output

User moves around the room with color picker not clipping into the wall or otherwise being unresponsive

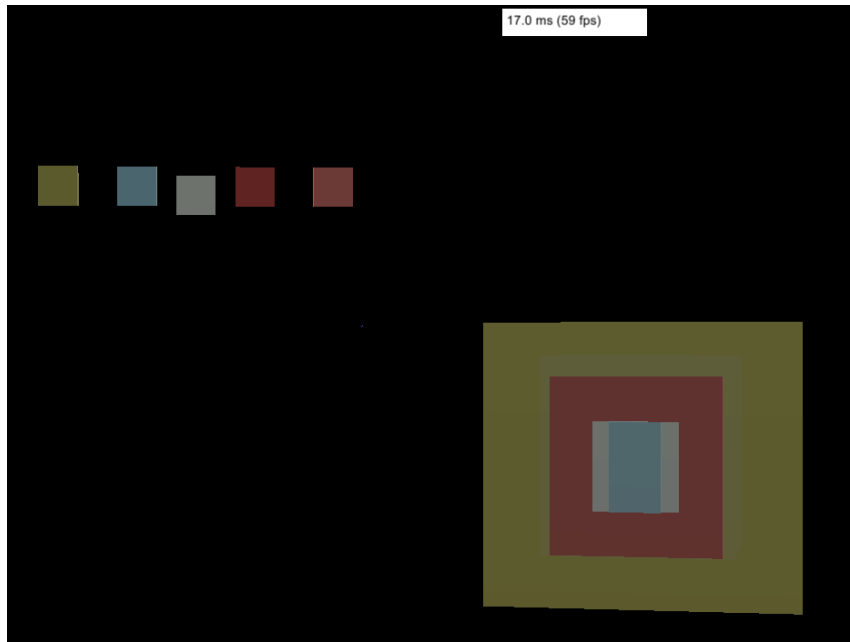
Integration Test

Color wheel should maintain its positive-x normal facing the user at all times, as it's a 2D object. Remains intractable up to set max interaction distance.

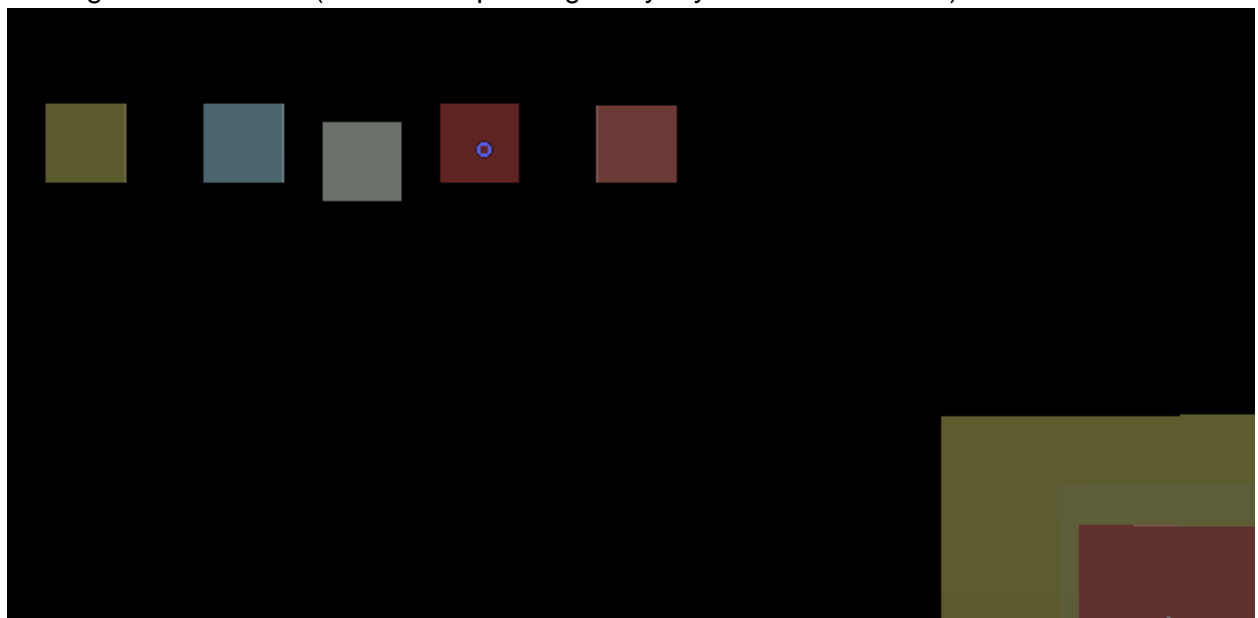
User Guide

Have open canvas:

Buttons correspond to active layers



Move gaze over button (color corresponding to layer you want to remove)



Button will show as intractable (hollowed circle). Tap to remove the red layer.



Tapping the button again will bring back that layer. (In this case, I removed white and blue, and brought back red)

