

# Polybius

Team 9

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## Sprint Overview

We will be working on the foundation for the backend of Polybius. We will build the web server using SmartFox, and we will also setup the database using MySQL. We will also implement basic augmented reality functionality and setup user authentication. Users will also be able to create their profiles and chat with other users. This will be programmed in C# in Unity3D. We will also be using the Vuforia API for augmented reality functionality.

**Scrum Master:** Leo Liu

**Meeting Plan:** We will be meeting every Tuesday and Thursday after 2:30pm and 3:30pm, respectively.

### Risks and Challenges

Some of the challenges we will face will be initially learning how to use Unity3D, integrate the SmartFox Server with our database and in-game networking, implement OneSignal API for mobile push notifications, and implement the Vuforia API for augmented reality tracking. In addition, we will have to deploy our server successfully before client testing can begin.

# Sprint Details

## User Story 1:

As a user, I would like to create a Polybius account so that I can have a personalized experience.

## Task Table:

Task Number	Description	Time	Task Owner
1	Integrate SmartFox Server	2 hours	Leo Liu
2	Create web server and develop core database	4 hours	Thomas Simons
3	Create user authentication model	3 hours	Leo Liu
4	Write scripts to connect smartfox server to database	4 hours	Thomas Simons
5	Unit test web server & authentication	3 hours	Leo Liu & Thomas Simons

## Acceptance Criteria:

- Given that the user creation process is functional, a user model can be instantiated through SmartFox
- Given that the user creation process is functional, a user instance can be inserted into the user table in the database
- Given that the user creation process is functional, a user profile can be queried by accessing a unique URL
- Given that the user creation process is functional, a user can login by

**User Story 2:**

As a user, I want to have a profile that others can see so that others can connect with me.

**Task Table:**

Task Number	Description	Time	Task Owner
1	Create database model for users	3 hours	Lucas Hahn
2	Create user profile page UI	4 hours	Christopher Sculley
3	Design server files to manage user data	3 hours	Lucas Hahn
4	Calculate Statistics about Users	2 hours	Lucas Hahn
5	Unit test database model using test accounts	4 hours	Lucas Hahn
6	Write script to get data from server	2 hours	Thomas Simons

**Acceptance Criteria:**

- Given that the user database queries are functional, the user profile page should show relevant data to a single user
- Given that the user database queries are functional, the database should store user data for requests
- Given that the user statistics are calculated correctly, the users should see accurate statistics
- Given that user statistics are being tracked correctly, users should be able to see wins, losses, and specific statistics for each minigame (e.g. for Pong: number of clutch saves, or wins in a row)

**User Story 3:**

As a user, I want a easy-to-use interface that feels satisfying to use so that I will enjoy using the application.

**Task Table:**

Task Number	Description	Time	Task Owner
1	Create main menu UI	2 hours	Leo Liu
2	Create login page	3 hours	Leo Liu
3	Unit test login page by logging in existing user	2 hours	Leo Liu
4	Create account creation page	4 hours	Leo Liu
5	Unit test account creation page by registering new user	2 hours	Leo Liu
6	Optimize UI for mobile devices	3 hours	Leo Liu
7	Verify mobile apps can view UI and dimensions are correct (unit test mobile app)	3 hours	Leo Liu

**Acceptance Criteria:**

- Given that the main menu UI is functional, user should be able to view elements of the UI and click through the different buttons
- Given that the login page is functional, users should be able to login to their existing account
- Given that the account creation page is functional, users should be able to create a new account
- Given that the app can run on mobile devices, users should be able to download the app and run it off their mobile device

**User Story 4:**

As a user, I want a messaging system to message my friends so that we can continue to communicate outside of matches.

**Task Table:**

Task Number	Description	Time	Task Owner
1	Create messaging UI	2 hours	Christopher Sculley
2	Check messaging permissions and retrieve messages	3 hours	Christopher Sculley
3	Implement OneSignal for notifications	3 hours	Christopher Sculley
4	Optimize UI for mobile devices	3 hours	Christopher Sculley
5	Verify mobile users can chat and receive notifications (unit test mobile app)	5 hours	Christopher Sculley
6	Create database to handle messaging	3 hours	Lucas Hahn
7	Unit test messages using multiple test accounts	3 hours	Lucas Hahn

**Acceptance Criteria:**

- Given that a logged-in user interface is functional, there should be a page that displays any new messages received
- Given that a logged-in user interface is functional, messages should disappear once read by the user
- Given that a logged-in user interface is functional, users should get a notification on their mobile device once a new message is available
- Given that a logged-in user interface is functional, users should be able to send notifications to other users
- Given that a logged-in user interface is functional, users should only be able to see notifications once they have been logged in

**User Story 5:**

As a user, I would like to use augmented reality through my mobile phone to view virtual objects in the real world.

**Task Table:**

Task Number	Description	Time	Task Owner
1	Create a Vuforia account and enable augmented reality tracking	1 hour	Christopher Sculley
2	Implement Vuforia library in Unity	2 hours	Christopher Sculley
3	Unit test augmented reality and verify tracking works with device	2 hours	Christopher Sculley
4	Create tracking images with QR-code IDs	3 hours	Christopher Sculley
5	Dynamically fetch user IDs from the database	4 hours	Thomas Simons

**Acceptance Criteria:**

- Given that augmented reality tracking is enabled, users should be able to see a 3D object tracked to a custom paper target.
- Given that augmented reality tracking is enabled, the app should be able to extract an integer embedded in the custom paper target.
- Given that augmented reality tracking is enabled, users should be able to see whose ID the custom tracking images belongs to.

**User Story 6:**

As a developer, we would like to work in a team environment where current code is easily accessible and modifiable

**Task Table:**

Task Number	Description	Time	Task Owner
1	Setup Github for Unity	4 hours (1 hour per person)	Christopher, Leo, Lucas, Thomas
2	Setup key repos and allow Admin access for each programmer	4 hours (1 hour per person)	Christopher, Leo, Lucas, Thomas
3	Setup unity workspace for each programmer	4 hours (1 hour per person)	Christopher, Leo, Lucas, Thomas
4	Setup kanboard for planning documents and add all users	4 hours (1 hour per person)	Christopher, Leo, Lucas, Thomas
5	Setup dedicated smartfox server for unity	4 hours (1 hour per person)	Christopher, Leo, Lucas, Thomas

**Acceptance Criteria:**

- Given that each developer can connect to the main github repository, ensure that each member has downloaded the custom Unity software to sync their Unity projects with Github's Git for Unity program.
- Given that each developer can connect to the main github repository, ensure that each member knows how and where to use git to upload and integrate their work, in order to avoid git-related disasters.
- Given that the kanboard server is online, ensure that there are many separate channels to keep track of work done and work to do for Polybius' discrete components
- Given that the smartfox code is implemented correctly, deploy the smartfox server on a dynamic URL so that other members can run tests.

**User Story 7:**

As a developer, we would like to produce detailed documentation for each section of the project

**Task Table:**

Task Number	Description	Time	Task Owner
1	Planning document	12 hours (3 hours per person)	Christopher, Leo, Lucas, Thomas
2	Weekly progress reports	8 hours (2 hours per person)	Christopher, Leo, Lucas, Thomas
3	Documentation of scripts and code	12 hours (3 hours per person)	Christopher, Leo, Lucas, Thomas
4	Weekly code reviews	12 hours (3 hours per person)	Christopher, Leo, Lucas, Thomas

**Acceptance Criteria:**

- Given that our planning documents have ample information about the project, there should always be a clear path for progression for development
- Given that we are constantly building the project, there will be weekly progress reports on how we are doing.
- Given that we are always programming and collaborating on code, there will be documentation that describes our codebase and how to work with it.
- Given that we are constantly updating our codebase and programming new features, weekly code reviews are necessary to keep code clean with minimal bugs.



## Remaining Functional Requirements (backlog)

- ~~• As a user, I want to be able to create an account so that I can have a personalized experience~~
- As a user, I want to add other players as a friends so that I can build established connections
- ~~• As a user, I want to have a profile that others can see so that others can connect with me~~
- As a user, I want to see many statistics about the games I've played so that I can track my performance
- As a user, I want to be able to search for other users so that I can connect with others
- ~~• As a user, I want a messaging system to message my friends so that we can continue to communicate outside of matches~~
- As a user, I want to be able to find games around me so that I can easily join new games using a map
- ~~• As a user, I would like to use augmented reality through my mobile phone to view virtual objects in the real world~~
- As a user, I want to host games to play with nearby players so that I can meet new people
- As a user, I want bonuses for meeting up with new people so that I will be encouraged to meet others
- As a user, I want to send challenges to players to beat my high score so that I can challenge others
- ~~• As a user, I want a easy to use interface that feels satisfying to use so that I will enjoy using the application~~
- As a gamer, I want to keep track of my highscores so that I can see my progress and share my achievements
- As a gamer, I want to see the top players of any minigame
- As a gamer, I want to play this game multiple times so that I can meet new people
- As a gamer, I want to play Connect 4 using augmented reality against other players
- As a gamer, I want to play Pong using augmented reality against other players
- As a gamer, I want to play paper toss using augmented reality against other players
- As a gamer, I want to play tic tac toe using augmented reality against other players
- As a gamer, I want to spectate a game that is already in progress so that I can participate in the experience
- As a gamer, I want to be able to create a tournament so that I can encourage more collaboration than normal
- As a gamer, I want to be able to play in a tournament so that I can compete in larger and rarer events than normal
- As a user, I want to be able to join a community for the game so that I can feel included
- As a user, I want to be able to give feedback on the game so that it will be heard and considered
- As a user, I want to be able to report other players if I feel they exhibit inappropriate behavior so that I can avoid interacting with them

- As a user, I want to be able to find specific minigames so that I can play the games I like the most
- ~~As a developer, we would like to work in a team environment where current code is easily accessible and modifiable~~
- ~~As a developer, we would like to produce detailed documentation for each section of the project~~