Functional Specification SmartFeud (SF) - 2 SEP 2017

This document specifies the functions that SF must perform.

The SmartFeud (SF) game should be a near copy of the WordFeud (WF) game. All the features of WF should be incorporated except when specifically mentioned in this document, in which case the functionality is different or in addition to WF's functionality.

If a feature is not specifically mentioned below then it is the same as that of WF. This specification has been written by non-technical people so as a result technical considerations have not been taken into account. The document describes the desired functionality of the game. For us the bottom line is that a working version of the game should be delivered that complies with the policies of the Google Play Store and the Apple App Store (as applicable). So if a feature as described in the Functional Specification is technically not desirable (either because it is not possible technically or because it will result in a Game that doesn't work or because it is not desirable eg because it is detrimental to performance) then Digital Aptech should suggest an alternative solution which is technically feasible and that can deliver functionality as near as possible as to what is described in the Functional Specification. Upon approval of such change by Cambrian Hub Technologies that feature will then be implemented as suggested and still be considered within the scope.

Orientation

Same as in WF (the game should work in portrait mode on mobile phones and in both portrait and landscape mode on tablets).

Operating systems

iOS 8 and higher and Android 4.0 and higher

General

No text should be hard-coded in the design. All texts should be retrieved from the database, so it is easy to translate the game in different languages without having to edit any pictures.

Pictures in this document are indicational only and taken from the Wireframe. The style of the designs already made has to be used, but with all functionality as described in this document.

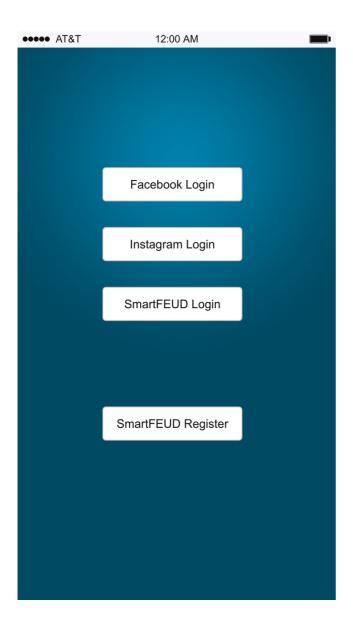
If there is any conflict between this document and the wireframe than this document is leading in the development of the game.

1. Login.

If a player downloads SmartFeud for the first time this screen should be shown. The player has three options for log-in.

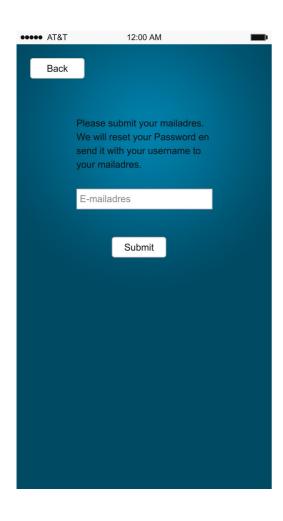
- Login with Facebook (should automatically get the Facebook profile-picture and user name.
- Login with Instagram (should automatically get the Instagram profile-picture and user name)
- Login with SmartFeud (Should automatically get the SF profile picture and username)

If a player has no social media and is a first-timer he can choose to register with SmartFeud. He can make his own account. This should be stored in the SF-database. After a player has chosen how he likes to log-in this screen will not be shown again, unless SF can not detect log-in data.



1A: Smartfeud Login

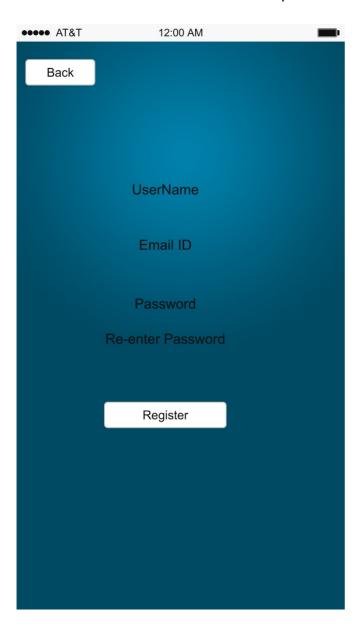
Here it is possible to login with username and password. If a user has forgotten his password he can click on 'Password lost'. This opens a new screen. Stating: "Please submit your mailadres. We will reset your password and send it with your username to your mailadres. This way both possibilities, lost password and lost username are resolved.



1b. Registration

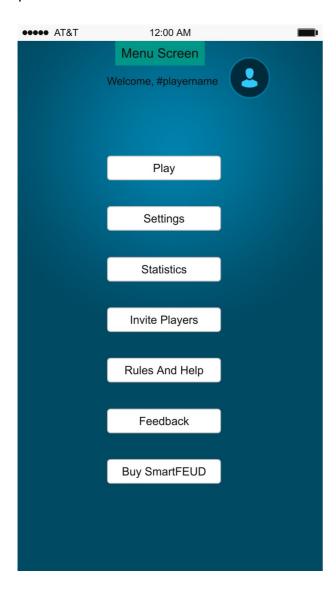
In this screen it is possible to make a SmartFeud account.

Needed is: Preferred username; E-mailadres; Password; Re-enter password In the left top there is the back-button. After registration is complete and validated the client goes to the menu screen. In the database it should be validated that the username is unique.



2. Menu screen

This is the landing page after the splash screen unless a game notification has been received in which case the main screen (see below) is loaded instead. To show who is logged in you see a message 'Welcome, #Playername" and the profile picture.

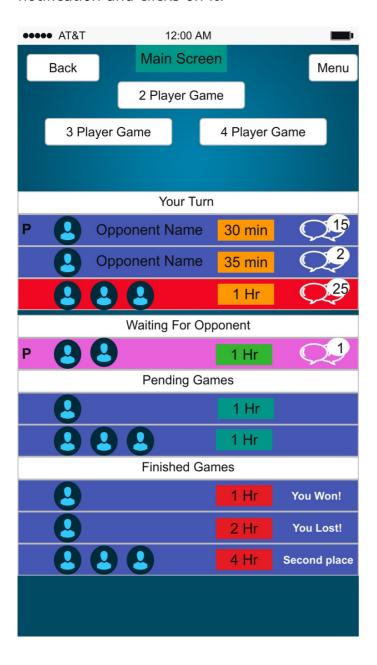


As designed 1/8/17 it shows 7 menu items:

- -Play (this loads Main Screen)
- -Settings (loads settings menu)
- -Statistics (loads personal statistics screen)
- -Invite Players (loads Invite Players screen)
- -Rules and Help Screen
- -Feedback Screen
- -Buy SmartFeud (leads directly to playstore or app store to buy full version)

3. Main screen

If someone has an existing account this is the first screen shown when logging on. It shows current games (sections "start new game", "your turn", "waiting for opponent") and pending games (a invitation has been sent but has not been accepted yet). This is also the screen that should open after a player receives a notification and clicks on it.



Taking the current (1/8/2017) design as starting point the following modifications are required:

- The screen should have 4 sections: "your turn", "waiting for opponent", "pending games", and "finished games"
- The maximum number of concurrent games should be set to 30, excluding

finished games.

- In the "your turn" and "waiting for opponent" sections the current games are listed. In order to facilitate multi-player each game cannot just show the name of "Opponent" in the rectangular boxes. If there are multiple opponents (opponents 1, 2 and 3) in one game then all players should be included in these boxes. The way to implement this is by displaying the profile icon circles of all the players participating in a game (up to 3 players).
- 3- and 4-player games should be displayed in a different colored bar, pink for 3-player games, red for 4-player games. This to make a clear difference.
- Within the "Your Turn" section, the rectangular boxes for each game the following should be displayed in this order: profile icons, time in hours since move of last player, chat icon with number of unread chats.
- The games should be sorted by the number of hours expired after the last move. With the game with the least hours expired on top.
- When a player taps on the chat-symbol the chat of that game will be opened. If there are multiple players this will be a multiplayer chat.
- Within the "Waiting for opponent" section, the rectangular boxes for each game the following should be displayed in this order: profile icons, time in hours since last move, chat icon with number of unread chats.
- The games should be sorted by the number of hours expired after the last move. With the game with the least hours expired on top.
- Below the "Start New Game"-button there should be two buttons to start a 3-player or 4-player game. Selecting the first one will select a game with two players, the second one a game with three players, and the third one a game with four players. Selecting any of these will lead to the "New Game with Friends" screen.
- A small square box should be shown showing the expired time since the last move was made.
- If a game is being played in Professional-mode a P should be shown in front of the player-icon. If a player taps on the P a pop-up appears: This game is in professional mode. Ifa word is being played that is not in our dictionary you lose your turn!
- The top of the screen should have these icons:
 - -Personal statistics
 - -Invite Players
 - -Menu icon

The menu icon should go back to the menu.

• In WF Facebook, Twitter and RSS icons are displayed at the bottom of the screen. In our case these can be omitted.

Pending games

Pending games are games for which invitations have been sent out but for which the required number of players has not yet accepted the invitation to play. Pending game invitations will expire after 48 hours.

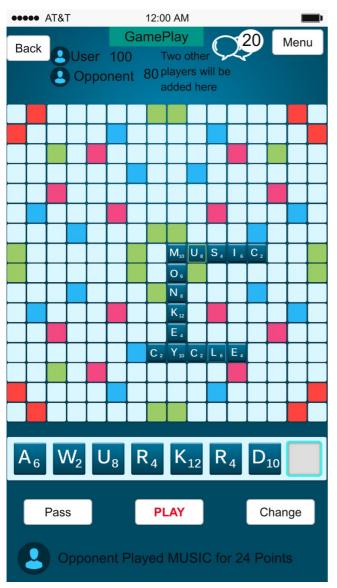
The layout will be the same as under "your turn". The icons of the first 3 people that were invited will be shown here. The number of hours displayed in this case refers to the number of hours after the invitation was sent.

Finished games

Games that were finished in the past 7 days will be displayed here. The layout will be the same as under "your turn" except that to the right of the players a message will be displayed "you won", "you ended 2nd", "you ended 3rd", or "you lost". In this case the box with number of hours will show the number of hours after the game ended. Clicking on a finished game will, as in WF, show the last position on board. The functionality in this screen will be the same as in WF.

4. Game play screen

This is the screen in which a game is played.



Taking the current design (1/8/2017) as starting point the following changes should still be made:

- Settings icon should be changed to a menu icon
- The dark blue border surrounding the letters should be removed
- After the removal of the blue border there should be no space on the right and left of the playing board, i.e. the letters should outline to the edges of the screen
- Pass button: has the functionality of the equivalently named button in WF. Player should be asked if he really likes to pass this turn.
- Change button: has the functionality of Swap button in WF
- WF's Shuffle button is omitted
- The user and opponent scores are shown at the top, but note that both words should be replaced by respectively the actual user name in question and the actual

opponents user name in question

- The SmartFeud logo should be removed if a 3- or 4-player game is played, here the scores of all players are shown.
- There should be up to four circles with the player's circles profile icons displayed at the top (dependent on the number of players in the game), next to each icon the score is displayed. The first icon is the icon of the user himself. The statuses of the players are indicated by the color surrounding the profile icon circle of the player in question (see section "status").
- At the bottom of the screen under the player's letter-row the following: text should be displayed "{username} played {WORD} for {99} points
- The first thing a player does during his turn is taking a tile from the board. The moment he has done this the 'pass' button should change in 'undo'. When pressed this button will replace the tile taken from the board back to it's original position. Also, if the player has placed tiles from his rack on the board these tiles will return to their original position when 'undo' is used.

Menu items Game Play Screen



In the Game screen there is a menu on the top right. Clicking this should open a pop-up on the screen with the following options:

- -Resign: this resigns the game. (Opponent should get a notification of the resignation). This will count as both a lost game and as a resigned game
- -Settings (This opens the main settings menu)
- -Rules and Help this opens the help-page

To exit this menu simply tap next to the menu.

After a game is finished, as in WF, these two additional menu items will appear:

- Share on FB this makes a screenshot of the board, and places this screenshot on the facebook-page of the player. The player can then add a comment before posting.
- Rematch. This automatically invites the same opponent(s), with the same game settings.

5. Change sub-screen

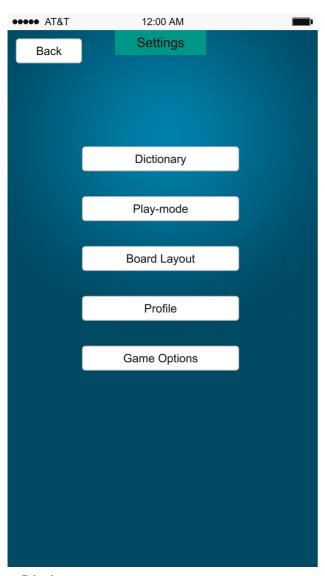
The 'Change'-function gives the user the possibility to swap some or all of their tiles. This ends their turn. Should function the same as the swap function in WF.

After swapping one or more tiles player should press 'okay'. This ends his turn. He can also press cancel, this will bring him back to the game.



6. Settings screen

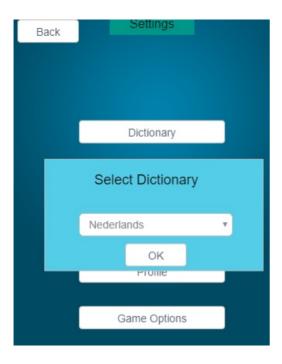
The settings screen here has five buttons:



- Dictionary
- Play-mode
- Board Layout
- Own Profile
- Game Options

Each of these buttons will access a subscreen with settings:

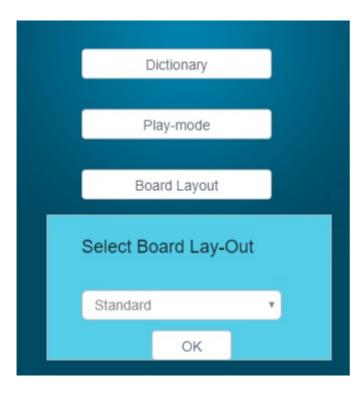
6a Dictionaryscreen: Default language for the dictionary to be used in games should be set here.



6b Play-mode screen: default play mode (normal or professional) can be specified. Note: Professional can only be selected by paid users.

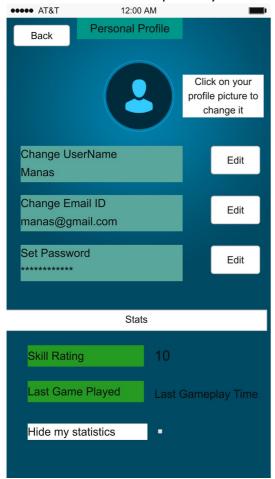


6c Board-layout screen: the default board layout will be specified here (standard or random)



6d Own Profile screen:

- profile picture can be changed by clicking on it
- change username
- change email address
- set password (the password should be reconfirmed)
- statistics available publicly.

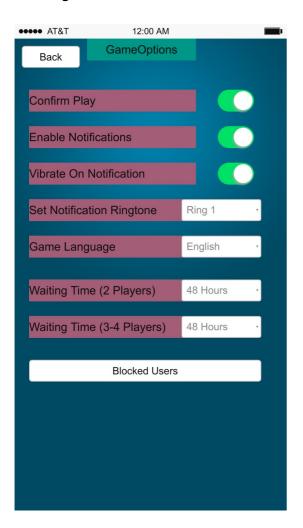


Note that the core statistics (# Skill rating ,# Last Game Played (date)) will be available to everyone irrespective of the setting.

If the 'Hide My Statistics' checkbox has been checked noone will be able to see all other statistics.

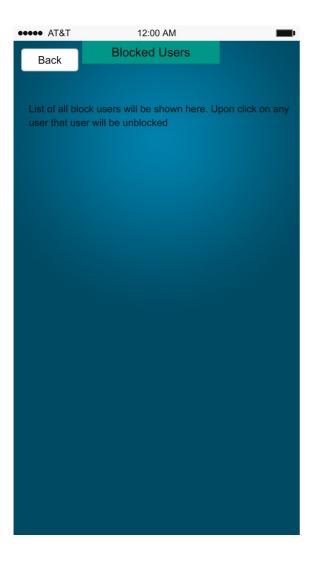
6e Game options

- confirm play (the games asks for confirmation before a turn is final)
- enable notifications (if turned off no confirmations will be sent to this player)
- vibrate on notifications
- set notification ringtone
- Game language. This is the place for players to change the language of the game interface trough a drop-down menu.
- default waiting time in between turns for 2 player games (maximum 48 hours), it will be possible to select from theses choices: 3, minutes, 5 minutes, 10, minutes, 30 minutes, 12 hour, 24 hours, 48 hours
- default waiting time in between turns for 3-4 player games (maximum 48 hours), it will be possible to select from theses choices: 3 minutes, 5 minutes, 10, minutes, 20 minutes, 12 hour, 24 hours, 48 hours
- Blocked users: a list with players is displayed here that the user has blocked. By clicking on a user he can be unblocked



6f Blocked users

A list of blocked users is shown. By holding a blocked user for two seconds he can be unblocked.



7. User Profile

The statistics of **other** SF-players (friends or not) will be displayed here (both in the free as well as in the paid version).

Statistics will be the same as those listed under the "Personal Statistics" menu. The following 2 statistics will always be displayed# Skill rating # Last Game Played (date). Below that these statistics should be shown: number of games won, drawn and lost

Then the other statistics (the same ones as listed for the menu "personal statistics") will be displayed in addition if someone has chosen in their settings menu to allow the statistic to be public.



Whenever someone clicks on a user profile icon he should get the user profile page.

Page is the same as in WF only statistics are different. The standard WF features in the User Profile screen should be available here as well: New Game, Block User, Add Friend.

8.Invite Players screen

This section is specifically designed to make it easy to invite friends to download and play SmartFeud.

There are four icons: the Facebook-logo, the Twitter-Logo, the Instagram-logo and an E-mail logo.



Facebook: opens up the Facebook app to place a standard message on the Facebook-page of the user. "I am playing SmartFeud, the best wordgame ever. Who dares to try me? It's free and it's fun!" including a picture of the logo and a link to the playstore and appstore.

Twitter: opens up the Twitter-app on the users device, and places a standard message on the Twitter-account.

Instagram: opens the Instagram-account, and places a picture of the SmartFeud logo including link to the appstore.

E-mail: opens the user's phone contacts and after selecting a contact the phone's e-mail client is selected to to send the same standard message including a link to the playstore/appstore.

- Standard messages are dependent of the language the user has set as his user interface language. If a user has his game set in Dutch all outgoing messages should be in Dutch as well.

9a. Start New Game screen (2-player)

This screen only shows friends, ie SF friends, Facebook Friends (with SF installed) or Instagram Friends (with SF installed). The top right of the screen with have **three icons**:

- 1. a Filter icon (for filtering) and
- 2. a Settings icon (for game specific settings).
- 3. a Magnifying Glass icon (for searching),

Two filters can be set at the top of the "Start New Game" screen: one for minimum Skill Rating (in the proposed language of the game as per the selected dictionary) and the other maximum default waiting time for 2 player games. The filters can be left blanc in which case all users are displayed or they can be filled out in which only the users that meet the criteria will be displayed.

Both these filters will be accessible through a "filters" icon in the top right of the screen. Once the filters have been set they stay active. When filters are active this is displayed by making the filter-icon green instead of white.

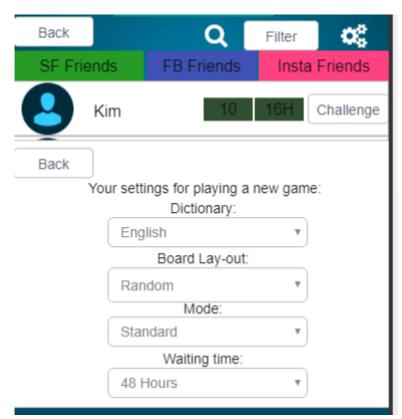
Filters apply when searching friends or random players in the Start New Game screen and when searching using sub-screen 13 "Search".



The icon for game specific settings at the top of the screen allows to make settings

specific for a new game:

- 1. the Dictionary for the game,
- 2. the Board (standard or random),
- 3. whether to play the game in professional or normal mode. Note that professional mode games can only be initiated by paid players.
- 4. Waiting time



The default game specific settings will be determined by the values in the main settings menu.

The SF friends with whom the player has played the most recent games should come on top of the list of friends. Using as a starting point the screen as was designed already but with three tabs "SF Friend", "FB Friend", "Instagram Friend" (there will not be a "all players" tab).

When a tab is selected the list will span the entire width of the screen. Selecting the SF Friend tab will display all players previously added as SF friends, the FB Friend tab will display all FB friends with SF already installed, and the Instagram tab will display all Instagram friends already with SF already installed.

Friends are displayed on rows. A row will display the following information on a player: Skill Rating, Last Game Played. There will be a button: "Challenge" behind it to invite someone to play a game.

After clicking this button the player that is challenged will receive a notification to say that he has been invited for a 2 player game, with Dictionary X, and Board layout X, with user with a maximum waiting time of x hours, and professional/standard game. He can accept or reject the invitation.

After challenging someone the Challenge button will turn green. Game invitations expire after 48 hours.

People can only send maximum 3 invitations to the same player.

Every player that has accepted an invitation to play will automatically become a SmartFeud-friend. Note that the same person can appear in all three lists simultaneously.

On the top right there is an icon of a Magnifying Glass. This opens up a sub-screen (13 "Search") with the search-function (accessible through the Magnifying Glass icon) to find players (irrespective of whether they are friends or not). Searching for parts of usernames or email addresses should bring up all the usernames/ email addresses which match.

On the bottom of the screen the user can select to play against a random opponent. After he clicks this the first available other random player with the same preferred settings will be matched to him.

There should be a pop-up after clicking the random-button: "- We are looking for a random opponent. This might take some time, would you like to invite some of your friends?" There will be two options: 'No' and 'Great Idea!' If a player clicks on 'no' the pop-up closes and nothing happens.

If the player decides to click on 'Great Idea!' it will open the invite friends screen.

In the Start New Game and Search Screens:

- It should also be possible to Block Users, Remove Friends (ie SF-Friends), and Add Friends (ie SF Friends)
- -Block Users should be available for SF Friends, FB Friends, Insta Friends as well as random opponents and other SF players who are not friends (which can be found through the Search Screen-9b).
- Blocking users will result in them not showing up in search results any longer and them not showing up in the list of SF Friends, FB Friends or Insta Friends any longer.-Remove Friends (ie SF Friends) should be available for SF Friends. Removing Friends will result in them not been shown as SF Friends in the list any longer. As soon as you play a game with a removed friend they will re-appear automatically.
- -Add Friends should be available for FB Friends, Insta Friends as well as random opponents and other SF players who are not friends

Holding down the user name 2 seconds should result in the Add Friends/Remove Friends/Block Users options (subscreen 9(c)), tapping on it(and releasing) should bring up the user profile.

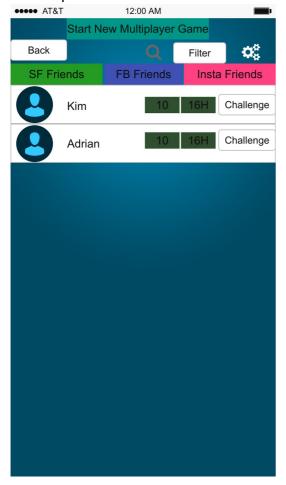
Screen 9(b) Start new game (3- or 4-player)

This screen is almost the same as that for the 2 player game but there are a few differences: only play with friends (SF, FB, Insta) is possible (ie not random opponents), it is not possible to search for users by email or user name (hence the magnifying glass is greyed out). Also the game invitation logic works a bit differently.

This screen is accessed when selecting a 3- or 4-player "New Game" from the Main Screen.

The default waiting time will be taken from the settings. The screen only shows friends, ie SF friends, Facebook Friends (with SF installed) or Instagram Friends (with SF installed). The Filter icon and the Game Settings icons from screen 9 - Start New Game (2 players) will be the same. The Magnifying Glass icon will be greyed out in this screen.

Note that it is only possible to invite friends for 3- or 4- player games (hence there is no option here to select a random opponent or by email address or username).



The SF friends with whom the player has played the most recent games should come on top of the list. Using as a starting point the Screen as was designed already but with three tabs "SF Friend", "FB Friend", "Instagram Friend"

Friends are displayed on rows. A row will display the following information on a player: Skill Rating (in the language of his default dictionary), Last Game Played. After the required number of players has been invited to a game and has accepted participation in the game the game will proceed. A player that is challenged will receive a notification.

The notification should say that he has been invited for a 3/4 player game, with Dictionary X, and Board Layout X, with user with a maximum waiting time of x hours. He can accept or reject the invitation. After someone has been challenged the button will turn green. Once all the players haveaccepted the invitation the game will start and select a random player who has to place his first word on the board. Game invitations expire after 48 hours.

People can only send maximum 3 invitations to the same player. Every player that has accepted an invitation to play will automatically become a SmartFeud-friend. Note that the same person can appear in all three lists simultaneously.

10. Personal statistics

The user's own statistics. In WF it is called "Player statistics" the set is mostly the same and in WF it is dependent on board and language. InSF the statistics will only be dependent on language - ie for each language someone plays he has set of statistics.



This is the list:

- # Skill rating *
- # Last Game Played
- # Won games

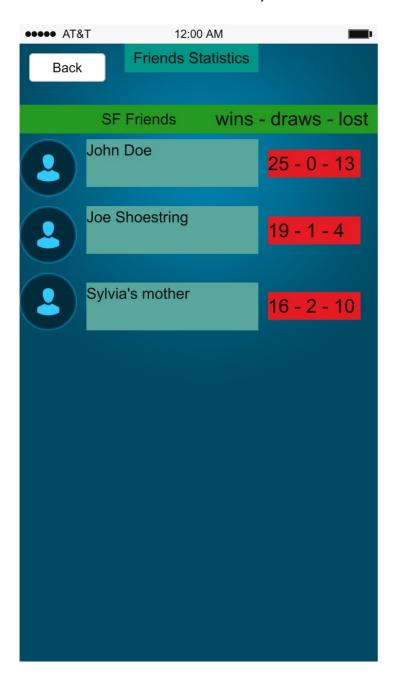
- # Lost games
- # Draws
- # Resigned games
- # Games timed out
- # Highest game score
- # Highest move score
- # Highest scoring word
- # Longest word
- # Average game score
- # Average move score
- # Most bonuses in one game
- # Average game length in hours
- * The algorithm used to calculate Skill Rating will be the elo-rating: https://metinmediamath.wordpress.com/2013/11/27/how-to-calculate-the-elo-rating-including-example/

It must be able to display the statistics in relation to each language but also the overall statistics (as in WF). This should be done by creating a drop-down menu.

At the bottom of the screen as in WF you will see Friend Statistics, when you click on the friend in question you will go to the Friend Statistics screen (10a)

10a Friends statistics screen

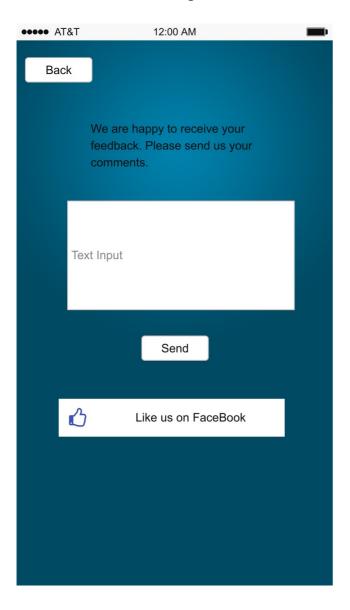
For each friend you will see here the number of games won, drawn and lost. If you click on the friend this will lead you to his User Profile screen



11. FeedbackScreen

Feedback should show a message: We are happy to receive your feedback. Please send us your comments.

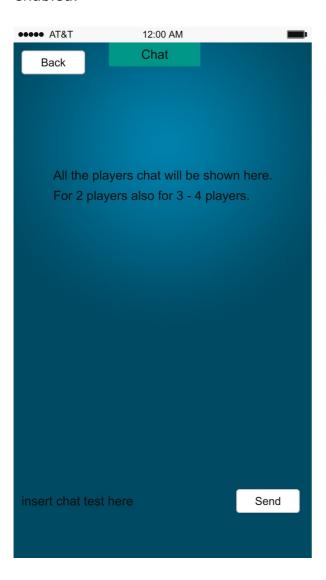
There is a Text-box to write commentary. This should be automatically forwarded to feedback@smartfeud.com, with as sender the e-mailadres the player uses. The sender himself should get a cc.



On top of that there should be an option to like the Smartfeud Facebook-page.

12. Chat screen

As designed already (as per 1/8/2017). Note that as in WF emojis should be enabled.



13. Rules and help-screen

This screen should link to a page on the smart feud website where the rules are displayed. Depending on the app-language setting it should go to a subdomain in that specific language (ie: www.smartfeud.com/rules/nl for Dutch).

Notifications

A player should get a notification on his phone/tablet in these cases:

- 1. If he is invited to play a new game
- 2. If an opponent has made a move and it's his turn
- 3. If an invitation has been accepted and it's his move
- 4. If a game has been resigned
- 5. If a game has ended
- 6. If he's got less then one hour to make his move (not for games with a play-time of two hours or less)
- 7. If a chatmessage has been received
 After he has used the game for a few times (and not given a rating yet) he gets a
 pop-up when he starts up the game that invites him to give a rating in the google
 play store or app store (same as in WF).

Error Messages

In different situations errors can occur and corresponding error-messages should be displayed. For example if there is no active Internet-connection. All error messages should be displayed in the preferred game-language, so should come from the database to make them easy to translate.

Database

MongoDB

Development platform

Unity

Game App Icon

Should be designed.

Paid version

As in WF the paid version should be ad-free. On top of that, the paid version makes it possible to initiate play in pro-mode, which means that playing a word that is not in the dictionary will make you lose your turn. Note that only paid players can initiate a pro-mode game, but they can play this pro-mode game even with players using the free app.

Logon

It should be possible to create a SF account in a single screen using either Facebook's login flow, Instagram's login flow, or email registration.

Playing field

Is 16x16 instead of 15x15.

Game play rules

Each players gets 7 random tiles, and one 'blank' space where he can put the tile he took from the board. The starting player gets a 'blank' tile to use as any letter he wishes, so he can possibly form an 8-letter word.

The starting player combines two or more of his or her letters to form a word and places it on the board to read either across or down with one letter on the center square. Diagonal words are not allowed.

The second player, and then each in turn, decides whether or not he takes a tile from the board. If he does, he swipes this tile to the blanc space available for this purpose. After that, he adds one or more letters to those already played to form new words.

The tile taken from the board MUST be used this turn.

All tiles played on a turn must be placed in one row across or down the board, to form at least one complete word. If, at the same time, they touch others letters in adjacent rows, those must also form complete words, crossword fashion, with all such letters. The player gets full credit for all words formed or modified on his or her turn.

New words may be formed by:

- Adding one or more letters to a word or letters already on the board.
- Placing a word at right angles to a word already on the board. The new word

must use one of the letters already on the board or must add a letter to it.

- Placing a complete word parallel to a word already played so that adjacent letters also form complete words.
- Splitting a word by taking out one of the letters. (eg: by taking the 'i' out of the word 'section' two new words are formed, 'sect' and 'on'. Both words score points)

You may use a turn to exchange all, some, or none of the letters. This ends your turn.

Using all 7 letters available gives a premium of 30 points.

Using all 7 letters plus a tile that's been taken from the board gives a premium of 50 points.

Letter and word premiums (the colored squares) count only on the turn in which they are played. On later turns, letters already played on premium squares count at face value.

If one player removes a tile from a colored square this becomes active again.

All words on the board should be in the dictionary.

It is not allowed for a player to ONLY use the tile he took from the board.

Every newly formed word on the board scores points.

In multi-player games, when a player resigns, the remaining players get an option to play on or to quit - provided everybody else quits as well (i.e conditionally quit). If everybody chooses to conditionally quit the game ends and the winner will be the player with the highest score at that point. Note that if a game is prematurely ended in this way it will not count as a resigned game in someones statistics.

The game ends when one of the players is out of letters and there are no new letters to replenish.

The letter distribution and values are as follows: US English & International English (Letter, Letter Value, Quantity): Blank 0 2 A 1 10B 3 2 C 3 3D 2 5 E 1 13F 4 2 G 2 3H 4 2 I 1 10J 8 1 K 5 1L 1 5 M 3 3N 1 7 O 1 8P 3 3Q 10 1R 1 7 S 1 5T 1 6 U 1 5V 4 2 W 4 2X 8 2 Y 4 2Z 10 1 Total 113 tiles

Dutch (Letter, Letter Value, Quantity): Blank 0 2A 1 8 B 3 2C 5 2 D 2 6E 1 18 F 4 2G 3 4 H 4 2I 1 6J 4 3K 3 4 L 3 4M 3 4 N 1 10O 1 7 P 3 3Q 10 1 R 2 6S 2 6 T 2 6U 4 4 V 4 2W 5 2 X 8 1Y 8 1 Z 10 1Total 117 tiles

Advertising

We must be able place advertisements manually or have them placed automatically by Google's Admob platform. As in WF two types of ads must be accommodated: static ads (at the bottom of the mobile version or on the left in the ipad version) and video ads. Video ads will be full screen and delivered at a certain frequency and length. The frequency and length at which ads are displayed must be configurable.

Languages

The user interface and dictionary of SF should be launched in US English, International English and Dutch. It should be easy for us to add new languages later on ourselves. Irrespective of the geographic location or language of the appstore/ google play store it should be possible for the users to select a user interface language. Initially the user interface should be available in US English, International English and Dutch. The user interface language is either selected in the menu.

Irrespective of the user interface language a player should be able to choose the language for a game ("dictionary language"). The dictionaries should be stored on our server and downloaded from the official language databases available online. We will provide the correct dictionaries.

Initially dictionaries should be available in US English, International English and Dutch.