

EPIC is too big to be completed in a single iteration, so it's split into smaller ones

As a player I want to be able to play a cryptogram (EPIC)

1. As a player I want to be able to **generate** a cryptogram so I can play it
2. As a player I want to be able to **enter** a letter so I can solve the cryptogram
3. As a player I want to be able to **undo** a letter so I can play the cryptogram
4. As a player I want to be able to **save** a cryptogram so I can play it at another time
5. As a player I want to be able to **load** a cryptogram so I can continue a game I was previously playing
6. As a player I want to be able to **show the solution** so I can see the answer to a cryptogram I can't solve
7. As a player I want to be able to **see the frequencies** of all the letters in the cryptogram so I can compare this with the frequencies of English letters
8. As a player I want to **store my player name** so the software can track my game play statistics
9. As a player I want the software to **track the number of cryptograms I have successfully completed**
10. As a player I want the software to **track the number of cryptograms I have played** so I can see how many games I've attempted
11. As a player I want the software to **track the number of correct guesses** I have made so I can see how accurate I am as a percentage of my total number of guesses
12. As a player I want to **load my details** so I can track my game play statistics
13. As a player I want to be able to **see the top 10 scores** for number of successfully completed cryptograms
14. As a player I want to be able to **get a hint for a letter**, so I can solve the cryptogram

Acceptance Criteria

1. As a player I want to be able to **generate** a cryptogram so I can play it
 - Scenario: Player requests letters cryptogram
 - Given there are phrases stored
 - When the player requests a cryptogram
 - Then cryptogram based on a phrase where each plain letter from the phrase is mapped to a single cryptogram letter value
 - Scenario: Player requests numbers cryptogram
 - Given there are phrases stored
 - When the player requests a cryptogram
 - Then cryptogram based on a phrase where each plain letter from the phrase is mapped to a single cryptogram number from 1-26
 - Scenario: Player requests a cryptogram but no phrases file exists
 - Given there are no phrases stored

- When the player requests a cryptogram
- Then an error message is shown and the game exits
- 2. As a player I want to be able to **enter** a letter so I can solve the cryptogram
 - Scenario: player enters a letter
 - Given a cryptogram has been generated and is being played
 - When the player identifies a value to replace with a letter
 - Then the letter is mapped to that value and is filled in for all instances in the cryptogram, the player's statistics (numGuesses, numCorrectGuesses) are updated
 - Scenario: player selects a cryptogram value which has already been mapped
 - Given a cryptogram has been generated and is being played
 - When the player selects a cryptogram value which they have already mapped
 - Then the player is asked if they want to overwrite the mapping, if they do it's overwritten and stats updated, if not the original mapping remains
 - Scenario: player selects a plain letter which they have already mapped
 - Given a cryptogram has been generated and is being played
 - When the player selects a cryptogram value to map to a plain letter they have already used
 - Then an error message is shown to the player and they are asked to try again
 - Scenario: player enters the last value to be mapped and successfully completes the cryptogram
 - Given a cryptogram has been generated and is being played
 - When the player enters the last value to be mapped and their mapping is correct
 - Then a success message is displayed, their stats are updated and the game is finished
 - Scenario: player enters the last value to be mapped and unsuccessfully completes the cryptogram
 - Given a cryptogram has been generated and is being played
 - When the player enters the last value to be mapped and their mapping is incorrect
 - Then a fail message is displayed, the player stats are updated, and the game continues
 - Scenario: player enters a cryptogram value which is not used in the cryptogram
 - Given a cryptogram has been generated and is being played
 - When the player enters a cryptogram value to map which is not used in the cryptogram
 - Then an error message is shown to the user
- 3. As a player I want to be able to **undo** a letter so I can play the cryptogram
 - Scenario: player wants to undo a mapped letter
 - Given a cryptogram has been generated and is being played
 - When a player selects a letter to remove from their mapping
 - Then the letter is removed from the player mapping
 - Scenario: player selects a letter in the cryptogram which they have not mapped
 - Given a cryptogram has been generated and is being played

- When a player identifies a letter which has not been mapped to remove the mapping
 - Then an error message is displayed to the player indicating the letter has not been mapped
4. As a player I want to be able to **save** a cryptogram so I can play it at another time
- Scenario: player saves cryptogram
 - Given a player has generated a cryptogram and is currently playing it
 - When the player indicates they wish to save
 - Then the cryptogram and state of play should be saved to a file for that player
 - Scenario: player already has a saved cryptogram
 - Given a player has a saved cryptogram already, and are currently playing a generated cryptogram
 - When the player indicates they wish to save
 - Then they are asked if they want to overwrite the save file, if so it's overwritten if not the original saved game is kept.
5. As a player I want to be able to **load** a cryptogram so I can continue a game I was previously playing
- Scenario: player loads their saved cryptogram game
 - Given a player has stored a saved cryptogram game
 - When the player asks to load the saved game
 - Then the game is loaded ready to resume play
 - Scenario: player has no previously saved cryptogram game
 - Given a player has no previous saved cryptogram game
 - When the player asks to load a saved game
 - Then an error message is shown
 - Scenario: error loading previously saved game (corrupt file)
 - Given a player has stored a saved cryptogram game but the file has been corrupted
 - When the player asks to load the game
 - Then an error message is shown
6. As a player I want to be able to **show the solution** so I can see the answer to a cryptogram I can't solve
- Scenario: player shows the solution
 - Given a cryptogram is being played and hasn't been completed by the player
 - When the player selects to show the solution
 - Then the correct mapping is applied and the solution displayed to the player
7. As a player I want to be able to **see the frequencies** of all the letters in the cryptogram so I can compare this with the frequencies of English letters
- Scenario player views the frequencies of letters in the cryptogram
 - Given a cryptogram is being played
 - When the player asks to view the frequencies
 - Then the proportion of letter frequencies in the cryptogram is shown as well as the common proportions of letter frequencies in the English language
8. As a player I want to **store my details** so I can track my game play statistics
- Scenario
 - Given a player has been created

- When the player asks to exit the game
 - Then their details are saved to a file
- 9. As a player I want the software to **track the number of cryptograms I have successfully completed**
 - Scenario – cryptogram successfully completed
 - Given a cryptogram is being played
 - When the player enters the last letter which results in the complete correct mapping
 - Then the number of cryptograms successfully completed is incremented and a success message is presented to the player
 - Scenario – cryptogram unsuccessfully completed
 - Given a cryptogram is being played
 - When the player enters the last letter which results in an incorrect mapping
 - Then a message is shown to the player indicating they are incorrect, and the game play is resumed
- 10. As a player I want the software to **track the number of cryptograms I have played** so I can see how many games I've attempted
 - Scenario – new cryptogram played
 - Given the player has opened the program
 - When the requests a new cryptogram
 - Then the number of cryptograms played is increased by one
 - Scenario – cryptogram loaded
 - Given the player has opened the program
 - When they request to load their saved game
 - Then the game is loaded and no change is made to the cryptograms played
- 11. As a player I want the software to **track the number of correct guesses** I have made so I can see how accurate I am as a percentage of my total number of guesses
 - Scenario- correct guess made
 - Given a letter has been entered
 - When the guess is correct
 - Then the number of correct guesses and the number of guesses are increased by one
 - Scenario – incorrect guess made
 - Given a letter has been entered
 - When the guess is incorrect
 - Then the number of guesses is increased by one
- 12. As a player I want to **load my details** so I can track my game play statistics
 - Scenario – player details loaded
 - Given a player has previously played at least one cryptogram game
 - When the player identifies themselves
 - Then the player's details are loaded
 - Scenario- error loading player details
 - Given a player has previously played at least one cryptogram game
 - When a player identifies themselves and there is a problem with their detail file
 - Then an error message is shown
 - Scenario – error loading player, they don't exist

- Given a player tries to load details
 - When the player details have not been stored
 - Then show an error message to the player and create a new player
- 13. As a player I want to be able **to see the top 10 players** for proportion of successfully completed cryptograms
 - Scenario: player wants to see the top 10 players ordered by proportion of successfully completed cryptograms
 - Given at least one player has successfully completed a cryptogram
 - When a player selects to see the top 10 players by number of successfully completed cryptograms
 - Then the top 10 players are shown, ordered by highest proportion of successfully completed cryptograms to least, with blank spaces where there is no player to fill that position
 - Scenario: no player stats have been stored
 - Given no player stats have been stored
 - When the player selects to see the top 10 players
 - Then an error message is shown
- 14. As a player I want to be able **to get a hint for a letter**, so I can solve the cryptogram
 - Scenario
 - Given a cryptogram is being played and there are still cryptogram values to be mapped
 - When a player asks for a hint
 - Then the letter for which the corresponding cryptogram value which has not been mapped is added to the mapping and displayed to the user
 - Scenario: the letter identified has already been mapped by the user
 - Given a cryptogram is being played, there are still cryptogram values to be mapped and the player has asked for a hint
 - When the hint identifies a letter which the user has already used
 - Then the player mapping is removed and the correct mapping is entered and a message displayed to the player

Non-functional Requirements

Cryptograms and their state of play should be saved to a text file, only one per player.

Player statistics and information should be saved to a text file.

Frequencies should be calculated as a proportion of the cryptogram.

There should only be letters and spaces in the phrase

Scoreboards should show the top 10 players

There should be around 15 phrases in the phrases text file

Phrases should be around 30-40 characters in length