

# Product Backlog

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## Problem Statement

Pandemic is a popular board game, released in 2007; while enjoyable, it has remained largely unchanged since its release, and as a result of this, it has lost some of its popularity. Recently, however, board games, Pandemic included, have experienced a resurgence in popularity. For this reason, we plan to create a modernized, more contemporary version of this classic board game that we believe will be even more entertaining.

## Background Information

With board games on the rise, players are looking for modernized ways to play their favorite games. Pandemic has lost some popularity over time, partially because there is no desktop version of the game. Additionally, a single game of Pandemic can take up to an hour, which can be difficult to fit into people's' busy schedules. Memedemic will be a shorter, simpler version of the Pandemic board game with a theme that relates to today's world. It will be playable through one's computer, allowing players to quickly and easily play the game.

## Environment

We will be using C++ to create Memedemic. As it is a game, we will be receiving a significant amount of user input in our functionality. We have chosen to pursue a command-line style user interface for the time being, written by ourselves. We may choose to create an optional Graphical User Interface in the future, but we will be sticking to plain C++ for the time being. No outside libraries or frameworks should be necessary.

## Functional Requirements

Backlog ID	Functional Requirement	Hours	Status
1	As a user, I'd like to be able to access adjacent websites.	12	Completed in Sprint 1
2	As a user, I'd like to be able to access a website on a held card.	8	Completed in Sprint 2
3	As a user, I'd like to be able to access any website given that I have the site card for my current location.	6	Completed in Sprint 2

4	As a user, I'd like to be able to access one CMC server from another.	6	Completed in Sprint 2
5	As a user, I'd like to be able to build a CMC server if I'm holding the site card of my current location.	4	Completed in Sprint 2
6	As a user, I'd like to be able to ban a meme in the website I'm in.	12	Completed in Sprint 1
7	As a user, I'd like to be able to share website cards.	7	Completed in Sprint 2
8	As a user, I'd like to be able to develop a meme filter if I have 5 site cards.	20	Completed in Sprint 2
9	As a user, I'd like to be able to play the event card "Serious Discussion".	10	
10	As a user, I'd like to be able to play the event card "Power Outage".	6	
11	As a user, I'd like to be able to play the event card "Meme Forecast".	8	
12	As a user, I'd like to be able to play the event card "VPN".	4	
13	As a user, I'd like to be able to play the event card "Government Grant".	4	
14	As a user, I would like to be able to see the outbreak track.	6	Completed in Sprint 1
15	As a user, I would like to be able to see the viral quotient.	6	Completed in Sprint 1
16	As a user, I would like to be able to see the meme status.	6	Completed in Sprint 1
17	As a user, I would like to be able to see the player roles.	6	Completed in Sprint 1
18	As a user, I would like to be able to see my held cards.	12	Completed in Sprint 2
19	As a user, I would like to be able to see the number of cubes in each website.	6	Completed in Sprint 1
20	As a user, I would like to be able to see the connections between websites.	6	Completed in Sprint 1
21	As a user, I would like to be able to see the location of CMC servers.	3	Completed in Sprint 2

22	As a user, I would like to be able to see where players are on the board.	4	Completed in Sprint 1
23	As a user, I would like to be able to win the game.	20	Completed in Sprint 2
24	As a user, I would like to be able to lose the game.	20	Completed in Sprint 2
25	As a user, I would like to be able to draw cards.	12	Completed in Sprint 2
26	As a user, I would like to be able to see other players' cards.	6	Completed in Sprint 2
27	As a user, I would like to be able to see the updated board after each user's turn.	15	Completed in Sprint 1
28	As a user, I would like to autosave the game state after every player's turn.	15	Completed in Sprint 2
29	As a user, I'd like to be able to start a new game while in an active game.	2	Completed in Sprint 2
30	As a user, I'd like to be able to start a new game from the main menu.	8	Completed in Sprint 2
31	As a user, I would like the game to be set up correctly.	24	Completed in Sprint 1
32	As a user, I would like for the infection phase of player turns to execute correctly.	10	Completed in Sprint 2
33	As a user, I would like the meme epidemic cards to function as intended.	6	Completed in Sprint 2
34	As a user, I would like my role to function properly.	24	Completed in Sprint 2
35	As a user, I would like to take the correct number of actions each turn.	6	Completed in Sprint 1
36	As a user, I would like for the meme outbreak event to occur correctly.	8	Completed in Sprint 2

## Non-Functional Requirements

Appropriate non-functional requirements that are related to your project. These may include security, scalability, reliability, easy recovery, etc.

Backlog ID	Non-Functional Requirement	Hours	Status
1	The program will run on Windows.	~	Completed in Sprint 1
2	The code is written for easy support of possible future expansions.	~	Completed in Sprint 2
3	The program is written so that it would be easy to port to other platforms.	~	Completed in Sprint 2
4	As a developer, I would like to include a “developer mode” to allow the game to be placed in a specific state for testing purposes.	20	
5	Memedemic will support up to four players	~	Completed in Sprint 1
6.	Code is well documented.	~	Completed in Sprint 2

## Use Cases

### Case 1: Access adjacent website

#### Action

1. Type ‘access <website>’

#### System Response

2. Player pawn is moved to target website.
3. Game updates the map.
4. Actions remaining decreases by 1

### Case 2: Move to website on held card

#### Action

1. Type ‘cards’ to view cards.
3. Type ‘access <website>’

#### System Response

2. Player’s held cards are displayed.
4. Card is discarded from hand
5. Player piece is moved to desired website.
6. Actions remaining decreases by 1

### **Case 3: Access any website, given player holds site card of current/destination location**

#### **Action**

1. Type 'cards' to view cards.
3. Type 'access <website> '

#### **System Response**

2. Player's held cards are displayed.
4. If player does not hold one of { current website, destination website }, An error dialog appears.
5. Otherwise, the card is discarded
6. Player pawn is moved to target website.
7. Game updates the map.
8. Actions remaining decreases by 1

### **Case 4: Access CMC server from CMC server**

#### **Action**

1. Type 'access <website>'

#### **System Response**

2. Game checks that the current player is in a website with a built CMC server and target website also has a built CMC server; if not, then an error dialog appears.
3. Player pawn is moved to target website.
4. Game updates the map.
5. Actions remaining decreases by 1

### **Case 5: Build CMC server if site card of current location is held**

#### **Action**

1. Type 'build'.

#### **System Response**

2. Game checks for held current location card; if not, error displayed
3. CMC server is built in current website.
4. Game updates the map.
5. Actions remaining decreases by 1

### **Case 6: Ban meme in player's current website**

#### **Action**

1. Type 'ban <meme number>'  
(starts at 1)

#### **System Response**

2. Game checks that there is a meme cube for that meme in the website; if not, then an error dialog appears.
3. One meme cube is removed from the player's current website.
4. Game updates the map.
5. Actions remaining decreases by 1

### **Case 7: Share**

#### **Action**

1. Type 'give/take <card #> <player #>' (both start at 1)

#### **System Response**

2. Game checks that the sharee is in the same website as the sharer; if not, then an error dialog appears.
3. Game checks that the card being given/taken is the current location
4. Game gives/takes the website card to/from the player.
5. Actions remaining decreases by 1

### **Case 8: Develop meme filter**

#### **Action**

1. Type 'develop filter <card#> <card#> <card#> <card#> <card#>'. (start at 1)

#### **System Response**

2. Game checks that the player is at a website with a CMC server
3. Game checks that the player holds the correct requirement for cards.
4. Game moves meme marker to the share indicator.
5. Game checks if the meme has been eradicated.
6. Game updates the map.
7. Actions remaining decreases by 1

### **Case 9: Event card "Serious Discussion"**

#### **Action**

1. Type 'event serious discussion'
3. Type '<website card>'

#### **System Response**

2. Game checks that the player is holding the card; if not, then an error dialog appears.
4. Game removes the discarded infection card from the game.

### **Case 10: Event card "Power Outage"**

#### **Action**

1. Type 'event power outage'

#### **System Response**

2. Game checks that the player is holding the card; if not, then an error dialog appears.
3. Game skips the infection state of current user's turn.

### **Case 11: Event card “Meme Forecast”**

#### **Action**

1. Type ‘event meme forecast’
4. Type new order for the six cards  
‘<card#> <card#> <card#> <card#> <card#>  
<card#>’

### **Case 12: Event card “VPN”**

#### **Action**

1. Type ‘event vpn’
3. Type ‘<name>(or <number>) <location>’

### **Case 13: Event card “Government Grant”**

#### **Action**

1. Type ‘event government grant’

### **Case 14: See outbreak track**

#### **Action**

### **Case 15: See viral quotient**

#### **Action**

#### **System Response**

2. Game checks that the player is holding the card, if not then an error dialog appears.
3. Game displays the top six cards of the infection deck.
5. Game rearranges the order per user input.

#### **System Response**

2. Game checks that the player is holding the card, if not then an error dialog appears.
4. Game checks that the player is not already at website.
5. Game moves the player to the website.
6. Game updates the map.

#### **System Response**

2. Game checks that the card, if not then an error dialog appears.
3. Game checks that there is not already a server built, if there is then an error dialog appears.
3. Game builds a server at the player’s current website.
4. Game updates the map.

#### **System Response**

1. Outbreak track is always displayed on the board

#### **System Response**

1. Viral quotient is always displayed on the board.

**Case 16: See meme status**

**Action**

**System Response**

1. Meme status is always displayed on the board.

**Case 17: See player roles**

**Action**

**System Response**

1. Each player's role is displayed during their turn.

**Case 18: See held cards**

**Action**

1. Type 'cards'

**System Response**

2. Cards currently in player's hand are displayed.

**Case 19: See number of cubes in each website**

**Action**

**System Response**

1. Number of cubes is always displayed next to each website name on the board

**Case 20: See connections between websites**

**Action**

**System Response**

1. Lines between websites are always visible on the board, representing connections.

**Case 21: See locations of CMC servers**

**Action**

**System Response**

1. CMC server icons are always displayed next to each website name.

**Case 22: See locations of players**

**Action**

**System Response**

1. Player locations are always displayed next to each website name, player locations printed.



**Case 23: Win game****Action**

1. Game reaches a state where all cures have been found

**System Response**

2. Displays “Victory” dialog to all players.

**Case 24: Lose game****Action**

1. Game reaches a state where no more player cards can be drawn, OR
2. Game reaches a state where the outbreak marker reaches rank 8, OR
3. Game reaches a state where the number of cubes remaining for a specific meme is 0 (max 18)

**System Response**

4. Displays “Game Over” dialog to all meme players.

**Case 25: Draw cards****Action**

1. Type ‘draw cards’

**System Response**

2. If player’s hand contains more than 5 cards, the player will be forced to discard to make room for the two new cards
2. Two new cards are drawn for the player
3. Player’s cards are updated to display new cards.

**Case 26: See other players’ cards****Action**

1. Type ‘cards <player #>’  
(starts at 1)

**System Response**

2. Desired player’s cards are displayed

**Case 27: See updated board after each turn****Action**

1. Type ‘end turn’

**System Response**

2. Game board is updated

**Case 28: Game autosaves after each turn****Action**

1. Type ‘end turn’

**System Response**

2. Game state is saved

### **Case 29: Starting a new game from a current game**

#### **Action**

1. Type 'new'

#### **System Response**

2. Game immediately ends and returns to Main Menu screen

### **Case 30: Setting up a new game from main menu**

#### **Action**

1. Type '1' for 'New'
3. Type a value between 1 and 4
5. Type names for each player
6. Type role choices for each player

#### **System Response**

2. Game prompts for number of players.
4. Game prompts user to input names for each player.
6. Game prompts roles for each player
7. New game is created.

### **Case 31: Game initialization**

#### **Action**

1. Setup new game

#### **System Response**

2. Distribute player roles
3. Place players on start (Email)
4. Shuffle decks
5. Deal cards (4 for 1-2 players, 3 for 3 players, 2 for 4 players)
6. Distribute meme cubes to locations
7. Initialize viral quotient to lowest states
8. Start first player's turn

### **Case 32: Infection phase of turn**

#### **Action**

1. After the user has drawn two cards and completed up to four actions.

#### **System Response**

2. The number of meme infection cards drawn are equivalent to the viral quotient.
3. Place one new color matching meme cube into the website.
4. If website already has three cubes of the same color, trigger a meme outbreak.
5. Discard the meme infection cards.
6. Game updates the map.

### **Case 33: Meme Epidemic card**

#### **Action**

1. Epidemic card is drawn

#### **System Response**

2. Increase the viral quotient by 1
3. Card is drawn from the infection deck; 3 meme cubes are placed on that website; card is discarded
4. Cards in infection discard pile are shuffled and placed on top of the infection deck

### **Case 34: Player Roles**

#### **Action**

1. Player attempts an action buffed by their roll

#### **System Response**

2. Bonuses function properly, granting additional abilities or bonuses (explained under “help roles”)

### **Case 35: Player Turn Actions**

#### **Action**

1. Player takes an action

#### **System Response**

2. Game decrements remaining action Counter
3. Player's turn continues until no actions remain

### **Case 36: Correctly executing meme outbreaks**

#### **Action**

1. Meme outbreak occurs.

#### **System Response**

2. Game increases the counter on the Outbreak track.
3. Game places an addition cube of meme color into every website that is connected to the outbreak location
4. If adjacent websites have three of the meme colors, then outbreak propagates from that new website repeating the process (no additional cube added to the original website)