**Alexa Game**

**Echo Application Specifications**

**General Overview**

For our project, our goal is to build voice-interactive games designed for the Amazon Echo speaker. These games, or Alexa Skills, include Hangman, Fortunately, Unfortunately, Word Train, and a quiz game. Hangman is a classic guessing game in which one player attempts to guess a secret word, phrase, or sentence by proposing letters or numbers within a certain number of tries. For Echo, Alexa will have the secret word and the user will give the guesses. The chosen word will be based on length parameters and game difficulty which are set by the user. Next, is Fortunately, Unfortunately, a word game suited for group play. The game begins with one person giving a sentence. Another person follows with an unfortunate event involving the subject of the opening sentence. A third person follows with a fortunate event in a similar manner. This continues, the events alternating between fortunate and unfortunate, up to an unspecified end. An example of gameplay is as follows:

*Person 1: Jeff starts his new job tomorrow.*

*Person 2: Unfortunately, he has no idea where he parked his car.*

*Person 3: Fortunately, he installed gps tracking last year.*

*Person 4: Unfortunately, he can only check it on his phone, which he left in the car.*

*. . . .*

Users can have Alexa save and readback the stories. Thirdly on the list, is Word Train. In Word Train, one player gives a word and the next player must give a word that begins with the last letter of the previous word. The game would follow as such:

*apple, eat, team, man, etc.*

The final game is a quiz game. This game could potentially be a question/answer, trivia night type of game. Questions would be based off of user chosen category and difficult and posed by Alexa to participants. The winner is whoever gets the most correct answers.

**Basic Functional Description and Application Requirements**

1. Upon starting the Party Games Alexa skill, the user will be able to select which game they want to play. The user can ask Alexa to list all games that are available and then choose one from the list. Alexa will then start the selected game.
2. The user can choose to play the following games: Hangman, a Word Train game, a Quiz game, or Fortunately Unfortunately.
3. At any point while playing any game, the user may ask Alexa to quit the game.
4. At any point while playing any game, the user may ask Alexa to restart the application. This will trigger the application to quit the current game and return to the starting state, where the user can the select another game to play.
5. At any point while playing any game, the user may ask Alexa to pause the game in order to access other Alexa skills. The user may then resume the game at a later time by saying “Alexa, resume…”.
6. The Party Games Alexa skill will store game statistics for its user. The user can then ask Alexa to tell them their statistics for a specified game.
7. When playing Hangman, the user will have the specified number of lives to guess the selected challenge word by first guessing the letters contained in the word.
8. When a user starts a game of Hangman, they can choose the difficulty of their game (Easy, Medium, Hard), determined by the number of chances they have to make incorrect guesses, similar to classic hangman.
9. When the user starts a game of Hangman, they can also choose the length of their challenge word.
10. The Word Train game is played by saying a word whose first letter matches the last letter of the previous word (i.e. Apple, Eat, Table, Enjoy…). Alexa will say the first word, and the game ends when the user can no longer come up with a suitable word within the time limit.
11. When a user starts a game of Word Train, they will be able to choose the difficulty of the game (Easy, Medium, Hard), determined by the length of time they have to provide a suitable word.
12. When a group of users (two or more) starts Fortunately Unfortunately, they will take turns, prompted by Alexa, saying sentences to create a whimsical story made up of alternating “Fortunately…” and “Unfortunately…” sentences.
13. When a group of users has finished their story in Fortunately Unfortunately, they can request that Alexa construct and read back their story in its entirety.
14. The Quiz Game consists of a series of multiple choice trivia challenge questions.
15. When the user starts the Quiz Game, they can specify the category of challenge questions they would like to answer.
16. When the user starts the Quiz Game, they can choose the difficulty of challenge questions Alexa will ask them.
17. The Quiz Game can be played in multiplayer, where multiple players will take turns answering the challenge questions, and Alexa will determine the winner at the end of the series of questions.

**Implementation Considerations**

1. How will the main app tie the games together? More specifically, what user interaction will prompt starting a hangman game versus a word chain game?
   1. Which games are most important
   2. Will games be able to use similar functions, such as a universal dictionary of words
2. How will Alexa differentiate between which game is starting and vaguely worded names of games?
3. How will Alexa handle leaving the game app for another app, say music, temporarily?
4. Do we need to consider copyright law if we intend to ever submit the app to the Alexa store?
5. How will we handle finding a new phrase to add to our existing ones if we miss a common phrase? For example “start game” is used but we realize that “play game” is also important?
6. How do we handle Alexa being unable to decipher a command or having two similar commands that are mixed up?
   1. Possibly have a “back” command
   2. Make sure our key phrases are unique from each other to avoid confusion
7. Technically, what goes into creating an Alexa app? None of the developers currently have any background using Alexa, so there will probably be a steep learning curve.
8. How do we know we haven’t missed an important part of an Alexa app since we have never experienced making one?
9. How can we design a stats interface to avoid any slow load times?
10. Do we need to design a phone application to go along with the voice based game application?
    1. For example have a phone application that mirrors the voice game, so saying a command or clicking a command will advance the other system as well.
11. Is language a concern? Do we need to account for users playing in different languages?
    1. Would we need to still input key phrases in different languages?
    2. Do we need to implement a dictionary for a different language for hangman for example?
12. For many of these concerns, should we focus on building a working simple app/game first and then worry about additional features? Conversely, should we try to slowly build everything out one step at a time rather than building something then reworking it?
13. How does testing work with Alexa?
    1. Assuming we have an Echo, do we have to deploy the code and then actually play through the game each time?