

# Leximon Requirements

## 1 Terms

- The Game: Leximon, the product described by this SRS.
- Game State: The data which determines the state of each object in The Game.
- The Computer: A device on which The Game runs.
- Player: The person who interacts with the game by providing input via The Computer.
- Type: A single-word label for a category of words which are synonyms or antonyms of each other.
- Action: A single word belonging to one or more Types.
- Dictionary: A collection of one or more Actions.
- HP: Health Points.
- Armor: A multiplier which affects how HP is changed.
- Character: An object in The Game which has a Type, a Dictionary, a maximum HP value, a current HP value, and an Armor value.
- Inventory: The collection of values owned by a Character.
- Player Character: The Character controlled by the Player.
- Enemy: A Character controlled by The Game which is hostile to The Player Character.
- Attack: An attempt by a Character to reduce another Character's HP.
- Defense: An attempt by a Character to increase their own Armor value.
- Relation Engine: An engine to determine the effectiveness of an Attack or Defense based on the relation between the Action chosen and the Type of the Character it affects.
- Turn: An opportunity for the Player Character or an Enemy to Attack or Defend while interacting.
- Round: A single loop of Turns, one for the Player Character and one for the Enemy.
- Battle: A sequence of Rounds.

## 2 Specific Requirements

1. The Game will have a Hub World containing the Player Character and five Enemies.
  - (a) The Player Character will be able to move freely around the Hub World.
  - (b) Each time the Player Character enters the Hub World enemies will be spawned at random locations until there are five enemies in the Hub World.
2. While in the Hub World the Player will be able to open an Inventory Menu.
  - (a) Actions from the Player Character's Dictionary will be displayed.
    - i. Selecting an Action will display the Types it belongs to and the definitions of the Action corresponding to each Type.
  - (b) The Player Character's Type will be displayed.
  - (c) The Player Character's current and maximum HP will be displayed.
3. A new Game State will be initialized using the following attributes:
  - (a) The Player Character will start at [INSERT POSITION HERE].
  - (b) Every Action in The Game will be added to the Player Character's Dictionary.
  - (c) All Characters will have 100 current and maximum HP.
  - (d) All Characters will have 1.0 Armor.
  - (e) The Player Character's Type will be randomized.
4. While in the Hub World the Player will be able to save the current Game State.
  - (a) The Game State will be saved persistent storage on The Computer.
  - (b) The position and data of every Character will be saved.
5. Upon starting the game the player will be shown a Main Menu scene with the name of The Game and several options.
  - (a) An option labeled "Start" will retrieve the saved Game State and apply it to The Game. If no saved Game State is available, a new Game State will be initialized and applied to The Game.
  - (b) An option labeled "About" will open The Game's website in an external web browser.
  - (c) An option labeled "Exit" will close The Game.
6. While in the Hub World the Player will be able to exit to the Main Menu.
  - (a) Exiting to the Main Menu will save the current Game State.

7. The Player Character interacting with an Enemy in the Hub World will start a Battle.
  - (a) Starting a Battle will move the Player Character and the Enemy to the Battle Scene.
    - i. The Enemy's Type will be randomized.
    - ii. The Player Character and the Enemy will be displayed facing each other.
    - iii. The Type, HP, and Armor value of each Character will be displayed.
    - iv. A list of five Actions selected from the Player Character's Dictionary at the start of the Battle will be displayed.
      - A. One synonym of the Player Character's Type or one antonym of the Enemy's Type will be selected.
      - B. One antonym of the Player Character's Type or one synonym of the Enemy's Type will be selected.
      - C. Three Actions will be randomly selected from the rest of the Player Character's Dictionary.
  - (b) Each time it is the Player Character's turn the Player will select a displayed Action.
    - i. Upon selecting an Action the Player will be prompted to choose whether to perform an Attack or Defense using the Action.
    - ii. Attacks by the Player Character will deal a normal damage of 10 HP.
    - iii. Defenses by the Player Character will normally increase their Armor value by 7% each time.
  - (c) The strength of the Player Character's Attacks will be determined by the Relation Engine.
    - i. An Attack's damage will be unchanged if the Action belongs to a Type which is an antonym of the Enemy's Type.
    - ii. Otherwise, an Attack will deal 1/4 damage if the Action belongs to a Type which is a synonym of the Enemy's Type.
    - iii. An Attack will deal 0 damage if none of the Types the Action belongs to are antonyms or synonyms of the Enemy's type.
  - (d) The strength of the Player Character's Defenses will be determined by the Relation Engine.
    - i. A Defense's effectiveness will be unchanged if the Action belongs to a Type which is a synonym of the Player Character's Type.
    - ii. Otherwise, a Defense will be 1/4 effective if the Action belongs to a Type which is an antonym of the Player Character's Type.
    - iii. A Defense will not increase Armor value if none of the Types the Action belongs to are antonyms or synonyms of the Player Character's type.

- (e) Each time it is the Enemy's turn The Game will randomly select Attack or Defense.
  - i. Attacks by the Enemy will deal 7 HP of damage.
  - ii. Defenses by the Enemy will increase their Armor value by 5% each time.
- (f) All Attack values will be divided by the Armor value of the Character they affect after the Relation Engine is run.
- (g) The Battle will end when one of the Characters runs out of HP.
  - i. The Player Character running out of HP will be considered a Player Character Loss.
    - A. The Enemy will be returned to their position in the Hub World before the Battle started.
    - B. The Enemy's current HP will be reset to their maximum HP and their Armor value will be reset to 1.0.
  - ii. The Enemy running out of HP will be considered a Player Character Win.
    - A. The Enemy will be removed from the Hub World.
    - B. The Player Character's Type will be randomized every third Player Character Win.
  - iii. The Player Character will be returned to their position in the Hub World before the Battle started.
  - iv. The Player Character's current HP will be reset to their maximum HP and their Armor value will be reset to 1.0.
  - v. The Hub World will be shown to the Player.
  - vi. The current Game State will be saved.