

# PLANTS vs. ZOMBIES



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# IMPLEMENTATION



## CLASSES USED

- Driver class - GamePlay
- Game, which contains objects of
  - User Class
  - Lawn Class
    - Tile Class
    - Sun Class
    - LawnMover Class
  - 1 class for each level
- Utility classes like
  - Almanac Class
  - Pea class
  - Coin class

## CLASSES USED

- Character Class
  - Zombie class
    - 6 classes for each zombie
  - Plant class
    - 4 classes for each type of plant
    - 1 class each for each plant, extending one type each
- Other classes to introduce various GUI components.

## INTERFACES

- Serializable - To serialize all components of the Game Class
- Cloneable - For cloning the dancing zombie
- Runnable - To simultaneously implement various tasks at each level



# ☀ IMPLEMENTATION ☀



## EXCEPTIONS

- NotEnoughSunException
  - Thrown when there are not enough suns to purchase a plant during the game.
- GameWinnerException
  - Thrown when a player Wins a Level
- GameLostException
  - Thrown when the zombies cross your lawn and eat your brain

## DESIGN PATTERNS

- Factory Design Pattern
  - While Producing Zombies at each level
- Singleton Design Pattern
  - Strictly a single instance of the game class can be generated
- Decorator
  - Used in Serializing and Deserializing
- FlyWeight







# CONTRIBUTION



## SNIGDHA

- GUI Functionalities like
  - Drag and Drop
  - Timeline
  - Transitions
  - Scene Building
  - Event Handling
- Back End
  - Basic class Implementation and Exception Handling
  - Design Patterns



## KHUSHALI

- GUI Functionalities like
  - Event Handling
  - Design of Game Flow
  - FXML Linking and Loading
  - Sun tokens binding
- Back End
  - Basic Class Implementation and Exception Handling
  - Serialization and Deserialization





# BONUS



## ALMANAC

Not everyone knows how dangerous these zombies can be and a user must be equipped with a User Manual which guides them through their Evil powers and their flaws.

This is a guide for user about Various Plants and Zombies showing their strengths and weaknesses.

## SUPER POWER

It's rough for plants to exist at times when it's cold, suns are a rare occurrence and zombies are on the edge to eat your brain.

The Special Power is a Life Saviour Button provided on Screen which when clicked forces all the zombies to Retreat for few seconds.

