# Design Document:

## 1. State the Problem

**I will be designing a 2D adventure game called Moon Shards. For billions of years, the Earth co-existed with the sun and the moon in peace. There was a healthy balance of day and night. However, one day, a huge rain of asteroids pelted the moon. The moon was slowly but surely broken into tiny shards. The balance of the world was thrown into chaos. Amidst the panic, a heroic moon shard named Khaled set off on an adventure with one goal in his mind; to re-unify the moon shards and restore the moon.**

**The game will comprise of text-scrolling and actually gameplay movement. The text-scrolling stages will tell the story of Khaled. The gameplay stage of the game will have enjoyable gameplay where the screen scrolls horizontally automatically. The user will be responsible for vertical movement and avoiding the evil fairies.**

## 2. Analyze the Problem

List key questions in the left column to help flesh out the details of the program

|  |  |
| --- | --- |
| **Questions** | **Answers** |
| In general, what type of game is Moon Shards? | It is a 2D adventure game where the player has to navigate through multiple levels in order to collect “moon shards”. It will be an auto-scrolling game where the player controls the y-movement. During the gameplay, there are evil fairies you must avoid at all costs. If you run into an evil fairy, it’s an instant game-over and you must start over from the beginning of the level. |
| What will make this game challenging? | This will be a relatively challenging game because I chose not to implement a lives system. Dying once will mean that the player must start the level over. I feel this adds a good challenge that my game needed. |
| How will the player be engaged to the game? | The player will be engaged into the game with multiple things. Some things I will include are:   * Story * Addictive gameplay * Great music |
| What is the goal for the user who plays the game? | * This game is heavily text-story based. The goal for the user is to enjoy a great story while keeping engaged through the gameplay portions. |
| How does this game differ from any other game? | Moon Shards is a unique game of its own because of:   * Original story * Original gameplay * Unique genre that fuses storytelling and gameplay. |

## 3. Determine the Specifications

* List the key specifications of the program
* Complete an IPO Chart.

|  |  |  |
| --- | --- | --- |
| **I (Input)** | **P (Processing)** | **O(Output)** |
| * Keyboard input   + Movement   + Menu Select   + Going through dialogue. | * Player coordinates (location) * Calculate hitboxes. Whether the user has died or not. * Process which game stage and substage should be shown at what times. * Process text files for any text in the game. The vast majority of the text will be in textfiles. * Does the user want to quit or restart if they die? | * Graphic output of player moving on the screen. * Images * Backgrounds * Scrolling backgrounds * Dialogue (text) output. * Instructions output. * Sound, music output |

## 4. Create a Design

GET user keyboard input

SET music list

SET images

CREATE lists for any random variables in the game

CREATE list for text dialogue in the game

SET any movement variables

DEFINE any functions required in the main program.

WHILE game is running:

IF user presses space on the last substage:

gameStageNumber add 1

IF user presses space on NOT the last substage:

subStageNumber add 1

GET Game Stage Number and Sub Stage number

EXECUTE play/display music and background according the gamestage and substage number

DISPLAY blit any text/images/drawings according to the gamestage and substage number

IF the stage is a text-reading or selection stage:

DISPLAY blit the text in the dialogue text list

SCROLL through text

IF the stage is a gameplay stage:

DISPLAY multiple backgrounds side to side and scroll them to create a moving effect

DISPLAY blit multiple fairy enemies at random locations.

IF user presses up arrow:

move character upwards

IF user presses up arrow:

move character downwards

IF user character dies, collides with fairy:

GET user keyboard inputs

IF user presses q:

exit game

IF user presses r:

restart level

IF the stage is the last stage:

if user presses q:

exit game

#### \*\* zoom into the doc at 200% if unreadable.

# cptGameFlowchartMoonShards.png

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