ARCANE WRITER

GAME DESIGN DOCUMENT

REVISION HISTORY

Date	Version	Description	Author
23/06/2010	1.0	**Initiated** template.	Ivan Beram
13/05/2015	1.1	**Updated** templated.	Ivan Beram
7/04/2016	1.2	**Initiated** document.	Very Good Games Inc.

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Concept Overview

Concept Summary

High Concept
"The Legend of Grimrock meets Zork..."

Arcane Writer is a dungeon crawler RPG where the player fights monsters and interacts with the world using text commands. Combat is portrayed in turn-based while the exploration is free-movement.

Concept Specifications

- **Game Engine + Language:** Unity 5, C#
- **Platform(s):** PC (Keyboard and mouse)
- **Business / Distribution Model**: Free digital release
- **Market demographics**: Mature audiences, 15 and over whom enjoy puzzle based-dungeon crawlers.
- **Game Modes / Number of players**: Story Mode, Single player
- **Game View / Genre**: 3D perspective/environment with 2D sprite monsters
- **Number of levels / Playing time**: 3 Levels providing an estimated 3 hrs of play time

Concept Premise
You are Purwin Zomlem, a young girl from the village of Oakwood . One night a strange storm hits the fields, destroying the crops. The villagers, who decided to kill your mother just weeks before accusing her of witchcraft, not have decided to point the finger at you and your little sister, for dealing with the devil. You are captured and imprisoned, awaiting a trial that most likely will end up with you death. your sister fate's in unknown. During the night, in your cell, a dark entity appears, giving you the means to escape your cell, giving you hope of being free and punish to those who have destroyed your family… for a price.

Concept Theme
The main theme which is highlighted throughout the game is the emotion of "Anxiety". The player is plunged into a foreign hostile environment with nothing on them. Only armed with their wits and a few spells the player must fight alone against all odds to discover the mysteries of the stronghold. The despair is created through the dank dark narrow environment that the player finds themselves in, combined with ambient sounds and music it should hopefully create a compelling experience. The constant feeling of isolation and claustrophobia will promote the this prime emotion of anxiety but also help to develop the authenticity of the narrative.

Concept Aesthetic
The visual style is very similar to dark fantasy as the game takes place in a hostile dark prison. The textures and assets appear rough and dangerous and are positioned in such a way to make the player question their purpose. The prison itself is built with primitive stone bricks and scarcely lit with dull torches . Objects and assets within the game world will appear dark decayed . The environment is designed in such a way that it will emphasis unease and uncertainty and make the player question both their surroundings and their situation.

The Audio style would be described as dark ambient and is designed in such a way that it should build and develop the overall atmosphere and theme of the game which is anxiety. Some of the sounds would include crumbling rocks, wind, breathing, unsettling instrumentals and other odd noises and effects.

Gameplay Details

Core (Genre) Mechanics

- Environmental Typing
  - Interaction
  - puzzle solving
- Environmental Traps
- Turn based combat
  - Spell combat
  - Monster AI

Key Defining (Distinct) Mechanic(s)

The environmental interaction, which conveyed through typing is a distinct mechanic within the game. Making the player type forces the player to think and consider their consequences before they proceed. Making rash decisions will likely result in a quick death. When a player interacts/clicks on an item a UI will pop up and prompt the player to type something.
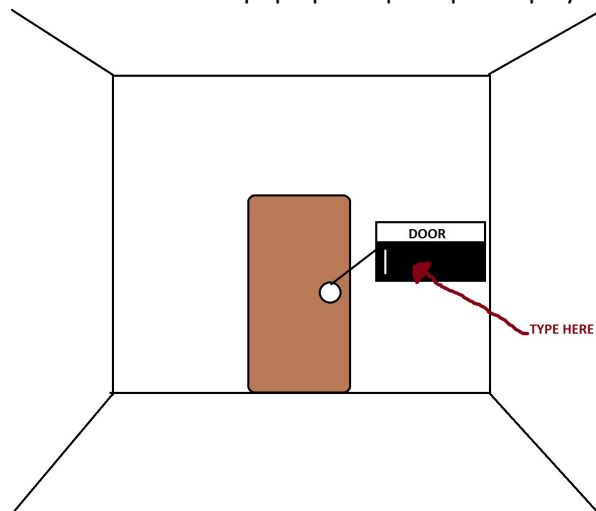
A small list of suggested words will be presented to the player. These few words perform the basic actions for that object e.g; a torches action would be take, light, extinguish. Other more unorthodox options will be hidden to the player and will be possible solutions to puzzles. One possible situation would be that a torch is positioned near a locked gate with no lever to be seen, the player clicks on torch and presented with no obvious answers, they experiment and they discover the word "pull" activates the torch. It was a secret switch all along.

This sense of unknown will encourage players to think about their actions but also the possible consequences of said actions. A possible trap for the puzzle above would be if the player pushed torch a monster would be released forcing the player into combat.

Environmental traps are a set of mechanics which are presented differently throughout the game. Each trap effects the player differently, for example a spike trap will likely kill the player instantly whereas a gas chamber will present the player with a time limit to find the solution. Most traps will be subtly hidden to the player but instead will have small hints will be given to the player such as blood on the ground, skeletons, scorch marks, lighting changes etc. Solutions to these puzzles will vary depending on the progress of the game, increasing difficult puzzles will be presented to the player as they complete the game.

Game Objectives

Player's Key Objective

- What is the player's key objective in the game?
The player's main objective is to overcome the obstacles of the prison and escape the prison
- What is the goal?
The short term goal is to reach the end of each level which is done by completing various puzzles and overcoming traps to get to the end.
- Why should the player care about progressing?
The player will hopefully want to be released/free from confinement and fight the one responsible for your imprisonment. And as a result be relieved of the looming threat of the terrible prison.

Victory (Win/Loss) Conditions

The player wins the game by completing all the levels and overcoming the final challenge. Short term winning goals consist of completing singular levels and defeating strong enemies.
The loss conditions mostly consist of dying in various ways both due to environmental effects and monsters.

Progression / Reward System

- By overcoming the challenges and progressing through the game, the player is rewarded with new spells or tools to handle the next hurdle.
- As the player progresses, the player will gain more insight   on the plot elements, clearing up the mysteries shrouding the game world.

Competitive Analysis

Competitive Titles

The Legend of Grimrock for its dungeon crawling aspect. The visual aesthetic is also somewhat similar to said game.
Zork for its typing mechanic. To interact with the game, players have to type in words that are relevant with the object in question. Players will have to experiment to find out what words work best at a certain situation.

Unique Selling Points

- Type your magic words and unleash powerful spells!
- Fight powerful adversaries! Defend yourself!
- Navigate through the dark and dank underground of Stormford Keep Prison.
- RPG mechanic with turn-based typing combat never before seen!

Key Development Risks

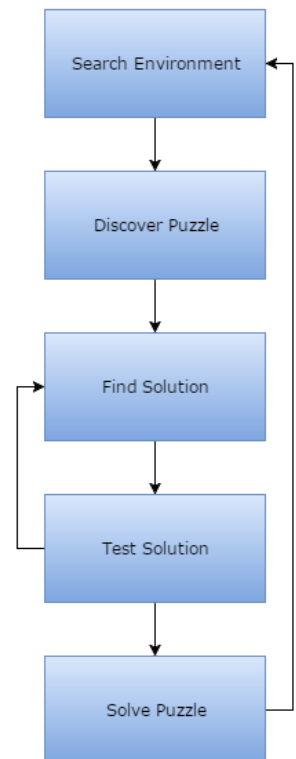| Risk	Probability	Severity	Risk Control	Solution
Data Loss	Low	High	3	Ensure Backups
Internet malfunction	Low	High	3	Use multiple forms of communication
Team conflict	Low	Medium	3	be open to suggestions, new ideas. Listen.
Damage to property, emergency	Low	High	1	Contact providers/services in order to resolve problem.
Client changes design/scope.	Medium	Medium	2	Collaborate to produce content aiming more at clients requirements.

GAME MECHANICS

Typical Gameplay Example

Core Gameplay Loop:

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Core (Genre) Mechanics

- **Turn-based Combat**
- **Interaction by typing**
- **Spell System (in and out of combat)**
- **Traps**

Turn-based Combat

Summary	When the player gets close to the enemy either the player or the enemy can initiate combat. For the duration of combat the player's camera and movement are locked, if the player wins then the player's camera and movement are unlocked and the player can proceed.
Actors	● Player ● Enemy AI
Advantages	● Ordered combat ● Allows the player to strategise ● The action is more predictable
Disadvantages	● Can be repetitive ● Breaks the flow of the game ● Can be too predictable
Preconditions (or Triggers)	● The player and enemy get within a certain distance of each other ● Either the player or enemy initiates combat
Event Sequence	1. Player decides on a spell and types it in correctly within the time limit, which damages the enemy 2. The enemy attacks the player and the player takes damage 3. Steps one and two repeat until either the player or enemy are defeated
Alternative Paths	● If the player types the spell incorrectly the spell will fail and they will lose their turn ● The player takes too long and runs out of time and loses their turn ● The enemy attacks have a chance of failing and thus losing their turn
Postconditions	● The game continues when either the player defeats the enemy or the enemy defeats the player. ● If the player is defeated then the player restarts the level ● If the player is successful then the player continues through the level
Technical Requirements	Art assets required: ● Enemy sprite

	● HUD ● Spell particle effects Audio assets required: ● Spell sound effects ● Enemy attack sound effects ● Enemy sounds Code assets required: ● Combat scripts
Duration	While the duration of combat will vary, the length of the player's turn will be a fixed time limit

Interaction by Typing

Summary	Every interaction within the game requires correctly typing a command into a UI
Actors	● Player ● Interactable object or enemy ● Spell (in combat)
Advantages	● Encourages players to experiment with words ● More ways to interact with objects and enemies (in combat) ● Encourages the player to be careful and think things through
Disadvantages	● Interactions take longer to perform ● In combat players who are slow at typing are penalised ● Players need to memorise a number of spell commands
Preconditions (or Triggers)	● Need to discover spells before you can use them ● Selecting an object that can be interacted with ● Having combat initiated by an enemy
Event Sequence	1. Player selects object 2. Player types command into UI 3. Action occurs
Alternative Paths	If player types a wrong command into the UI, one of three things will happen: ● Activates a trap ● Gives the player either a reward or access to a hidden area ● Does nothing If the player types a command incorrectly, nothing will happen. If the player interacts with an enemy then the player can initiate the turn based combat.
Postconditions	● Progress, gain a reward or activate a trap ● Win or lose turn based combat
Technical Requirements	Art assets required: ● UI ● Interactable objects Audio assets required: ● Success/fail audio effects Code assets required: ● Text input code
Duration	Varies depending on whether the interaction is with an object or an enemy

Spell System (In and Out of combat)

Summary	The player will be "handed a spell" at certain point of the game. It will be possible to cast spells both in and out of combat. Depending on the situation the spell will give different results
Actors	The player casting the spell Interactable parts of the environment Enemies - NPCs
Advantages	● While useful, spells will not replace intuition in avoiding traps and obstacles. ● In combat, spells will be the only option to actually cause damage (different spells will have different damage potential depending on the enemy) ● Spells are an ulterior interaction alternative towards environment
Disadvantages	● Spells could distract the player emotion from our intent to cause an hostile environment.
Preconditions (or Triggers)	The player will receive a new spell depending exclusively by the storyline, no preconditions or random loot is in place to allow the player to acquire them any earlier than we have planned.
Event Sequence	The event sequence of the spell is expected to be quite simple, if the spell is typed correctly it will produce the standard effect on the target, else it will produce no effect or eventually backfire
Alternative Paths	Spell use on every interactable object is expected to be a long process to be coded and designed but should be addressed as much as time allows, for example the player will expect to be able to use a potential fire spell on all wooden object he encounters.
Technical Requirements	Art assets required: ● particle effects, icons Audio assets required: ● spell sounds, effect on target sounds Code assets required: ● spell scripts for every spell
Duration	Spell duration will depend on each spell description, the casting time is instantaneous, since we take in account the time that will take the player to type the spell

Traps

Summary	The player or NPC will activate a trap by crossing a certain trigger area of the level.
Actors	Both Player and NPC will be able to activate a trap and suffer the consequences (death, loss of health, etc...).
Advantages	Advantages on using traps: ● Hidden danger reinforces anxiety on the player crossing the level ● The player may find using traps against enemies an interesting mechanic of the game
Disadvantages	Disadvantages on using traps: ● The player may become frustrated if it cannot easily identify a way to cross/deactivate the trap
Preconditions (or Triggers)	Each trap has an area collider that will activate the trap once an actor crosses the area. Most traps will have a "trap lever", that will allow the player to deactivate the trap. If the trap lever is turned on, no player or NPC will be able to activate the trap.
Event Sequence	● The player or NPC steps into the trap's trigger area ● The trap will trigger producing an effect (release gas, lowering the ceiling etc...) ● The player or NPC suffer the consequence
Alternative Paths	Alternative ways to avoid/deactivate/trigger traps are still a work in progress. Playtest will be necessary to eventually add IF THEN ELSE eventualities.
Technical Requirements	Art assets required: ● Blood particle effects, 3D models Audio assets required: ● trigger sounds, effect on target sounds Code assets required: ● traps scripts for every trap, lever script to deactivate trap
Duration	While some traps will trigger to cause immediate effect(i.e. spikes), others might take longer to cause damage(i.e. Lowering ceiling)

Key (Theme) Mechanics

● Interaction through typing: all interactions are done by typing commands into the UI, such as push lever/door, pull lever/chain/door. Outside combat, the player incurs rewards or penalties depending on how they interact with interactable objects in order to solve puzzles. In combat the player must know the command for each available spell so as to be successful.
● Turn based combat: when combat is initiated, the player enters a command that corresponds with a spell. Certain enemies are vulnerable to certain spells such as fire spells doing more damage to wooden objects.

Key (System) Mechanics

● Movement: Both player and enemy movement is in real time, the player uses regular movement controls to navigate the level through the use of the WSAD keys and the mouse
● Inventory: Helps the player keep track of the items that they have obtained

Game Stats

- Typing skills: the competency of the player at typing will affect how quickly and easily they progress through the game.
- Spell strength: in terms of damage, the longer and/or harder to spell the command for that spell is, the stronger the spell

Win / Loss Conditions

- The player wins in the game overall by completing the game.
- The player wins a level by progressing to the end of the level.
- For the player to win the turn based combat, the player must defeat the enemy.
- For the player to lose the turn based combat, the player must be defeated by the enemy.

Difficulty Systems

The varying abilities of the players may be addressed by allowing the player to set the difficulty settings. This means that during turn based combat, the length of time that the player has for their turn will decrease, the higher the difficulty level.

As the game progresses the difficulty will increase as the enemies become stronger and the levels become more complicated.

AI Behaviour

IN COMBAT :
The NPC will make decisions about which action he will take partially by randomising the decision and partially depending on the player previous attacks and his own life status.

 OUT OF COMBAT:
The NPC hostile to the player will patrol an area of the dungeon and he will attack once the player is in sight.

User Interface

The user interface (UI) description covers the onscreen buttons as well as the peripheral buttons or keyboard controls that the players use to:

● Navigate	walk, run	Managed On Keyboard
● Control the Player	activate abilities, use weapons	On Keyboard (typing words)
● Manage inventory	use items	On Keyboard (typing words)
● Track inventory status	keys, quest items	On Screen
● Interact with NPCs	talk	On Keyboard (typing words)
● Track PC status	health, magic	On Screen
● Use special items in the world	switches, doors, devices	On Keyboard (typing words)
● Set options	audio, video, button mapping	On Keyboard (Esc button)
● Save/Load games		On Keyboard (Esc button)
● Pause or exit the game		On Keyboard (Esc button)

Controls (on All Platforms)

The game controls <u>MUST</u> be carried by a keyboard, due to the necessity of typing words.
The keyboard will become completely available for typing every time the input interface will appear, locking cameras and movement of the player while the typing happen, <u>but not locking time</u>, the player can still be subject to traps damage and enemy attack while the input interface is on.

The following are the current keys to control the game, but may change until release:
ESC   options, pause
W-A-S-D   player movement

Camera Descriptions

Cameras in the game will always be first person perspective.

Screen-Space UI
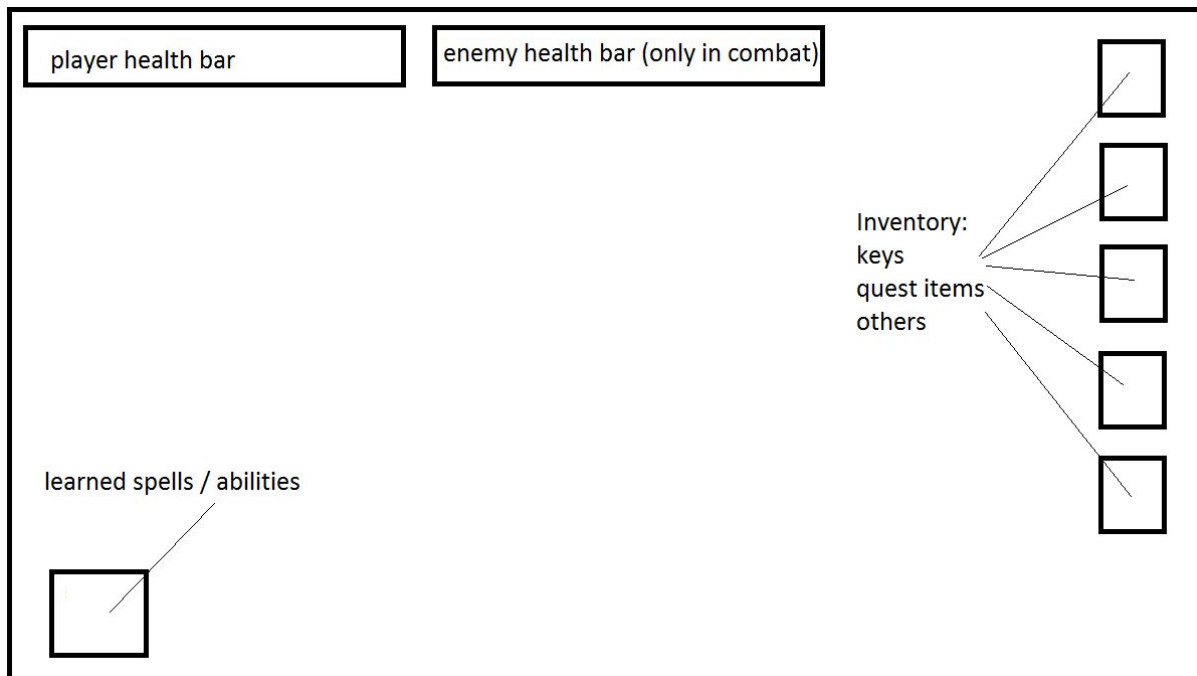
Word-Space UI

The world-space UI consist on the input window that appears once interacting with certain elements of the environments. Once the player clicks on an interactable object, he will able to insert the action he wishes to take in the input area. Suggested words the player can type are written below the input area.
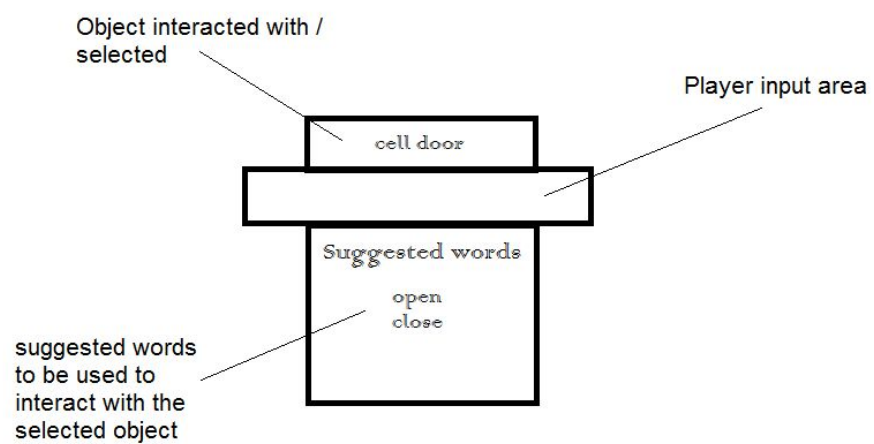
Main Menu Flowchart
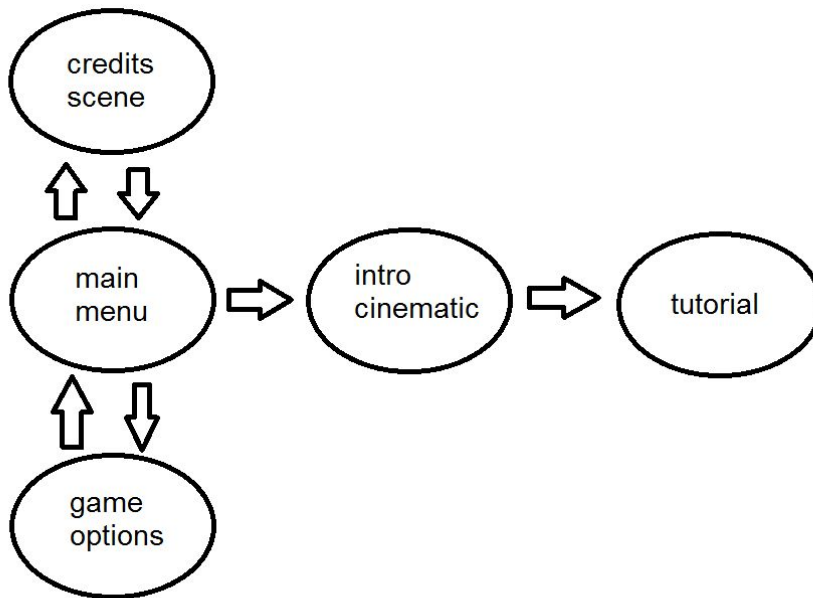
Saving / Loading System

Save Points are based on checkpoint located at the beginning of every level.
The player will be able to resume a game from the beginning of the level where he last left;

GAME SCENARIO

Game Universe

The player is in the control of a girl who is accused of witchcraft and hauled off to prison. Before the events of the game the local town/city was attacked by a demonic witch. Most of the infrastructure and agriculture was destroyed and so the town was crippled. You a simple farm girl live alone with your little sister struggling to survive by living off the land. Your father died in the war and your mother mysteriously vanished when you were young. Now the town is looking for a scapegoat and are prepared to pin the blame in you, the outcast.

Game Synopsis

The game starts with the character being hauled away to a prison cell to die. The door is locked and there are little to no chances of survival left alone freedom. The player is approached by a demonic figure and offered a deal . Embrace your inner darkness so that you can escape and save the little family you have left, your sister. Dark magic mysteriously flows through you and you are able to escape your prison cell. You discover that you are in a filthy dangerous labyrinth filled with traps and monsters. Scavenge objects and fight to survive, uncover dangerous unstable magic to battle the constant obstacles and death traps that are present within the stronghold.

You find it strange that you can cast such advanced magic so easily, notes left by what you can imagine can only be the same demonic figure. In the end, you escaped the dark prison, but at what cost?

Game Settings

Majority of the game takes place in a dark prison/keep.

Key Characters

- **Purwin Zomlem (Protagonist)**
  - A 17yr old girl from the village of Oakwood, jailed due to accusations of witchcraft.
  - The Daughter of Henrietta, Sister of Daisy Zomlem

  Purwin grew up believing that was an ordinary farm girl who would achieve much and perhaps one day raise a family of her own. Purwin's day to day consists of mainly farm work which sustains her and her little sister, the heavy workload and responsibility have molded Purwin into a strong and protective women. Her interactions with the outside world are very limited as she only talk to other people when trading for meager supplies from the nearest town. Because of the isolated nature of the Purwin's farm the surrounding town folk regard Purwin and her sister to be outsiders or exiles and prone to bad luck. Despite this Purwin has faint ambitions to leave and begin a better life.

- **Daisy Zomlem**
  - Daisy is an innocent 7 year old girl who has not yet grasped the complexity of everyday life. Daisy looks up to Purwin fondly and hopes one day she can grow up to be as strong and responsible has her big sister. Daisy attempts to help Purwin with the farm work but usually gets distracted and chases the nearby wildlife. Because of the isolation of their life Daisy is yet to grasp proper social etiquette and attempts to talk to everyone when adventuring into the nearby town . She does not understand why the townsfolk distant themselves from them and avoid them as if they had the

plague.

- **Henrietta Zomlem (Mysterious Figure)**
  - Henrietta is the mother of Purwin and Daisy. They all lived together on the farm until Purwin was 11 years old when Henrietta vanished and never seen again. Henrietta's true past is shrouded in dark mystery rumors say that she has connections to witchcraft and necromancy. Just a little over 6 years ago Henrietta journeyed into the nearby town with dark ambition. She attempted to overthrow the city with dark magic but lucky she was driven back by visiting witch hunters and she was believed to have been killed in the battle. Henrietta's magic however did lay waste to much of the city leaving those who remain to rebuild and try and figure out what happened. The townsfolk did not know at the time that Henrietta had daughters also Purwin and Daisy had no clue to their mother's true identity . but rumors say that she is looking for an apprentice who is naturally gifted in dark magic.

Cloaked Figure, Zeroclops (2015)

Key Vehicles / Objects

- **Magic scrolls**
  - Allows for the player to learn new spells.
  - Can be found hidden in chests, secret areas or even given to the player by the mysterious hooded figure.
- **Keys**
  - Used to open chests and some locked doors.
  - Usually kept in rooms containing guards and/or other monsters.

- **Levers and Pressure Plates**
  - Used to activate / deactivate a variety of traps.
  - Usually hidden; with the exception of some within tutorial sections.

Game Levels

Mission / Puzzle Mechanics

Traps:

- **Poisonous Gas Trap**
  - Poisonous Gas Traps are hidden inside "fake" chests (chests not containing any valuable loot).
  - Once opened by the player, these fake chests fill the room with poisonous gas that will eventually kill the player if they do not find a means to escape the room.
  - In most cases, the door to the entrance of a room containing a gas trap will be locked immediately after the chest is opened; and can only be unlocked by a lever hidden somewhere in the same room.

Gas Trap Scenario   Trap Activation   Trap Deactivation
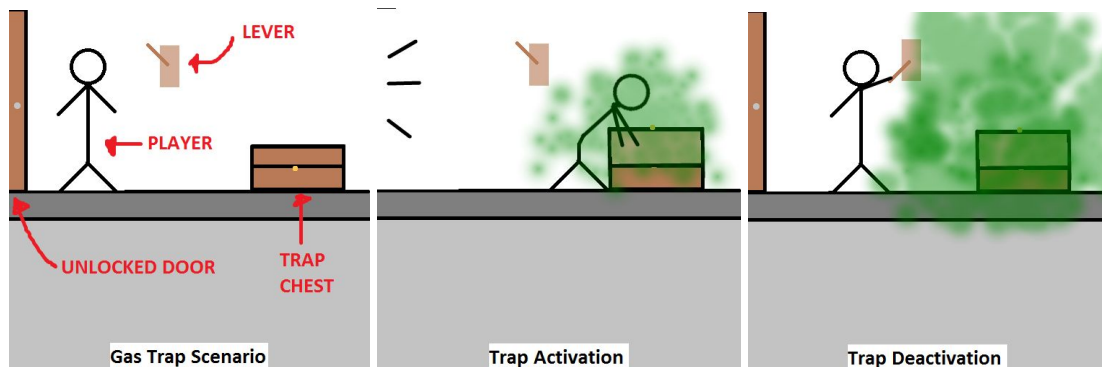
- **Spike Trap**
  - These type of traps are hidden in the floor around various sections of the dungeon, and only activate when the player has triggered them by stepping on a pressure plate, or pulling a lever.
  - The player will be killed as soon as they come into contact with the spikes.
  - The spike trap is also deactivated through the means of levers.

Spike Trap Scenario   **Pressure Plate Activation**   **Lever Activation**
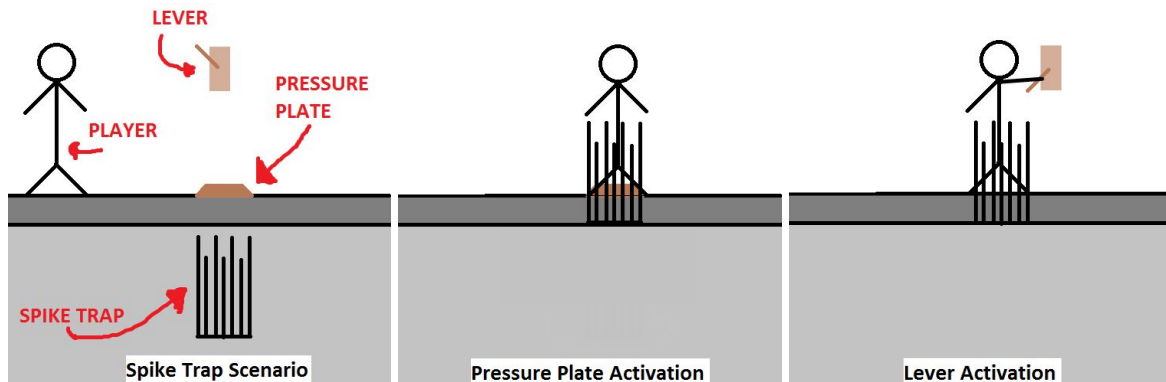
- **Crushing Ceiling / Walls**
  - The crushing wall / ceiling trap is activated when the player has stepped on the pressure plate that is linked to the trap.
  - Depending on the location of this trap, it may either just have crushing walls, or crushing roof, and in some circumstances it may feature both.
  - This type of trap is designed to be implemented in long hallways, where the player cannot simply exit the door to avoid the trap.
  - Once triggered, the walls or ceiling will slowly close in on the player, eventually crushing and killing them.
  - If the player steps onto the pressure plate again, the walls / ceiling will recede back into their original position. But if the player steps off the plate, the walls will continue closing in.

**Crusher Trap Scenario**   **Trap Activation / Trap Halt**   **Trap Activation**
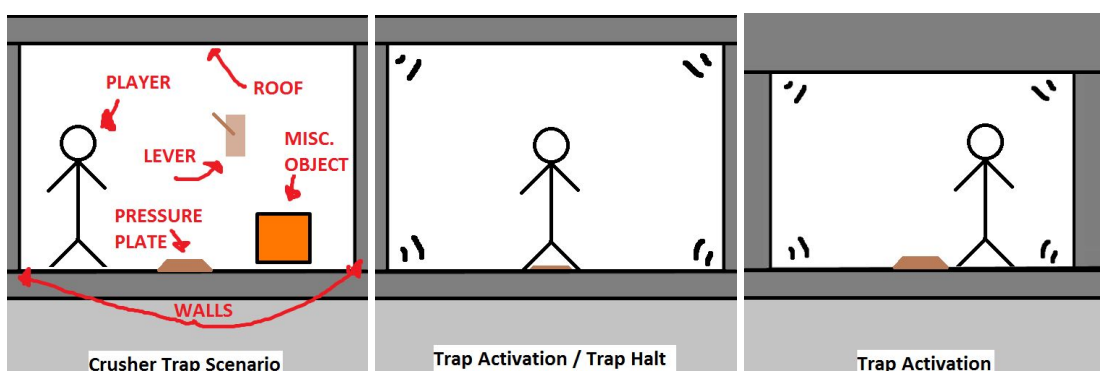
  - This trap can be deactivated in 2 ways:
    - By interacting with a lever found in the same room.
    - Placing an object (using a "lift" spell) on the pressure plate.

Other Puzzles:
- **Trick Levers**
  - Trick levers are just regular levers that have options that may kill, or somehow impact the player in a negative way.
  - For example; Pulling the lever left may trigger a spike trap underneath the player, or may close and lock the door behind the player. Whereas pulling right may open a gate so that the player can progress.

LEVER

Suggested words
PULL LEFT
PULL RIGHT
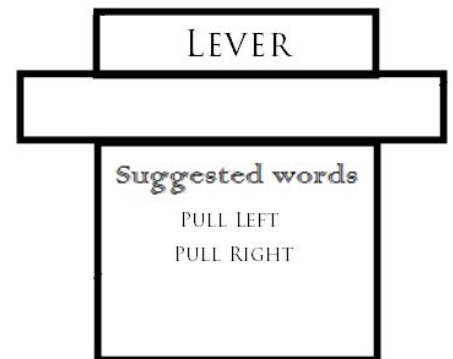
- **Hidden Levers**
  - Hidden levers on the other hand are not as obvious to the player, but give the player a more positive reward for discovering them.
  - An example of a hidden lever may be found in a torch, where the only options given to the player are TAKE and EXTINGUISH. But if the player decides to input PULL, the torch may unlock a secret passage.

TORCH

Suggested words
TAKE
EXTINGUISH
PULL
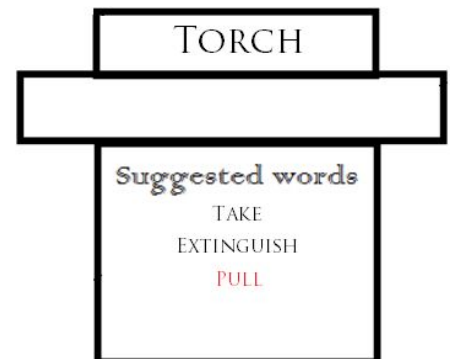
Mission Quest List

Tutorial:

1. **Escaping the Cell**
   When the player starts the level, they will be trapped inside a cell. During the previous cutscene, it's shown that a hooded figure gives the player a means (Spell?? Key?? Unlocks door for you??) to escape. The player then uses that in order to open the door and enter the main hall.
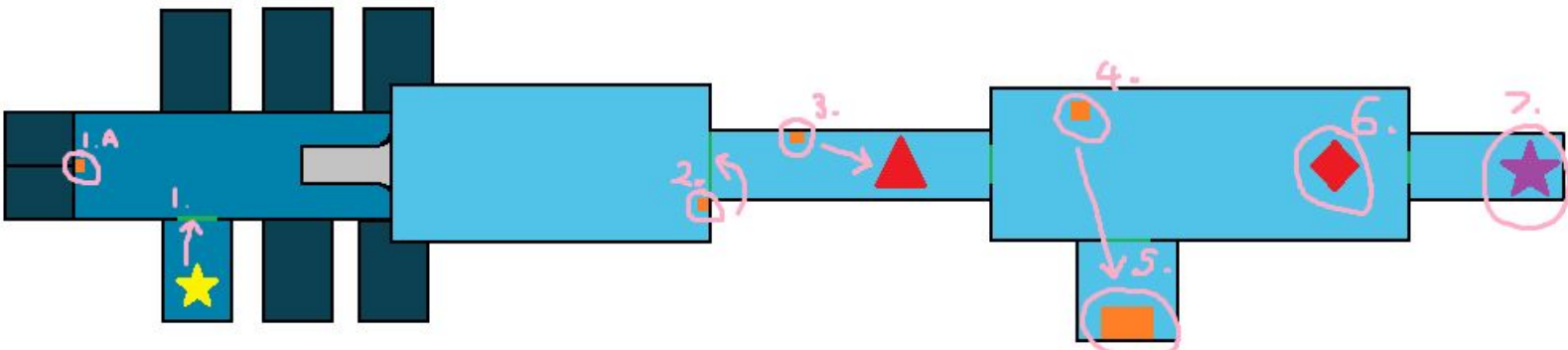   a. **(Optional) Grab the torch**
      If the player decides to grab the torch on the wall, they will be able to light up a small area around themselves, giving the player the ability to see things easier in the dark.

2. **Open the Gate**
   Once the player has made their way up the stairs and onto the second floor, they will notice a closed gate at the end of the hallway. The player then has to pull the lever on the side of the gate, in order to open it.

3. **Deactivate the Spike Trap**
   After opening the gate, the player is presented with a dark, narrow hallway. If The player walks through here carelessly, they will be killed by a spike trap and respawn at the starting cell. The player must then search the narrow hallway to find a lever that deactivates the spike trap.

Key

■ (dark blue)	ACCESSIBLE AREA FL1
■ (light blue)	ACCESSIBLE AREA FL2
■ (darker)	NON-ACCESSIBLE AREA
■ (gray)	STAIRS
■ (green)	DOOR
■ (orange)	INTERACTABLE
★ (yellow)	PLAYER SPAWN
★ (magenta)	END OF LEVEL
▲ (red)	TRAP
◆ (red)	ENEMY

4. **Unlock the Chest**
   In the guard room, there is a table with a key on top. The player is able to take the key and use it to unlock the chest in the southern room.

5. **Retrieve the First Spell?? Weapon?? Fire Spell???**
   Inside the chest is the (**First Spell?? Weapon?? Fire Spell???**) After obtaining this, an enemy enters the room from the eastern hallway.

6. **Defeat the Monster**
   The player now has to defeat the monster in order to progress through to the eastern hallway.

7. **Finish the Level**
   Entering this last hallways finishes the tutorial and allows the player to progress to level 1.

Beat Chart:

LOCATION: Level Name	DUNGEON Tutorial
GOAL	Escape the cell area of the dungeon
PLAY TIME est.	7-10 mins
CHARACTERS	Protagonist, Hooded Figure
STORY PROGRESS	The Protagonist escapes the prisoner holding area. She then makes her way through to the next part of the dungeon, looking for a way to escape and searching for more clues about the mysterious hooded figure...
ENEMIES	Giant Spider
ITEMS	Spell Scroll, Keys
OBJECTS	Torch, Levers, Cell Doors, Wooden Doors, Chest, Spike Trap
AESTHETIC ASSETS	Fallen debris, Broken walls, Stone pillars, Dirt, Benches Ambient music, Fire SFX, Door SFX, Monster SFX, Spike SFX
LEVEL NOTES	Broken walls, doors, etc... Gritty environment Dimly lit

Game Aesthetic

Theme – Visual Style

Gritty Dark Fantasy style textures and sprites. The game features 2D sprites in a 3D environment.
Arcane Writer is set in a high fantasy setting. Most of the environmental elements have a medieval feeling to it (i.e. the technology).

The environment would be described as dank dark and eerie. The environmental design is meant to depict and also express the emotion of anxiety so colour range will be limited. Our current colour pallet mainly consists of primitive brown shades which reflects the dungeon environments. By limiting the colour range it hopefully help to influence the atmosphere of the game and make the situation bleak, hopeless and hostile.

#352208   #E1BB80   #7B6B43   #685634   #806443

coolors™   coolors.co/352208-e1bb80-7b6b43-685634-806443

A game that relates heavily to our project is amnesia the dark descent. Amnesia also makes use of a limited colour pallet which it depicts very effectively within their environments. Differences would include is the overall theme, setting and narrative. Good lessons can be learnt from Amnesia's environments and how we can realistically populate a level with various props and assets. 95% of assets within Amnesia serve absolutely no purpose and exist purely to create character within the narrative and setting, this in turn creates a very immersive experience and a better player experience.
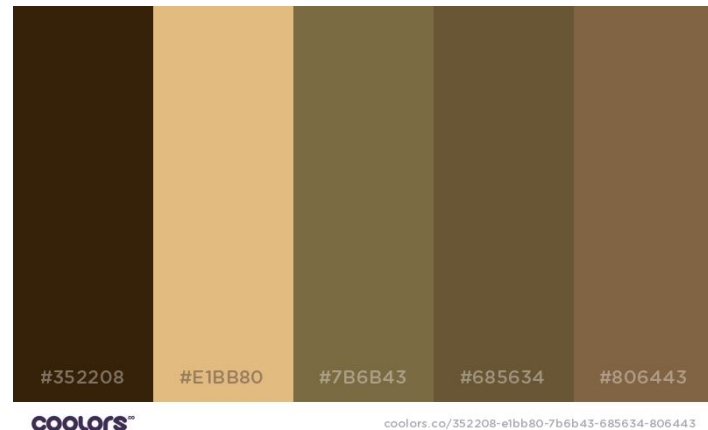

Amnesia: The Dark Descent

Figure 1

Figure 2

Sprites

The monsters/enemies are represented using 2D sprites. This allows us to design the enemies to a greater detail than using 3D models, because the time otherwise spent for creating and animating 3D models can be used for drawing 2D sprites. The emotion we are trying to achieve is anxiety and the enemies should reflect said emotion.
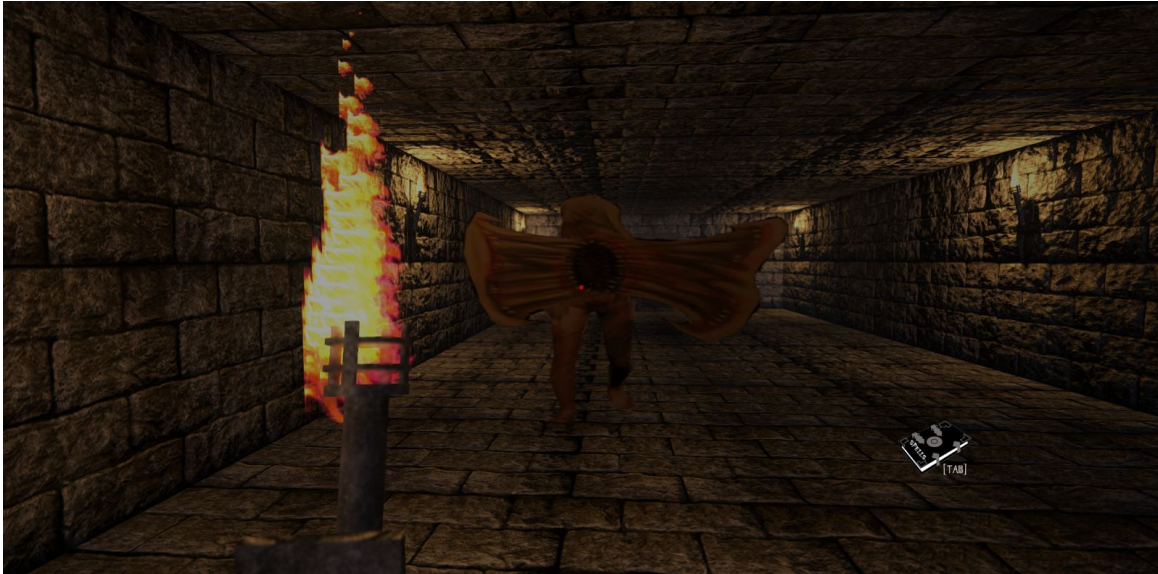
3D models

The clutters/objects within the game world are represented using 3D models, because there are plenty of 3D resources available for free in the Unity Store. The emotion will be conveyed using the lighting technique instead of the 3D model itself which is dark, damp and dank. By robbing the player of his/her sense of vision, this will surely create a feeling of anxiety.

Theme – Auditory Style

We are aiming to create brooding and atmospheric music within the game. Doing so will hopefully create an authentic feeling within the game which will benefit the player experience. Sounds effects within the game will be primitive in nature and will consist of things such wind, rocks crumbling , scraping metal, mournful cries, etc. This will make the environment more believable which in turn will make the game itself more immersive experience.

Conclusion

The game has plenty of potential, the reason being that the game combines aspects from other games that had already been proven before in the market, namely; 'Zork' and 'The Legend of Grimrock'. Recreating the exciting discovery experience of text-based adventures or point and click games in general while still keeping the RPG elements intact. We are sure that this combination has never been done before and surely will appeal to both younger and older audiences alike! Please throw your money at us! Participate in this gamble!

TECHNICAL DESIGN DOCUMENT

Target Hardware
Arcane writer is planned to be released on PC Platform, on a second time for Mac.
The entire game will be developed on PC.

Development software

1. **Unity 5:** a middleware engine and toolset from Unity Technologies it has considerably changed since the previous version, Unity 4. The team is already versed in using Unity.
2. **Photoshop CC**: graphic design toolset perfect for texture and creation, logos and overall static graphics necessary in the game development.

Programming Language
After evaluating our programming team skills and capabilities, we have decided to adopt c# as our programming language.
The tool collection software that will be used by the team's programmers are:
- Visual Studio
- Monodevelop

Artificial Intelligence

Artificial Intelligence will be separated into two main parts:
- In Combat AI
- Out of Combat AI

In Combat AI: it is applied to NPCs that engage the player during an hostile encounter.
It will be regulated by the combined factors of indexes randomisation and "cause and effect" response.
Out Of Combat AI: it is applied to NPC's that have not yet engaged the player in combat or right before it (i.e during chase). It will be regulated by the combined factors of indexes randomisation and static scripting.

AI State Machines

Prison Guard

STATE	Description	Condition
Idling	Prison Guard stands stationary playing idle animation.	Prison Guard has no destination.
Waiting	Prison Guard is standing in a queue or waiting for: - the player to trigger an alarm.	Prison Guard needs another task to be complete before it can start searching for the player.
Searching	Prison Guard is walking or standing randomly to find his destination. Upon seeing it, Prison Guard stops searching and switches to Navigating.	Prison Guard does not know where target destination is.
Navigating	Prison Guard is moving to a destination.	Prison Guard knows location of target destination.

Third-Party Libraries

iTween: iTween is an interpolation system that takes one value and animates it to another over a given amount of time.
Developed by Bob Berkebile of Pixelplacement.
Fully coded in c#.
It is fully compatible with our version of Unity (5.3.3) and is a tool familiar to the programmers of our team.

PlayMaker: PlayMaker is a visual scripting tool for Unity, essential tool for game designers who may not necessarily have a good good knowledge of coding in c# or java.
Developed by Hutong Games.
It is fully compatible with our version of Unity (5.3.3) and is a tool familiar to the game designers of our team.

Code Overview

It is expected that all code will be properly commented and indented, following agreed standards discussed at the beginning of the project.

Development procedures and standards

Our team is composed by 2 programmers, the tasks have then being shared in two:

1. Environment Interaction:
   a. Player First Person Controller
   b. Input Window for environment interaction
   c. Consequence action from input inserted
   d. Traps / levers / doors mechanics
   e. Enemy AI out of combat

2. Combat System:
   a. Enemy AI in combat
   b. Turn based system
   c. Health / damage assessment
   d. Combat UI

Other aspects of the programming area of the game will be left "in the middle", as being low priority for the early stage of development, those tasks will be carried on by the programmer who finds himself ahead of his prioritary tasks:

- Main Menu
- Options Menu
- Sound Implementation
- End Game

Technical Risk Matrix

This is a list of all the key design risks and their level of priority to help to minimise them.

Game Feature	Description (if unclear)	Risk	Value	Priority
First Person Controller	The player must be able to control the avatar in the 3D environment, jump is not required	Low	High	1
Interactable Environment	The player must be able to activate an input window whenever a specified object on the environment is interacted with	Medium	High	2
Traps	Traps must trigger when a certain condition is met. The player must be able to deactivate or be able to avoid the traps.	High	High	3
Spells	The player must have a set of spell to counter the effect of traps, interact with the environment and fight enemies.	High	High	4
Multiple Enemy Types	At least 2 different enemy types must be included in the game on release.	Medium	Medium	5
Inventory	An inventory system should be included to	Medium	Medium	6

	better show the player the items has been collected (for spells too)			

Game Engine

The development will be executed on Unity 5 game engine, version 5.3.3, available with a free licence to commercial entities with annual gross revenues (based on prior fiscal year) lower than US$100,000.

System Requirements

<u>MINIMUM:</u>

OS:	Windows XP Service Pack 3
Processor:	Dual Core 2GHz Intel or 2.8GHz AMD
Memory:	1 GB RAM
Graphics:	ATI Radeon X1600 or NVIDIA GeForce 7600 or better 256MB graphics memory or more.
DirectX®:	9.0c
Hard Drive:	2 GB HD space
Sound:	DirectX 9.0c compatible

<u>RECOMMENDED:</u>

OS:	Windows Vista or Windows 7
Processor:	Quad Core 2.66GHz Intel or 3.2GHz AMD
Memory:	4 GB RAM
Graphics:	ATI Radeon HD 2900 or NVIDIA GeForce 8800 or better.
DirectX®:	9.0c
Hard Drive:	2 GB HD space
Sound:	DirectX 9.0c compatible

Graphics

Because in the team we don't have anyone we appropriate skills in 3d design, we decide to keep 3d asset development to a minimum, and instead trying to relay to assets available in the asset store. It will be necessary, however, to modify and manipulate those assets to better fit our project's design standards, as why we decided to use the following softwares that best fit our skills:

- Photoshop CC
- 3DS Max
- Blender

Audio

The main software used for audio manipulation and creation is Reaper, a digital audio production application for Windows and OS X.