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Project Members

Harry Knight (C00298918), Rebecca Hollidge (C00300511), Adrian Gagarinov (C00300839), Serghei Vidrasco (C00298944)

Title Page

Knight Game

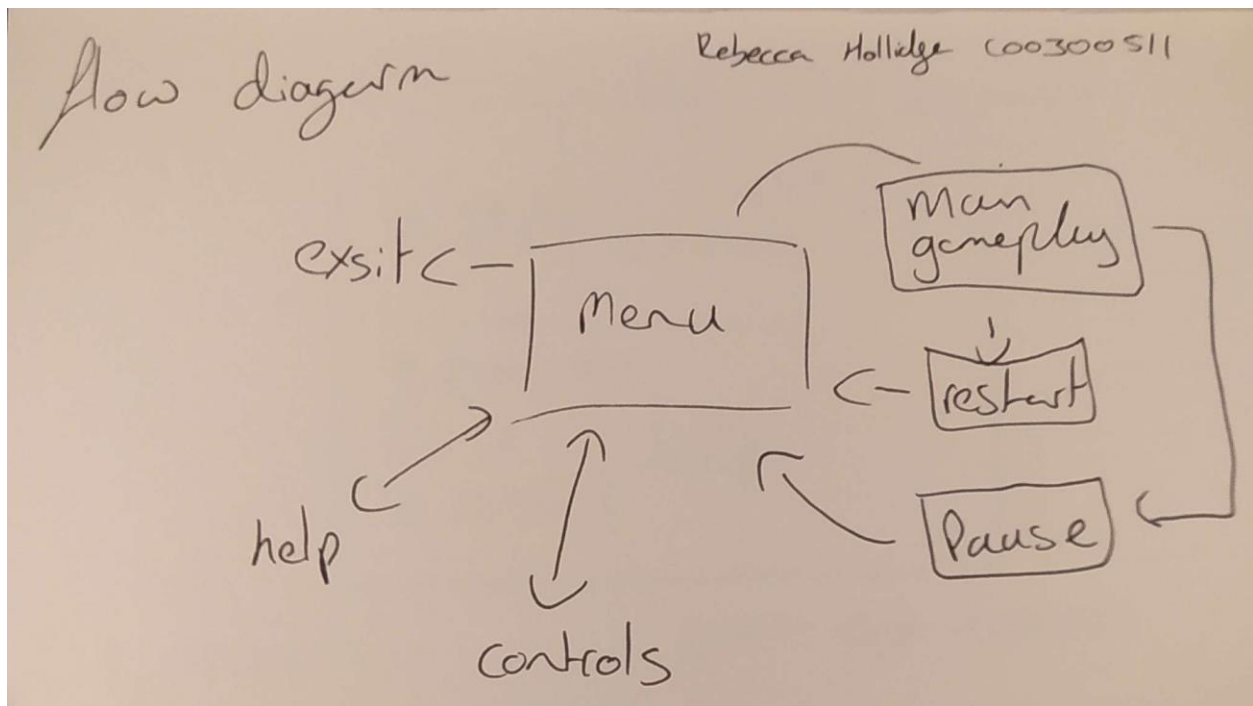
Ver 1.0

Screen Layout & Interaction

(Rebecca Hollidge (C00300511), Harry Knight (C00298918))

Screen Flow diagram

(Rebecca Hollidge (C00300511))



Splash Screen

(Harry Knight (C00298918))

The splash screen will show when the game is first opened and will have a text message at the bottom of the screen telling the player to press the space bar to continue. When the player presses the space bar the splash screen will close and open the main menu.

Game

(Harry Knight (C00298918), Serghei Vidrasco (C00298944), Adrian Gagarinov (C00300839))

Base Game Description

(Harry Knight (C00298918))

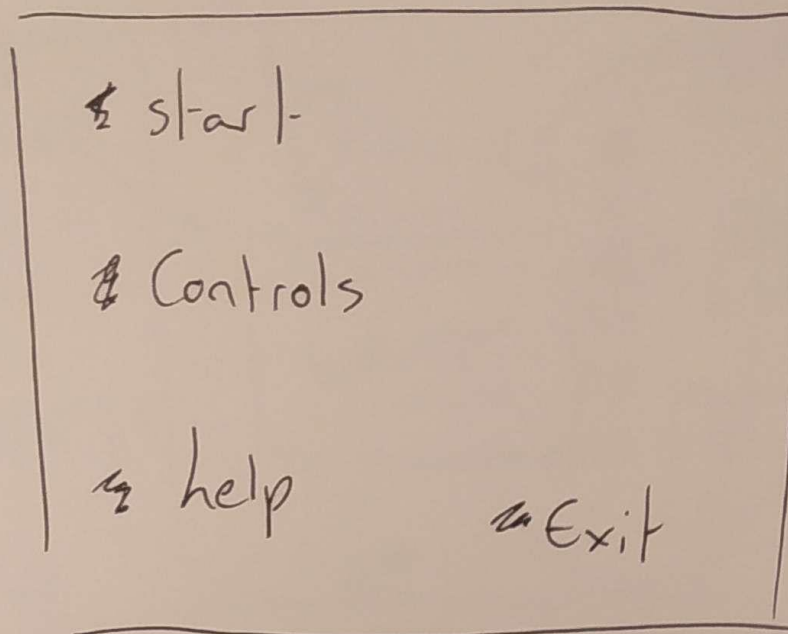
The game starts with the character in a forest setting. The player can control the character with the arrow keys and can attack by swinging their sword with the “z” button, on the contrary the player can defend with the “x” button, this will bring up a shield and push enemies back. The player can move in the defensive state but will not be able to attack. The player can shoot magic fireballs with the “s” button, the fireballs will travel in the direction the player is facing. There can only be one fireball on the screen at one time. The character has a horse summon, which can be spawned in with the “c” button. As the “c” button is pressed the character will make a whistle noise. While the player is on the horse summon, the player cannot defend with their shield but may attack with their sword. The player can dismount the horse by pressing the “c” button once again. The user can access a menu where the user can purchase cosmetics for the player such as sword damage upgrades, armour upgrades, horse mount upgrades, etc. The user can open the menu by pressing the “m” button and close the menu with the “m” button again. The menu will be navigated with the mouse. Throughout the map there will be bags of gold that can be collected by the player through interaction, the amount of gold received will be a random integer from a scale of 5 to 20 inclusive. The character will have a level up system that will max out at level 5, the character can level up by murdering a certain number of enemies, each level will have a different requirement of enemies killed for level up (the higher the level the more enemies killed needed). The player can interact with a shopkeeper by pressing the “n” button and buy new armour with higher defence stats, better sword with higher attack stats, a book to boost the magic stats or allow more fireballs on screen, the shop GUI can be closed by pressing the “n” button again.

Main Menu

(Harry Knight (C00298918))

Menu

Rebecca Hollidge C00300511



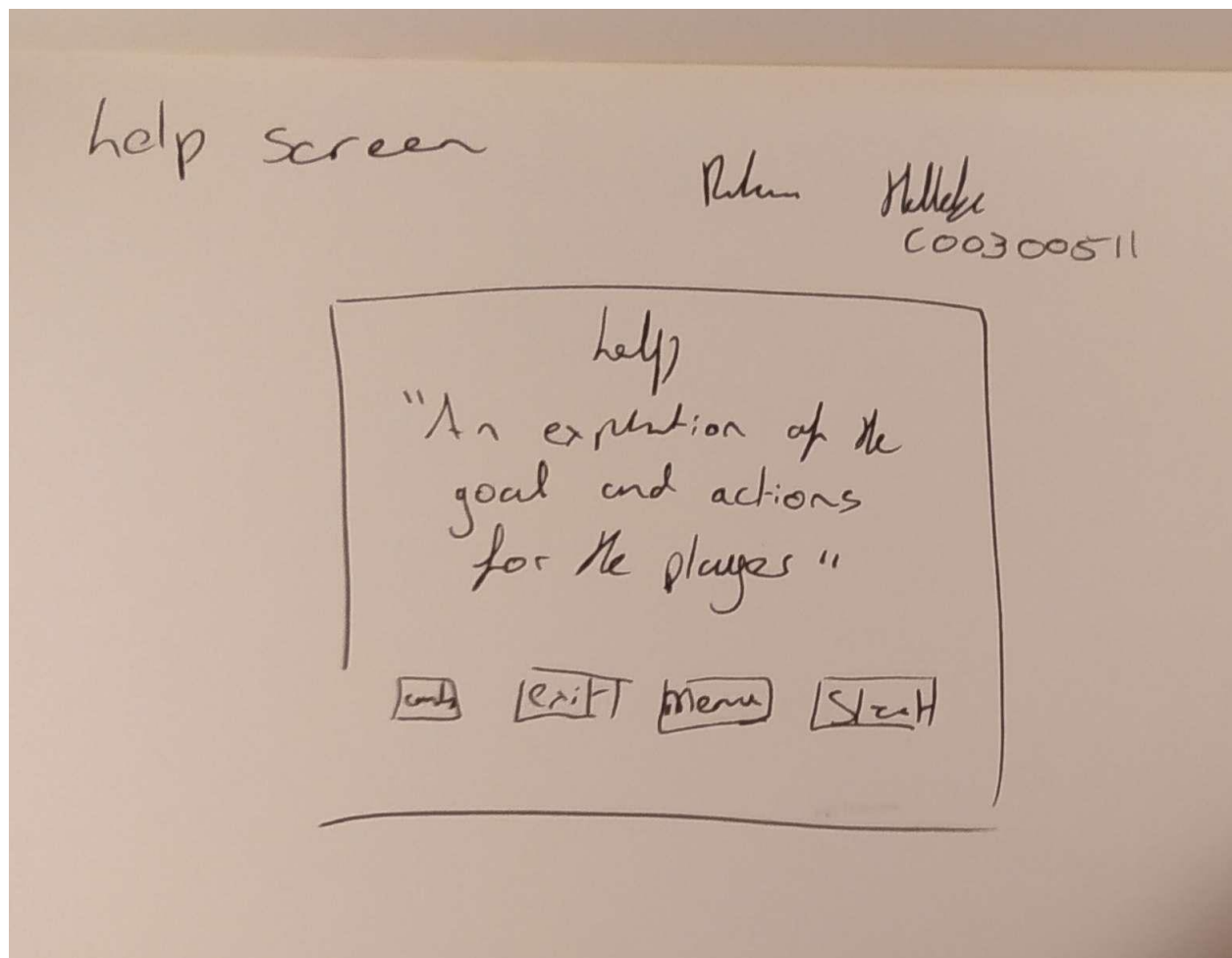
The player will select what button they want with the mouse and when the mouse is hovered over the buttons the button will darken a bit to show the player that they are hovering over it. When the player clicks the button, the button will turn yellow to show the player that they have clicked it.

When the player clicks the button, the corresponding screen will show.

The exit button will close the game.

Help Screen

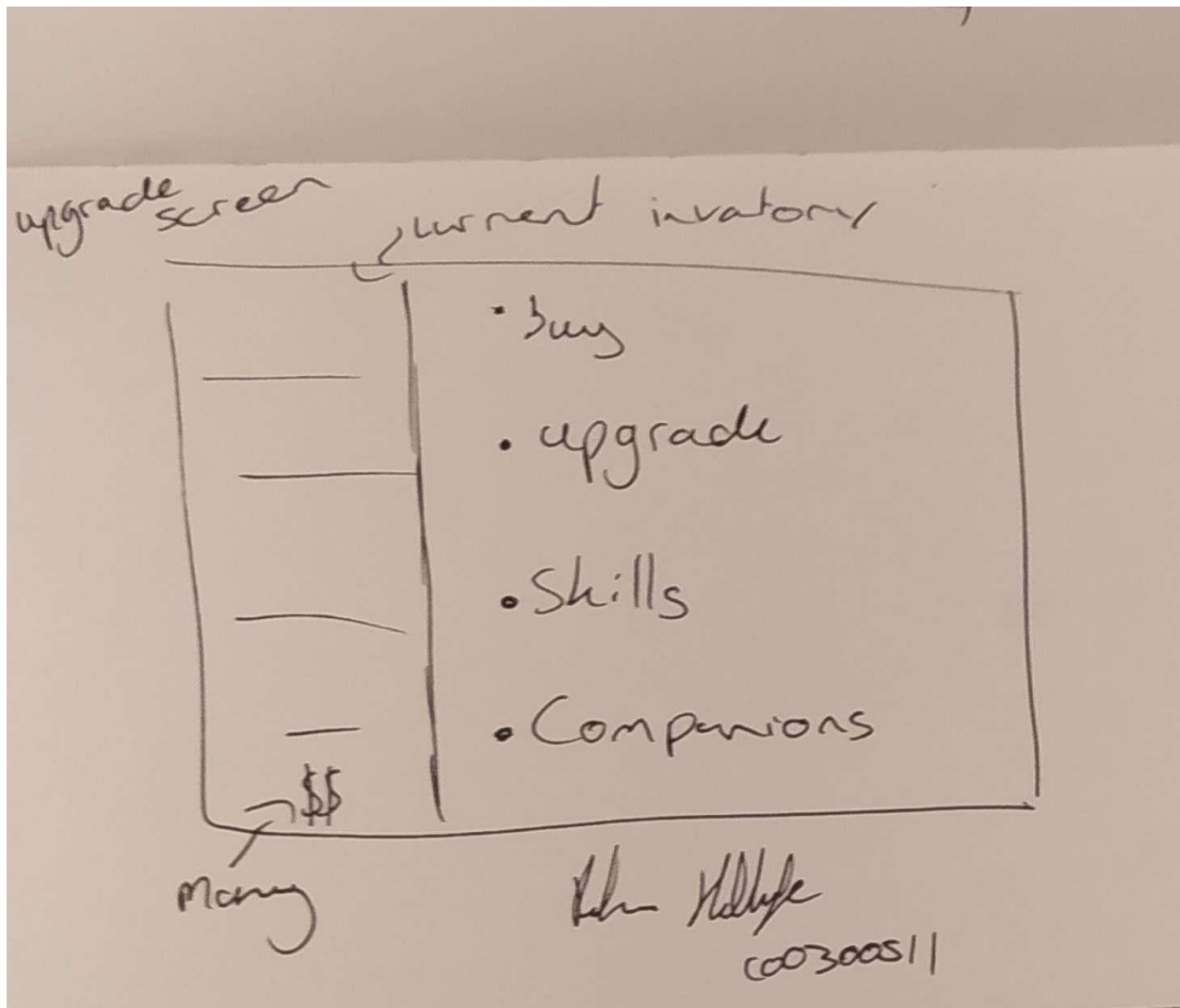
(Harry Knight (C00298918))



The help screen will be divided into 4 sections. Clicking on the tab will bring up the corresponding text on the help page. The exit button will bring the player back to the main menu. The text in the subsections will display useful information to the player and will give all the instructions previously listed in the [base game description](#).

Upgrades

Serghei Vidrasco (C00298944)



Sword upgrades.

Serghei Vidrasco (C00298944)

Inferno Edge:Increases Attack Power + 10

Frostbite Blade:Slows Enemies

Thunderstrike Saber:Increases Critical Hit Chance +5%

Soulreaper Blade:Makes the sword bigger in size + 2.5%

Arcane Blade: increases the attack speed of the sword. + 10

Armour upgrades

Serghei Vidrasco (C00298944)

Adamantine Guard:

Increases Physical Defence + 15

Aegis Enchantment:

Grants cooldown reduction to spell and mount. -5 %

Shadowweave Armor:

Increases speed +5 and adds Evasion Chance.

Mount (horse) upgrades

Serghei Vidrasco (C00298944)

Swiftstride Gear:

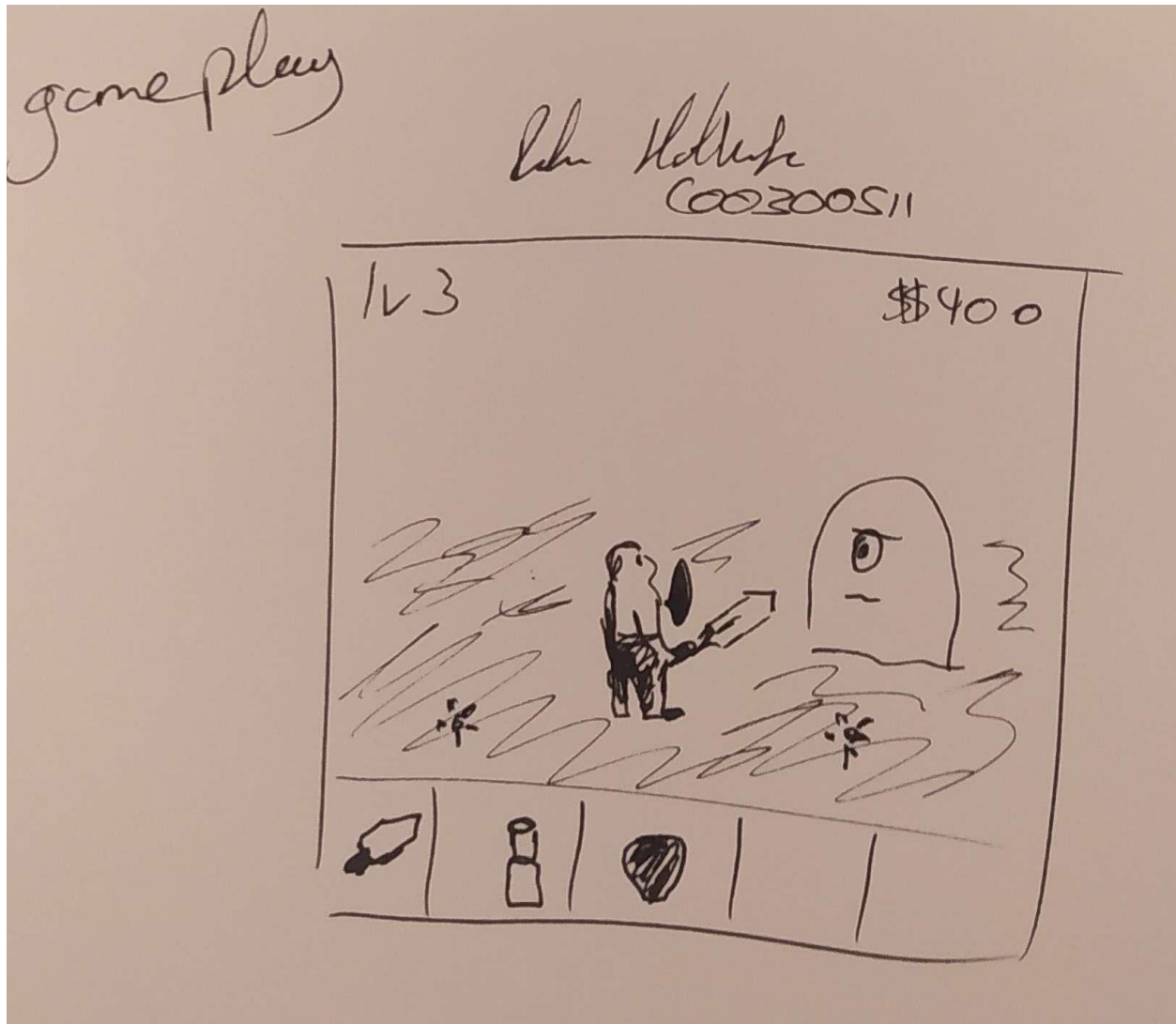
Increases the movement speed when on horse +15

Guardian Plate:

Increases the amount of defence the player gets while on horse +5 %

Gameplay

(Adrian Gagarinov (C00300839))



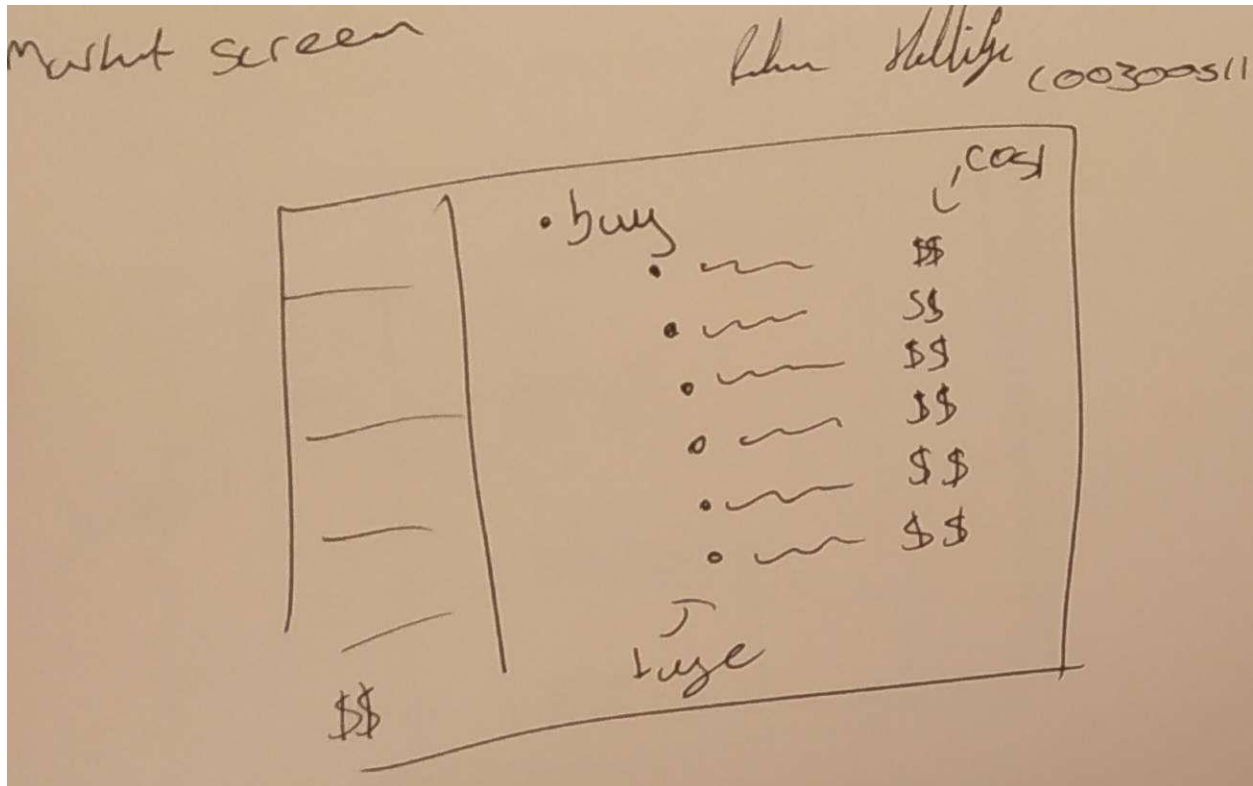
The gameplay screen will display the knight's current location and orientation. The current location of enemies, and their orientation. The location of the dropped items and coins. The health and level of the knight and the amount of gold the player has will be displayed. User input will control the knight with these keys being held down <up arrow> you go up <left arrow> you go left <right arrow> you go right <z> to swing you sword <x> to bring up a shield <c> to summon your horse <esc> open game menu The health of the player will be displayed as a health bar that will go down when hit by an enemy the colour of the health bar will change based on the player health, <green> 80-100 hp, <yellow> 40-70 hp and <red> 39 hp and lower.

When the sword touches the enemy, it will lose hp and make a sound, the player can also break environment like boxes. When the enemy will lose all the hp there will be an explosion, after the enemy death it will drop gold that the player will use to upgrade his

sword, armor and mount, also the player will get item drops that he will pick up and the items will appear in his inventory.

Market Screen

(Harry Knight (C00298918))



The game will display the money in the bottom right-hand corner. The player will select the item they want to buy with the mouse and when the player purchases something the cost of the item will subtract from the total money the player has. If the player purchases an item an item purchase noise will be played. If the player does not have enough money to purchase an item, the said item will be greyed out and will not react to the players mouse input.

Pause Screen

(Harry Knight (C00298918))

The pause screen will display 2 buttons, “Resume” and “Main Menu”. Selecting resume will bring the player back to the game where they left off and the main menu option will bring the player back to the main menu, this will cause all progress to be lost.

Buttons

(Harry Knight (C00298918))

The buttons in this game will activate when the mouse button is released, not when the mouse button is pressed.

Game Systems

Serghei Vidrasco (C00298944)

SWORD

Serghei Vidrasco (C00298944)

The sword will be placed in the players hand so it looks like the player actually wields the weapon and it does not float in the air. The player in this game is able to swing his sword and when the sword hits an enemy it will do a set amount of damage to the enemies plus the damage may be upgraded by buying upgrades in the store or buy a completely new sword from the shop. The upgrades are different, there are upgrades for range damage and speed. The damage upgrade makes the sword deal more base damage, range will upgrade the radius of the sword swing, speed will upgrade how fast the player swings the sword. Plus other swords will have different base stats such as damage speed and range. The sword has a set range not too far from the player so the sword won't be used as a spell. The sword will attack only in front of the player in a cone shape range and every enemy that will be hit by the sword will take damage and be pushed back a little.

Block (Shield)

Serghei Vidrasco (C00298944)

The player can use a shield that will push his foes away if hit by the shield. The shield will be created around the player at a set range not far from the player and every monster (enemy) will be pushed away from the player if it enters the radius of the shield. The shield is not infinite and the player won't be able to use it for an infinite amount of time, the player will only be able to use the shield for about 1.5 seconds. Plus after using the shield the player will have to wait about 2 to 3 seconds to be able to use the shield again. When the shield is activated the player is unable to swing his sword and his speed will be decreased by a little.

The shield will not deal any damage to the enemies, it will only push them away from the player

Shooting (Fireballs)

Serghei Vidrasco (C00298944)

The player is able to shoot fireballs that upon colliding with the enemies will explode and deal damage in the area of the explosion plus it will put the enemies that were hit on fire doing over time damage. All enemies in the range of the explosion will be damaged. The fireball will travel at a set speed and will deal damage for a set amount. The player can not use this ability without stopping, the fire ball will have a 2.5 to 3.5 seconds cooldown so that the player won't be able to spam the ability. The fireball will travel until it hits an enemy or hits the border of the screen. The fireball can be upgraded at the shopkeeper.

Summon (Horse)

Serghei Vidrasco (C00298944)

If the player uses the key 'c' he will be able to summon a horse that the player will be able to ride. While on the horse the player is unable to use his shield skill but he can use his sword to attack. When on the horse the player will move faster. If the player wants to get down from the horse he has to press the 'c' key again. The amount of time on the horse won't be infinite and if the time runs out the player will dismount the horse and have to wait for the cooldown to be able to use the horse again(cooldown about 10 seconds). While on horse the player will still take damage but the player will gain a defence increase while on the horse.

The mount can be upgraded at the shop. The upgrades will make it so the player can stay on the horse's back longer plus it will decrease the cooldown on the horse summoning. While on the horse if the player collides with an enemy the enemy will be pushed back but the player will take damage.

Menu

Serghei Vidrasco (C00298944)

The menu can be accessed by pressing the key 'm' and closed by pressing the same key.

The player has access to a menu where he can purchase upgrades for his sword, horse, and armour (including the shield). The menu will be navigated using the mouse and the player will be able to choose an upgrade for what he needs. To buy these upgrades the player will need a currency that the player will find all over the map inside of bags. The amount of coins in the bags will be between 5 to 10 coins per bag.

The upgrades in the shop will increase the damage of the sword, the defence of the armour and the mount horse like his speed and cooldown.

While the menu is open the time will freeze so the player won't take damage when choosing what to get.

Shopkeeper

Serghei Vidrasco (C00298944)

The player is able to interact with the shopkeeper where the player can buy new equipment like new

Swords: better swords that deal more damage and have better overall stats

Armour: armour that gives the player better defence

Spell books: basically fireball upgrades that will make the fireball more powerful by adding more damage to it or increasing its size and explosion radius.

Levelling (lvl)

Serghei Vidrasco (C00298944)

When the player will kill an enemy a certain amount of experience (exp) will be attained by the player which will increase his overall level. The maximum level of the player will be 5 and when the player will reach this level cap the exp will not increase the player's level. The more the player levels up the more exp is needed to level up. With every level up the player will increase his stats by a bit.

Lvl 1: will give the player a + 5 in every stat,

Lvl 2: will give the player + 10 in every stat plus unlock something new for purchase in the menu and the shopkeeper,

Lvl 3: gives the player new equipment at the shopkeeper,

Lvl 4: gives the player +20 to all stats,

Lvl 5: unlocks new equipment at the shopkeeper.

Game Assets

(Adrian Gagarinov (C00300839))

Audio Assets

(Adrian Gagarinov (C00300839))

Menu music
Button click
SFX Menu select
SFX Menu navigate
SFX Error notification
SFX Confirmation SFX
Ambient background music
SFX Footstep
SFX Attack
SFX Enemy attack
SFX Damage taken
SFX Level up fanfare
SFX Item pickup
SFX Quest completion
SFX Teleportation
SFX Mount gallop
SFX Explosion
SFX Inventory open/close
SFX Mounting
SFX Skill activation
SFX Weather effects
SFX Victory fanfare
SFX Defeat
SFX Level transition
SFX Shop interaction
SFX Currency exchange
SFX Art Assets

Art Assets

(Adrian Gagarinov (C00300839))

The Knight
Knight movement animation
Sword swing animation
Teleport animation

Skill sprite
Skill use animation
Enemy animation
Explosion animation
Enemy sprites
World sprite
Sword sprite
Armor sprite
Health bar sprite
Mount sprite
Mount animation
Upgrade menu sprite
Level sprite
Gold sprite
Enemy animation
Enemy shooting animation
Enemy charge animation
Shield sprite
Shield use animation

Class Diagrams

(Adrian Gagarinov (C00300839))

Class player

(Adrian Gagarinov (C00300839))

Int level;

Int health;

Int damage;

Int speed;

Bool mounted;

Bool hasShield;

Int shieldDefense;

Std::vector<Skill> skills;

```
Void levelUp();  
Void attack();  
Void mount();  
Void gain speed();  
Void gainSpeed();  
Void useSkill();  
Void equipShield(int defense);  
Void useShield();  
Void learnSkill(const Skill& skill);  
Void useSkill(int index);
```

Class inventory

(Adrian Gagarinov (C00300839))

```
Void addItem();  
Void removeItem();  
Void moveItem();  
Void displayInventory()
```

Class enemy1

(Adrian Gagarinov (C00300839))

```
Int health;  
Int speed;
```

Int damage;

Float enemy1spawnchance;

Void attack();

Void move();

Void takeDamage();

Bool isAlive();

Void enemySpawn();

Class enemy2

(Adrian Gagarinov (C00300839))

Int health;

Int speed;

Int damage;

Float enemy2spawnchance;

Void explode();

Void move();

Void charge();

Void takeDamage();

Bool isAlive();

Void enemySpawn();

Class enemy3

(Adrian Gagarinov (C00300839))


```
Int health;  
Int speed;  
Int damage;  
  
Float enemy3spawnchance;  
Void shoot();  
Void move();  
Void takeDamage();  
Bool isAlive();  
Void enemySpawn();
```

Class GameMenu

(Adrian Gagarinov (C00300839))

```
Enum class MenuItem { Play, Options, Exit };
```

Class UpgradeMenu

(Adrian Gagarinov (C00300839))

```
Int gold;  
Int swordLevel;  
Int ArmorLevel;
```

Int mountLevel;

Void display;

Void buySwordUpgrade();

Void buyArmorUpgrade()

Void buyMountUpgrade()

Class World

(Adrian Gagarinov (C00300839))

World();

Void update();

Void render();

Void spawnEnemies();

Bool checkCollision(const Player& player, const std::vector<Enemy>& enemies);

Bool isMapFinished();

Void increaseEnemyLevel();

Bool mapFinished;

Int enemyLevel;

Int remainingEnemies;

std::vector<Enemy>& enemies;

Images

(Rebecca Hollidge (C00300511))

Market screen

John Heltig (00300511)

[illegible]

upgrade
screen

current inventory

_____	• buy
_____	• upgrade
_____	• Skills
_____	• Companions

→ \$\$	

money

the Hallye

00300511

help screen

Return

Help

C00300511

help

"An explanation of the
goal and actions
for the player"

Back

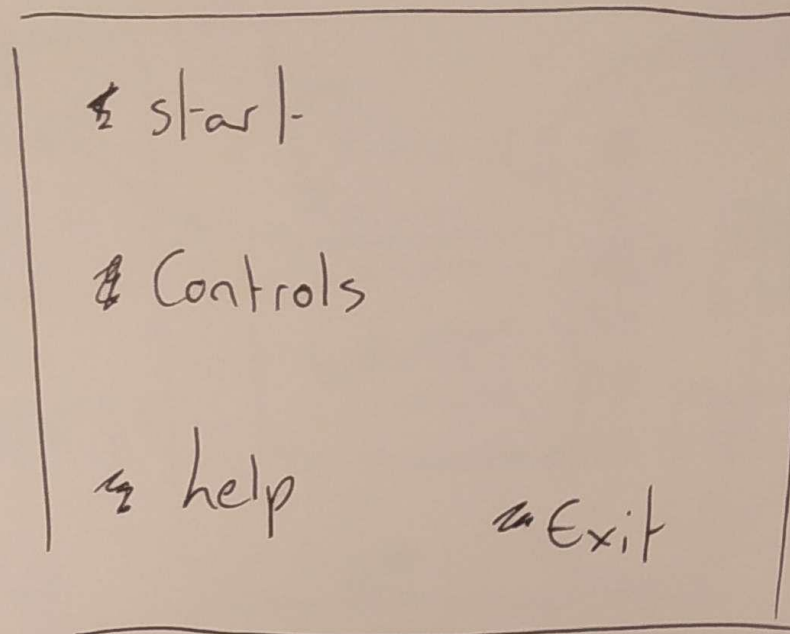
Exit

Menu

Start

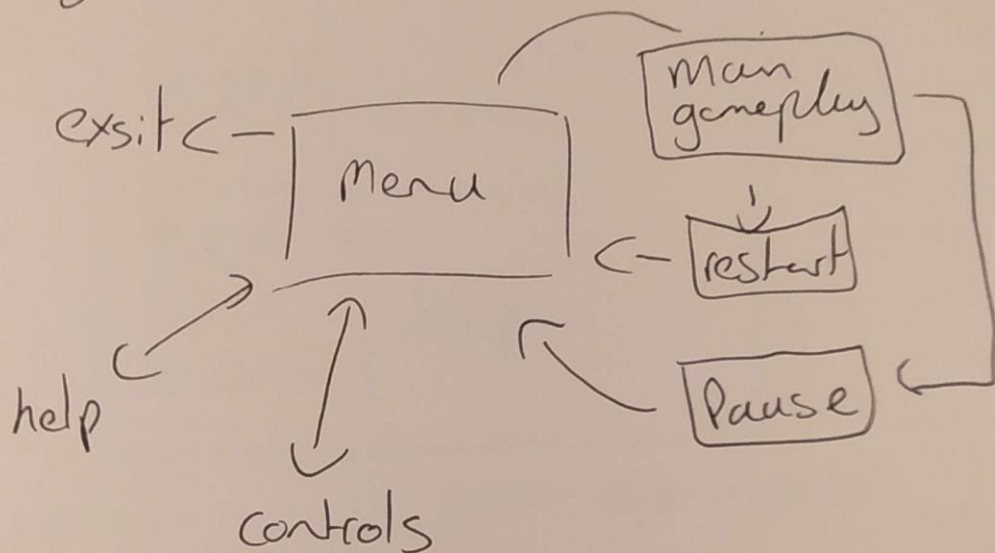
Menu

Rebecca Hollidge 00300511



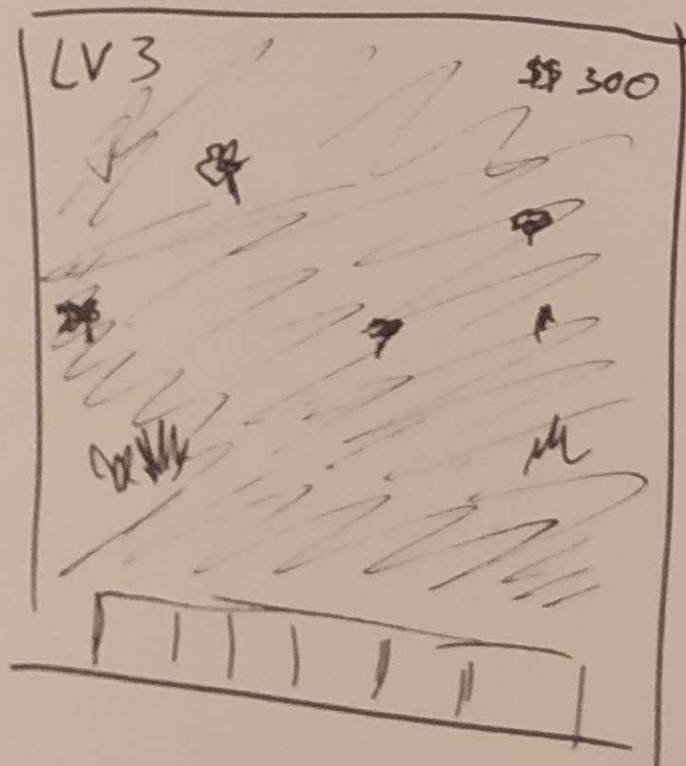
Flow diagram

Rebecca Hollidge 00300511



Map

Ruben Nakkege
Caes300511



game play

John Hollister
C003000511



John Helmer
00300511

