Design Document

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Contents

1   Design Brief

The task that has been given is to create a choose your own adventure game using a series of interconnected web pages. The final deliverable will use HTML, CSS and JavaScript and use elements such as text and sound with possible addictions of images and gifs to create and mould the webpages together. The style of story will be of a cyberpunk setting which was decided upon after coming across a nifty looping sound clip.

   To game will feature multiple paths, small scale turn based combat, inventory and a health bar and random elements which decides if a fight would incur or if the player activated a trap which with the risk and award being based on the players choice.

   I hope combat can be achieved by using one page for the combat which throws up a random scenario depended on a random number generator. If it is not possible to use a random number generator then I will instead attempt to use the system clock of the users machine or some other method of obtaining the current time to create something that is for our purposes can be considered random.

   Sound will also be a present throughout with the game using sound clips from freesound.org that will allow the site to have separate sound loops for the regular HTML text webpages and the fight encounter webpage.

   Localstorage is used within the site to allow the inventory of the current session to be maintained when navigating the site as well as allow the battle webpage to point the user to relevant webpage after the battle encounter. The plan is for the localstorage to hold a list containing integer numbers that correspond to progress within the story, what/how many items the player currently hands, if the player is currently in god mode and the current colour scheme that the web pages will be displayed in. Naturally this localstorage will be deleted upon completion of the game and upon defeat in a fight encounter. For clarification god mode here will be invulnerability to allow the game to be explored without having about difficulty.

   JavaScript will be used to allow the user to manipulate the inventory menu with the data from local storage and conduct the turn based battles. It will also allow us to implement the ability of the user to switch both the

background and text colour by calling a different CSS page depending on what's held on local storage.

The design for the site is for the workload can be scaled up or down based on progress with only three distinct HTML pages needed to be created with additional web pages being created based on the story page with different story related text and options.

2 Background Research

Localstorage is an aspect of the design that included research into a method to pass data from one HTML page to another without access to a server to back data up to which I was more accustomed to with using Python Flask for establishing a web site. This research discovered the why localstorage is a good method to pass over and data and details into how localstorage can be implemented.

Research into audio loops has also been done allowing the site to have background sound to add atmosphere. More research needs to be done to see if the audio can be maintained between different pages with the HTML Inline Frame element i.e. ¡i-frame¿ being an interesting topic of research to achieve this goal. This however could drastically change the layout of the story portion of the website as this brings forth the idea of all the HTML pages that make up the story being called within an ¡i-frame¿ on one HTML page that hosts the audio file that loops throughout.

3 List of Features

List of features that the game will have are below.

- Navigation between different HTML pages giving the player the choice of how to continue the story.

- CSS to style the text and for a darkmode to be default i.e. black background with white text. However other choices will be implemented.

- Button that on hit will show a drop down box allowing the user to switch between different preset styles.

- The loot and the specifics of the battles besides the final boss will be randomised.

- Health Bar.

- Inventory and abilities that persist within the current game session and reset on death.

- Battle mechanics as well as a final boss fight.

- Sound loops to increase the sense of atmosphere in the game.

- A button that allows the player to quit their current session and return to the welcome page.

4 Navigation Tree

As we can see from appendix A the site layout will start with a welcome page which will link to the first of the story pages. As the story will have multiple choices everything within the dashed box that states story is subject to change. Either way each page will be linked back to the welcome page and most of them will have a link the battle page which will link back to the relevant pages within the story as well as to restart the game.

5   User Interface

The game will feature a grid-view approach to the user interface that will allow for two layouts depending on if the users screen has enough horizontal screen space and converting to a vertical layout if not.

In appendix B we see an example of what the layout of the main story portions of the game looks like on a horizontal screen which shows that the layout consists of a heading at the top, three boxes split into columns in the body of the page. The three columns that take up the middle will be as follows:

- Left - Inventory and health bar

- Centre - Story text and choices

- Right - Buttons that can restart the game, change the CSS style sheet currently being used.

This layout allows us to best use the screen space that is afforded to us and fit all elements onto one page.

Within appendix C we can see the vertical layout of the same page which with the a header on top and the story text and choices below. The inventory and buttons that were on the right hand side of the screen are now accessed through hamburger menus at the top of the screen.

The reason to place the inventory and other buttons within a hamburger menu is to prevent the excessive vertical scrolling that would be needed to see these other options.

The horizontal version of the battle screen can be seen in appendix D which shows a layout similar to the story layout. The differences here are that the column on the right hand side will be be for the enemy name, health and stats. The health bar should be align with the players health bar. Underneath the heading will be the stats for the player. Please keep in mind that so far stats will only be attack damage, armour and accuracy. The remaining space in the middle will be used to display a quick description of the encounter and the battle actions. The actions will include attack and

run. The return option will be placed on the top right of the screen within a hamburger menu along with the style change option.

The vertical version of this screen will have all health and stats squeezing onto the screen with the player health and stats aligned on the left side of the screen while the enemy health bar and stats are aligned on the right. The actions will be placed below the stats. Any story text will be placed within the hamburger menu along with the inventory menu and other options that are in the horizontal version. This can be seen in appendix E.

In appendix F we see the welcome screen which will be the first thing the player sees and contains a heading and some text below. Below the text will be a button to start the game. On the right hand side will be the style change option and a check box to enter the new game with god mode enabled.

6   Additional Info

As mentioned, localstorage will be used. The data stored will be a list filed with integers. These placement of the numbers within the list will be interpreted with the JavaScript to designate the current inventory and amount of each items, story progression and if god mode is activated.

The story while not concrete will be a typical cyberpunk setting. The emphasis of random elements and scalability of the story within this choose your own adventure game takes influence from roguelike games. The story will have a focus on text and story progression with battles being part of the risk/reward of certain options within the story with the risk being the battle and reward being items to help progression.
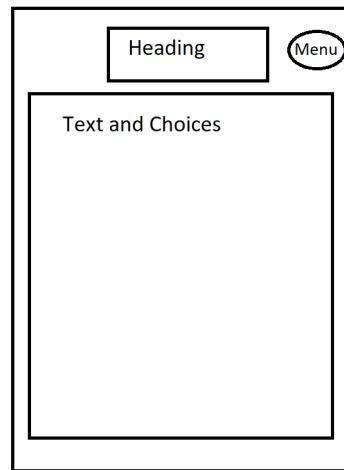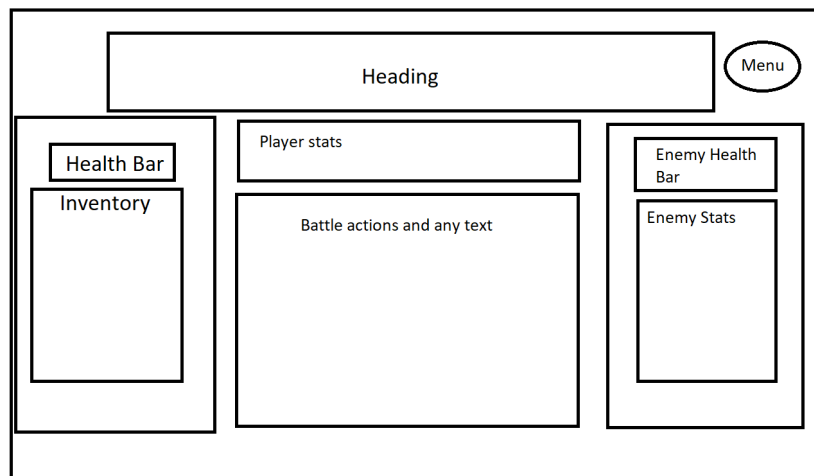
A Network diagram
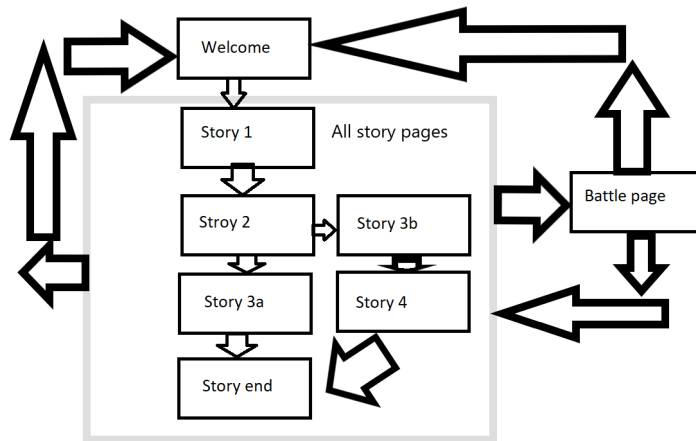
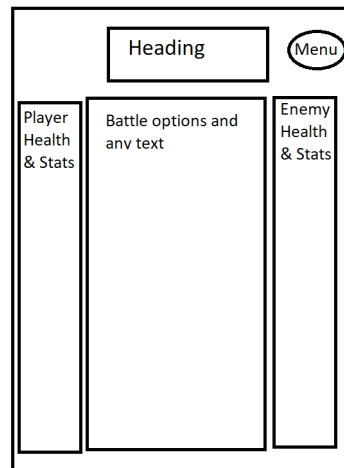
B Horizontal story layout template
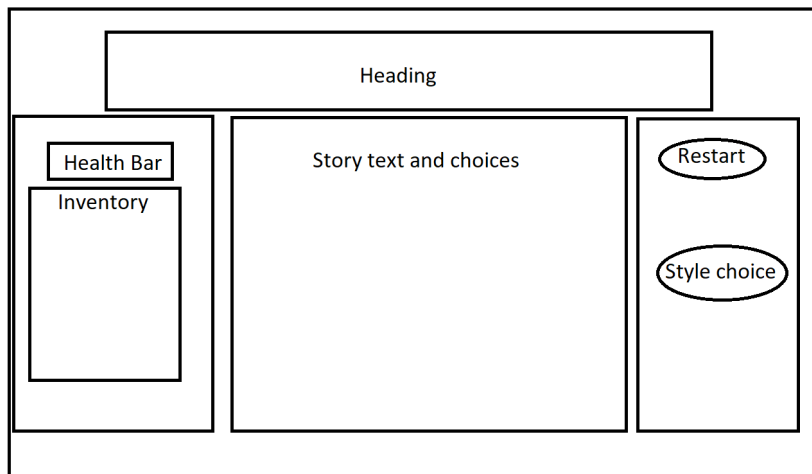
C Vertical story layout template

```
┌─────────────────────────────────┐
│   ┌───────────────┐   ╭──────╮   │
│   │    Heading    │   │ Menu │   │
│   └───────────────┘   ╰──────╯   │
│   ┌───────────────────────────┐  │
│   │ Text and Choices          │  │
│   │                           │  │
│   │                           │  │
│   │                           │  │
│   │                           │  │
│   │                           │  │
│   │                           │  │
│   └───────────────────────────┘  │
└─────────────────────────────────┘
```

D Horizontal battle screen

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┌──────────────────────────────────────────────────────────┐
│    ┌──────────────────────────────────────┐   ╭──────╮    │
│    │              Heading                 │   │ Menu │    │
│    └──────────────────────────────────────┘   ╰──────╯    │
│  ┌───────────┐  ┌─────────────────┐  ┌──────────────────┐ │
│  │┌─────────┐│  │ Player stats    │  │ Enemy Health     │ │
│  ││Health Bar│  └─────────────────┘  │ Bar              │ │
│  │└─────────┘│  ┌─────────────────┐  └──────────────────┘ │
│  │ Inventory │  │ Battle actions  │  │ Enemy Stats      │ │
│  │           │  │  and any text   │  │                  │ │
│  │           │  │                 │  │                  │ │
│  └───────────┘  └─────────────────┘  └──────────────────┘ │
└──────────────────────────────────────────────────────────┘
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E   Vertical battle scree

F   Welcome screen