## AWT

## Introduction

The aim of this assessment is to design, create and evaluate a web application using python flask microframework. The website being designed will be an adventure game based on a murder mystery story.

## Description of Site

The murder mystery website will follow a text-adventure game format. The standard approach for this is to have the user input text or select decisions to control a character or the environment around it (Rollings & Ernest, 2010). In this case, the user will follow a murder mystery story and, depending upon their responses, will determine how the rest of the story is played out. There will be a forum page for users to discuss their own game experience and share their own choices they made. This will also mean setting up user profiles to enable people to communicate about the game as well as save their progress on the game.

## Background Research

### Python Flask

Flask is a microframework written in Python as it does not require libraries or tools to use. As the aim of the module is to develop a better understanding of the language and to demonstrate it by producing a server-side web further reading was undertaken (Ronacher, 2013). Firstly, following the workbook provided for the module allowed for initial use and insight into the language. Then looking at applications already created by others - which were similar to the goal of the murder mystery website, in python flask allowed for a further understanding of the language (“adventures-in-text”, 2013).

### Bootstrap

The website will be designed using templates for writing (i.e. writing font and size), buttons and navigation. Bootstrap is a free and open-sourced CSS framework which simplifies the development of web pages. It adds a variety of choice such as colour, size, layout of the page and the font (Otto, 2019). Bootstrap will be suited for the development of this website as it is responsive and easy to use, making it ideal for a game.

### APIs

An Application Program Interface (API) is an interface between a client and a server. When a client makes a request to the web server (or client), it gets a response back in a specific way or as a defined action (Braunstein, 2018). A RESTful API is an application interfaces that uses HTTP requests to GET, POST, PUT and DELETE data for web services. Requests made by the user on the website will, in the context of this website, elicit a response from a HTML file (Fielding, 2014). Additionally, RESTful are reliable, so if there is failure between the components or data the system should be able to resist as well as being scalable - meaning it can support large numbers of components and the components between them (Wells, 2019). Therefore, API design would be favourable for this website as users will perform actions such as contributing to forums, updating profiles and perhaps deleting or editing comments (Smyth, 2019).

### Cookies

An HTTP cookie, or a browser cookie, is a small piece of data sent from a website and it is stored on the user’s computer browser. They are reliable pieces of software that remember user information (or stateful information) whilst a user is browsing (Vamosi, 2014). For the murder mystery game, the cookies could store information such the decisions made by the user for the game or could be used as authentication for user log ins.

### Textadventures

For inspiration for the murder mystery website, there was exploration into similarly created games online. A popular website for online adventure games is textadventures ("textadventure", 2019). Textadventures is a website which allows users to play and create their own text adventure games and share them with other users. To play games on the site does not require the user to have an account. An account can be created to allow the user save progress on games they play, to interact with other users and the creators of the game, either by commenting on a game or writing in forums dedicated to specific discussions about the game. This website relates to the creation of the murder mystery as the aim of the game is to create a website which allows users to play a game. It also will be designed and created to enable users to communicate on their own performance of the game as well as save their own progress.

To evaluate how similarly created games performed, a top-rated mystery game on the website was reviewed. Called the “Victorian Detective”, by the user peter123, it is described as a detective game which navigates through the streets of London, with the primary investigation being a mugging ("Victorian Detective", 2019). The story is displayed in a text box with choices for the user to select below. Once selected, there are prompts as to whether you made the correct “detective reasoning” decision. The game design is basic and understandable and follows an engaging narrative. The story is all on one page which so when the user makes a decision, it continues beneath making the game easy to follow. The only notable issue would be how the user selects their choice. They are labelled using blue hyperlinks - however other keywords in the story use the same format. This may be an area of confusion for users so it would be more appropriate to make the decisions stand out more. The design of this game would be ideal on the murder mystery website to ensure that the user is able to understand the narrative as well as being interactive- allowing the users to make their own decisions.

## Features

### Text-Based Game

The main feature of the website will be the game itself. A user will be able to access the website and play the game, with or without an account on the website. Based on the options the user has selected will determine their outcome and their reward. The game itself will be set in a casino, inspired from a Murder Mystery game plot already published online (Breen, 2011).

### User Profile

To be able to save their progress on the game, users will be required to make their own accounts. By collecting an email, a username (or a name they wish to be called in forums and comments sections) and a password for each user creating an account, will allow users to have their own unique login. By collecting an email- which is already a unique attribute - will ensure that user-emails are not duplicated by comparing them to already created user accounts.

### User Forum and Interaction

By creating a user account creates an opportunity between interactions of users. Whether it being on a forum or discussion post on the site or in the comments section of the game. There would be opportunity to expand user interactions to include “likes” or “dislikes” on both the game and on other topics that have been posted.

## Website Implementation

### Navigation Tree

A screenshot of a social media post

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Image 1. Navigation Tree for the Murder Mystery Text Game

The site navigation will be simplistic (see Image 1). A user can play the game regardless of having an account. Therefore, from the home page their will be an option to either play the game, create an account or login. If the create an account option is selected the user can then create an account, then will be taken to the log in page. Once logged in the user will be able to access the game (which will allow them to save their progress), view their user profile or access the forum where they can comment.

### Administration

Responsibility also falls on an administrator to maintain the website, for example, fixing bugs and enhancing the website. Website administration can involve managing user accounts, maintaining web servers, log analysis and most importantly web security. If a website is not secure it is liable to be attacked by hackers to gain access to user information with malicious intent ("Website Administration", 2019). Therefore, administration will be an important aspect of the website as it will allow the administrator control over the user profiles, for instance, if a user breaks terms and conditions they can be removed. Additionally, they will be able to sort any problems with the website itself.

### Database

To store this user data will require a database. SQLite3 is an easy to use database which already includes in built support in Python (Python Central, 2019). An advantage of using a database to store user information is that it can also be persisted. Meaning, that the user’s information will be stored in a secure place-until the account deleted (Alsultanny, 2010). Therefore, the website will be able to save a user profile, authorise a log in (by comparing it to data in the database) and save the progress of a game (when a user is logged into the website).

## User Interface

### Website Design

The overall website design has been kept simple and minimalistic (see Appendix 1). This is to ensure that all the important elements are clearly labelled. For instance, the header will contain the key buttons to allow the user to switch between pages easily. By keeping a similar format between the pages allows easy navigation and understanding.

### Website Design

A screenshot of a cell phone

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Image 2: Initial Colour Scheme and Design of the Website

## Appendices

### Appendix 1

Wireframes of the initial Murder Mystery Website design (see images 3-8).

A screenshot of a cell phone

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Image 3: Home Page

A screenshot of a cell phone

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Image 4: Create an Account Page

A screenshot of a cell phone

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Image 5: Log-In Page

A screenshot of a cell phone

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Image 6: Game Page

A screenshot of a cell phone

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Image 7: User Forum Page

A screenshot of a cell phone

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Image 8: User Profile Page

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