Digital Technologies & Hangarau Matihiko 3.8A

Level 3, 6 Credits, Internal Assessment

Student Documentation

This document serves as evidence of your work for **AS 91901: Apply user experience methodologies to develop a design for a digital technologies outcome**

# Introduction/Kupu Arataki

This assessment activity requires you to plan, develop and create a complex computer program.

You will be assessed on

* How effectively you use project management tools and techniques to plan and manage the development of a digital outcome
* How effectively you decompose the problem into smaller components, and test and refine your media outcome so that it is a high-quality response to the task
* How well you have addressed relevant implications
* How well you synthesise information from the planning, testing and trialling of components to develop a high-quality response to the task (e.g. well-structured, logical, flexible, robust and comprehensively tested program)
* Discuss how this information assisted in the development of a high-quality outcome.

# Problem Statement

Recommender systems are commonly recognised as playlist generators for video and music services like Netflix, YouTube and Spotify, product recommenders for services such as Amazon, or content recommenders for social media platforms such as Facebook and Twitter.

“In October 2006, Netflix released a dataset containing 100 million anonymous movie ratings and challenged the data mining, machine learning and computer science communities to develop systems that could beat the accuracy of its recommendation system, Cinematch” (Bennett & Lanning, 2007).

Given a dataset of movies or music albums, users and their ratings, you are to create a recommender system.

## You must:

* Be able to add a movie or musical album (name, director/artist, genre)
* Search for a movie or musical album
* Rate a movie or musical album
* Recommend a movie or a musical album specific to the user based on their rating
* Have a GUI

You may possibly want to use persistent storage (i.e. store the data in a file)

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# S.W.O.T Analysis

Conduct a SWOT analysis for the project management tools you are considering using for your project.

## [Trello](https://trello.com/) for Project Management

#### Strength’s

* Easy to visualise tasks that: need to be done, currently being worked on or are completed
* Mobile app means its convenient to change and add tasks on the go
* Checklists within a card are very useful

#### Weakness’

* Trello requires payment in order to assign parent/child cards. This doesn’t work for our project
* Doesn’t handle big projects very well
* No Gantt charts
* Only simple descriptions can be given for tasks

#### Opportunities’

#### Threat’s (an aspect that prevents the tool from being useful)

* Being unable to create parent/child tasks is a pain in that you must create a full task for every decomposed task

## [ClickUp](https://clickup.com/) for Project Management

#### Strength’s

* Allows nested subtasks and checklists
* Organise projects using folders for better management
* Calendar view shows you how long you have to finish tasks in order to stay finish on time
* Allows you to upload media
* Software organises projects in an intuitive manner

#### Weakness’

* The amount of features can feel overwhelming
* Complicated interface that is not always easy to pick up and use

#### Threat’s (prevent the tool from being useful)

* Complicated interface could lead to wasting time figuring out how to use the software rather than managing the project

## [Monday](https://monday.com/lp/projectmanagement/bundle/?marketing_source=adwordssearch&marketing_campaign=au-s-project_management-b-desk-monday&aw_keyword=%2Bproject%20%2Bmanagement%20%2Bplatforms&aw_match_type=b&cluster=project_management&subcluster=&gclid=Cj0KCQjwsZKJBhC0ARIsAJ96n3VWqhG2mPzFpywfo87hxyw3RfYef8KTnuYyFcr5z08O4gp8nRTAgU8aAv53EALw_wcB) for Project Management

#### Strength’s

* Works well as a visual management aid
* Shows the status of projects
* Customisable project management styles such as Kaban, Gantt chart

#### Weakness’

* There is a steep learning curve when coming to using Monday to aid in managing your project
* Relies heavily on having good organisational skills
* Page response time is lacking when boards have many tasks

#### Threat’s (prevent the tool from being useful)

* Complicated interface could lead to wasting time figuring out how to use the software rather than managing the project

# Decomposing the Outcome

Decompose your digital technologies outcome into smaller components. User stories is one method that is commonly used in an A.G.I.L.E methodology

**Graphical user interface, text, application, website

Description automatically generated**

# Explain relevant implications

What relevant implications do you need to consider in the design of your digital technologies outcome? Explain at least three relevant implications and how they relate to your project.

## Intellectual property

One of the relevant implications I will need to take into consideration while developing my digital outcome is Intellectual Property. According to [Wikipedia](https://en.wikipedia.org/wiki/Intellectual_property), “Intellectual property is a category of property that includes intangible creations of the human intellect.” Every kind of content has some sort of intellectual property associated with it. Take a musical album for example, the album will have a cover image will most likely be owned by the label.

While developing this outcome I must make sure to not infringe on anyone’s intellectual property. This does not necessarily mean I am unable to use other people's creations however, if I am to do so I will make sure that I accredit them in an appropriate manner.  If I did not take this into consideration, I could be facing legal concerns later down the track to do with copyright and or other legal infringements.

Throughout this project I have made sure to follow this relevant implication by accrediting functions that have been inspired by someone else’s code, such as

## Functionality

Another thing I need to take into consideration while developing my game is the functionality of it. According to the Cambridge Dictionary functionality is the “quality of being useful, practical, and right for the purpose for which something was made”. The functionality of my outcome is especially important, if the outcome were no to function properly, nobody would be able to use it, thus making it useless.

As for the outcome I will be developing, I must make sure that the user is able to navigate through all of the menus and different screens with ease so as to not ruin the experience. One of the ways I can make my outcome more functional is by drawing the outputs to the GUI for the user to visually see as opposed to printing them in the console.

Throughout the development of my outcome, I have made sure to follow this functionality implication by following the technique I described above. Notably the function for printing out the game's details is encased between two dashed lines. This is so that it does not feel like the user if being bombarded with information as it sometimes does playing text based games.

## Sustainability and Future Proofing

conduct usability testing with potential uses of the site, such as past, present and/or future Onslow Students as well as any other potential end user. This will allow me to improve the site and fix any usability issues that I may have missed or overlooked

# Sprint Tracking 1

|  |  |  |
| --- | --- | --- |
| Sprint Number: | Start Date: | End Date: |
| Number 1 | 26th August | 7th September |

## Planning:

During the first sprint I am going to focus on developing the Content and Collection class’.

The Content class will be an object that contains 5 key fields: an ID, Name, Creator, Genre and Rating. The class will also include Getter and Setter methods as required. As for the Collection class, this will create an object that stores all the Content objects to that can be referenced and used later on in the program.

## 

## Development

The component I will be trailing in my first sprint will be the method of which the Content objs are stored:

* Either using a HashMap – (Requiring a key and value)
* Or using an ArrayList – (Requiring just a value)

Text

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## Feedback

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** | Using a HashMap to store Content objs | | |
| **Name:** | Jarrod Roberts | **Date:** | 31st Aug |
| **Feedback:** | The HashMap is a good option as it uses the Integer as basically an index value similar to an ArrayList however it looks like accessing items with the HashMap is a longer process than that of using an ArrayList | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** | Using an ArrayList to store Content objs | | |
| **Name:** | Gavin Moon | **Date:** | 31st Aug |
| **Feedback:** | The Array List seems like the obvious option to use. There is no need to use a dictionary (which is basically what a HashMap is) to store all the Content objects. | | |

### Outcome of the feedback

The outcome of my feedback is that in order to make my code a little more readable I should use an ArrayList for the type used to store the collection of Content objects.

An ArrayList seems to be better as it takes up less lines of code in order to accomplish the same tasks as a HashMap. Reducing lines means that it the program should run better as well as making it more readable. Making an ArrayList the more suitable option for storing a collection of Content objects

## Testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Testing:** | **Values Entered:** | **Expected Result:** | **Result:** | **Comment:** |
| **General:**  showCollection()  Iterating String[] | NULL | Both string arrays will get printed displaying the genres of the content objs in each collection |  | Works as expected |
| **General:**  getCollection()  ArrayList<> | NULL | Should return the collection as a ArrayList |  | Works as Expected |
| **General:**  getCollection()  HashMap<> | NULL | Should return the collection as a HashMap |  | Works as Expected |
| **General:**  addContent() | Genres = {"Space", "Drama"} | Should add the genres to the content obj |  | Did not work as expected  Changing String[] to ArrayList<String> |
| **General:**  addContent() | addContent("","", new ArrayList<String>(  Arrays.asList("Crime",  "Thriller")),5); | Should add the genres array list to the content obj |  | Works as expected |

## Evaluation

Sprint reflection and summary

Spring 1 has been conducted over 2 weeks, starting on the 26th of August and finishing on the 7th September.

Starting off the sprint consisted of developing the Content class which allows a Content object to be created. The Content object stores some necessary information such relating to the piece of content such as, the id number, name, creators name, genre and the users rating.

After that the Collection class was next. The collection class is quite simple. By creating a collection object, you will be able to use it to store a range of Content objects with in it.

What major changes and achievements did you complete in this sprint?

The major change and achievements completed during this initial spring method the way in which the Content objects were going to be stored using the Collection object. HashMaps and ArrayLists were the two options available. Thanks to testing and feedback given by classmates it was made clear that using an ArrayList was the most sensible option of the two.

Provide evidence of your project management tools being used

Text

Description automatically generated

# Sprint Tracking 2

|  |  |  |
| --- | --- | --- |
| Sprint Number: | Start Date: | End Date: |
| Number 2 | 7th September |  |

## Planning:

During the second sprint I am going to focus on developing the first half of the GUI class.

I will primarily be focusing on making the GUI functional. This includes creating buttons and text fields, where necessary, for the user to interact with the program. Methods such as addContent(), viewAllContent(), findContent() as well as all the drawing content to the canvas methods to make the program usable.

The Content class will be an object that contains 5 key fields: an ID, Name, Creator, Genre and Rating. The class will also include Getter and Setter methods as required. As for the Collection class, this will create an object that stores all the Content objects to that can be referenced and used later on in the program.

Provide evidence of your project management tools being used to plan the development of your outcome at the beginning of your spring here

Graphical user interface, text, application, email

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## Development

The component I will be trailing in my second sprint will be the location of the buttons

* Console Menu (text menu)
* Side Bar Buttons
* GUI Buttons (using the mouseListener)

Provide evidence of your version control (GitHub)

## Feedback

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** | Visual On-screen GUI Buttons | | |
| **Name:** | Jarrod Roberts | **Date:** | 24th Sep |
| **Feedback:** | The onscreen buttons are also more intuitive. Selecting using the text menu is tedious and requires two decisions having to be made in the brain (e.g. selecting the letter and choosing the outcome)  They are also much nicer visually than the menus and sidebar buttons. | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** | Sidebar GUI Buttons | | |
| **Name:** | Gavin Moon | **Date:** | 24th Sep |
| **Feedback:** | The sidebar buttons are a good option. It means that you are minimising on your code because the ECS100 library handles everything and would be my preferred option over the text menu. However, if you can manage to include the onscreen visual buttons, I recommend those | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** | Console Menu | | |
| **Name:** | Ryan Joe | **Date:** | 24th Sep |
| **Feedback:** | First, the text-based console menu doesn’t look as appealing as the other two options, it is also a pain to have to click off of the GUI onto the console, in order to make your decision | | |

### Outcome of the feedback

The outcome of my feedback seems to be that the preferred button style is that of using the onscreen style. This is due to the fact that selecting buttons onscreen is more intuitive rather than having to click off the screen to enter your option into a menu.

Although the onscreen buttons will inevitably be a lot more work, it will be beneficial in the long run as it will improve the user experience making my outcome more desirable to use.

## Testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Testing:** | **Values Entered:** | **Expected Result:** | **Result:** | **Comment:** |
| **General:**  addContentGUI() | **Name:** YSIV  **Creator:** Logic  **Genres:** Rap, Hip-hop  **Rating:** 4.6 | The content object will be added to the collection  The genre text will be split via the “,” and then added to an ArrayList. |  | Works as expected |
| **General:** | **Choice:** A  **Choice:** V  **Choice:** F  **Choice:** R  **Choice:** Q | The correct function is run when the user provides an answer to the menu |  | Works as expected |
| **General:** | **Clicked:** Add Content  **Clicked:** View Content  **Clicked:** Find Content  **Clicked:** Change Rating | The correct function is run when the user provides an answer to the menu |  | Works as expected |
| **General:**  setupGUI() | NULL | Should print buttons in a grid format:  2 columns & x rows |  | Unintended output  Need to multiply the x value by x%2 |
| **General:**  setupGUI()  addButtonsToList() | **Buttons in HashMap:**  Add Content  View All Content  Find Content  Etc… | Should print a total of 5 cards |  | Unintended output  Not all cards display |
| **General:**  setupGUI()  addButtonsToList() | buttons.put(0, "Add Content");  buttons.put(1, "View All Content");  buttons.put(2, "Find Content"); | Should print out all the cards in a grid format |  | Works as expected  Moved row = 0 outside the for loop |
| **General:**  addContent() | addContent("","", new ArrayList<String>(  Arrays.asList("Crime",  "Thriller")),5); | Should add the genres array list to the content obj |  | Works as expected |

## Evaluation

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What major changes and achievements did you complete in this sprint?

The major change and achievements completed during this initial spring method the way in which the Content objects were going to be stored using the Collection object. HashMaps and ArrayLists were the two options available. Thanks to testing and feedback given by classmates it was made clear that using an ArrayList was the most sensible option of the two.

Provide evidence of your project management tools being used

# Sprint Tracking 3

|  |  |  |
| --- | --- | --- |
| Sprint Number: | Start Date: | End Date: |
|  |  |  |

## Planning:

What are you planning to work on in this sprint?

Provide evidence of your project management tools being used to plan the development of your outcome at the beginning of your spring here

## Development

What components are you going to trial:

* Something goes here

Provide evidence of your version control (GitHub)

## Feedback

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** |  | | |
| **Name:** |  | **Date:** |  |
| **Feedback:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** |  | | |
| **Name:** |  | **Date:** |  |
| **Feedback:** |  | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Component:** |  | | |
| **Name:** |  | **Date:** |  |
| **Feedback:** |  | | |

### Outcome of the feedback

What is the outcome of the feedback:

## Testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Testing:** | **Values Entered:** | **Expected Result:** | **Result:** | **Comment:** |
| **Expected:**  showCollection()  Iterating String[] | NULL | Both string arrays will get printed displaying the genres of the content objs in each collection |  | Works as expected |
| **Expected:**  function() |  |  |  |  |
| **Expected:**  function() |  |  |  |  |
| **Expected:**  function() |  |  |  |  |
| **Expected:**  function() |  |  |  |  |
| **Expected:**  function() |  |  |  |  |

## Evaluation

Sprint reflection and summary

What major changes and achievements did you complete in this sprint?

Provide evidence of your project management tools being used to manage the development of your outcome at the end of your sprint

# Project Summary

## Addressing relevant implications

How did you address the relevant implications in the development of this outcome?

## Synthesising information gained from: Planning, Testing and Trailing of components

How did you use the tools, techniques and process of each sprint inform the development of this outcome?

## Discussing how this information lead to the development of a high-quality digital outcome

How did the process help to shape the development of your outcome? Provide evidence.