Data Management Plan

COMP2160 – Game Development

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# Features Claimed

|  |  |  |
| --- | --- | --- |
| **Feature** | **Weighting** | **Attempted? (YES/NO)** |
| Level Maps | 10% | Yes |
| Physics-based ball movement | 5% | Yes |
| Player movement   1. Player mesh 2. Directional controls 3. Walk / run control 4. Turn to face direction of movement 5. Remain in contact with ground at all times 6. Move up/down ramps 7. Cannot move off cliffs 8. Cannot move outside map 9. Smooth collisions | 2%  3%  2%  3%  3%  3%  3%  3%  3%  3% | Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Yes  No |
| Kicking the ball   1. Movement disabled while grabbing 2. Grab nearby ball 3. Control direction of kick 4. Trajectory line displayed 5. Release key to perform kick | 3%  3%  3%  3%  3% | Yes  Yes  Yes  Yes  Yes |
| Goal | 5% | Yes |
| Player animations | 5% | Yes |
| Camera   1. 16:10 screen 2. Isometric camera 3. Move camera 4. Kick camera 5. Smooth transition between move & kick camera 6. Arrow pointing to off-screen ball | 2%  2%  2%  3%  3%  3% | Yes  Yes  Yes  Yes  No  No |

|  |  |  |
| --- | --- | --- |
| User Interface   1. Font from Font library 2. Start dialog 3. End dialog 4. In-game UI | 2%  2%  4%  2% | Yes  Yes  Yes  Yes |
| Analytics   1. Per session user data 2. Per level difficulty data 3. Per kick heatmap data | 4%  3%  3% | No  No  No |
| **Total** | **100%** |  |

# Asset Licenses

For each of the third-party assets used in your project, list the following:

* Creator (person or company name)
* Source URL (or other contact details for creator)
* License URL

## KayKit: Mini-Game Variety Pack (1.2)

* Creator: Kay Lousberg
* Source: <https://kaylousberg.itch.io/kay-kit-mini-game-variety-pack>
* License: [Creative Commons Zero, CC0](http://creativecommons.org/publicdomain/zero/1.0/)

KayKit : Character Animations (1.2)

* Creator: Kay Lousberg
* Source: <https://kaylousberg.itch.io/kaykit-animations>
* License: [Creative Commons Zero, CC0](http://creativecommons.org/publicdomain/zero/1.0/)

## Toony UI icons Asset Pack

* Creator: Josie Wood
* Source: <https://josie-makes-stuff.itch.io/toony-ui-icons-asset-pack>
* License: [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/)

## ModularBlocks

* Creator: Chris Lee
* Source: Provided directly by creator
* License: [Creative Commons Zero, CC0](http://creativecommons.org/publicdomain/zero/1.0/)

## JELLEE BOLD

* Creator: Alfredo Marco Pradil
* Source: <https://fontlibrary.org/en/font/jellee-typeface>
* License: [OFL (SIL Open Font License)](http://scripts.sil.org/OFL)

# Overview

## Purpose The purpose of collecting this data, will be to use the gathered information as a way to assess the player’s behaviour and performance in the game. The data can help bring understanding of who is playing the game, how often they play and the level of difficulty within each level. We can then use this information to improve the game’s overall experience and adjust the difficulty curve and level designs accordingly.

## Data to be measured

**Question: What is the player retention?**

Metric 1: Date & time of game start

Metric 2: Date & time of game exit

**Question: What is the difficulty of each level?**

Metric 1: Scene name

Metric 2: Time taken to complete the level

Metric 3: Total number of kicks during the level

Metric 4: Player's choice (retry or move to the next)

**Question: How players engage with the level layout?**

Metric 1: Time of the kick

Metric 2: Ball's initial map coordinates

Metric 3: Direction of the kick

## Data owners and stakeholders

|  |  |  |
| --- | --- | --- |
| **Position** | **Name** | **Email** |
| **Data owner**  *Has the authority to make decisions about the data* | Dylan Neilson | dylan.neilson@students.mq.edu.au |
| **Data custodian**  *Responsible for the data’s technical environment* | Taka | taka@students.mq.edu.au |
| **Data/information/records manager**  *Generate, access and update the data in daily activities* | Dylan Neilson | dylan.neilson@students.mq.edu.au |

## Related policies and regulations

We will be adhering to the General Data Protection Regulation (GDPR). Following this protection regulation and ensuring compliance, will make sure we handle personal data with the highest level of security and privacy. This means that we can guarantee the personal data collected is processed transparently to the user’s knowledge.

# Data Collection

* 1. Data description and collection methods

**Datasets**

Player Profiles

* Type of Data:
  + System username.
  + IP address of the computer.
  + Steam Persona Name.
  + Steam ID.
  + Player’s friends Steam Persona Name.
  + List of steam games owned by player.

Gameplay Logs

* Type of Data:
  + Date & time the game was started.
  + Date & time the game was ended.
  + Total number of kicks made during the level.
  + Whether the player decided to retry the level or move to the next.

Level Statistics

* Type of Data:
  + Scene name for the level.
  + Time taken to complete the level.

Kick Statistics

* Type of Data:
  + The time at which the kick was performed.
  + The ball’s position in map coordinates at the start of the kick.
  + The direction of the kick.

Data Collection Method:

The Datasets will be collected in real-time during gameplay through the use of event tracking or logging within the game engine to capture the data.

Data Formats:

The data will be stored in log files formatted with one line per record and fields delimited by tabs. Headers will also be used to file ensures that the fields' definition and order are well-defined, making it easy to understand and work with the data. Following this format will allow flexibility in analysing and processing the data.

## Data storage and location

Storage Locations

Data collected by the game will be both stored locally on the user’s computer and internally on our servers.

Data Access and Systems

Access Control:

Access to data is controlled through role-based access control. Employees will be granted access based on their job responsibilities, and contractors or partners receive temporary access where necessary. Strong Authentication and authorization methods will also be put into place, such as strong password policies and multi-factor authentication to ensure only authorized personnel can access sensitive data.

Systems Used:

Data access is facilitated through secure APIs supported by Steam that allow authorized applications to interact with their systems.

Backup and Recovery Plan

Data Backup:

The data we collect will be backed up daily to on-site servers and are encrypted.

Recovery Plan:

In the event of data loss or system failure, we follow a predefined recovery plan. This includes restoring data from backups, identifying the root cause of the issue, and taking corrective actions to prevent a recurrence.

## Data disposal (keep, destroy, or transfer data)

We have established a procedure to follow for data disposal when it becomes necessary. Our Data disposal procedure is as follows:

1. Data Classification:

We classify our data based on its sensitivity and importance to help determine the appropriate disposal method for each type of data. Our classification criteria include data sensitivity, confidentiality, and legal retention requirements.

2. Secure Data Destruction:

For the data that needs to be destroyed, we ensure secure and irreversible destruction by using data destruction tools and/or services. In the case of digital data, we use certified data wiping software or hardware methods to overwrite data, rendering it unrecoverable.

3. Physical Destruction:

With Physical documents or storage media, such as hard drives, we securely destroy them through shredding or degaussing, rendering them unreadable and unusable.

4. Documentation:

All our data disposal activities are documented, indicating what data was disposed, the method used, and the date of disposal.

5. Data Transfer:

When we transfer data, we ensure that it is securely transmitted and received, while also holding the recipient to the same high standards of data protection and disposal.

## Privacy

As part of our commitment to having ethical data management and maintaining compliance with the Australian Privacy Act 1988 and GDPR, we understand the significance of protecting the privacy of sensitive information.

The profile information we collect from our players may contain sensitive information, such as IP addresses, system usernames, and Steam IDs. Exposure of this data could have privacy and security implications, compromising our user’s privacy, exposing their identity, location, or gaming habits.

## Ethics

In adherence to ethical considerations outlined by the ACS Code of Ethics, we recognize the importance of upholding integrity, confidentiality, and transparency in every aspect of our data collection and management. We have taken extra thought into additional ethical considerations that go beyond the specific data protection and privacy measures detailed within this Data Management Plan.

* Informed Consent:
  + Principle: Ensuring that players are fully aware of the data being collected and the purposes for which it will be used.
  + Action: Players will be presented with a clear and comprehensible privacy policy and terms of use. Consent will be explicitly obtained, and players will have the option to opt-out of data collection.
* Data Anonymisation:
  + Principle: Out of respect for our user’s privacy, we will not only collect the minimal necessary data but also ensuring that any data that is shared or analysed will be anonymised
  + Action: Data shared for internal analysis will be aggregated and anonymised to mitigate the risk of identifying individual players.
* Responsible Data Use:
  + Principle: The collected data will only be used for the purposes outlined in this DMP.
  + Action: Any deviation from the stated purposes in this DMP will require further assessment and, if necessary, obtaining additional consent from the players.

By taking these ethical issues into consideration, we aim to ensure that our data management practices not only comply with regulations but also reflect a commitment to responsible use of player data.

# Using Data

## Data Analysis

We will use the collected data to gain insights into player behaviour, game performance, and other relevant aspects. Using appropriate statistical tests and visualization techniques we will compare different data points for analysis. For instance, we may compare the time taken to complete levels between different player profiles, analyse the player's decision to retry or move on to the next level, and assess the correlation between a player's friend list and their gameplay preferences.

## Data Implementation

The data we collect from player profiles, gameplay logs, level statistics, etc will be used to improve the game's design and gameplay experience. By analysing player profiles, we can identify which levels are causing players to retry frequently or abandon the game. Based on this data, adjustments can be made to the level difficulty to improve the player retention. The collected logs can reveal patterns of player engagement, such as session durations which can then be used to schedule in-game events to boost player activity.

Furthermore, the collected data can also help in assessing level design by investigation the time taken to complete a level. If certain levels consistently take longer to complete, it may indicate a need for it to be redesigned or optimised. Additionally, the data on the total number of kicks made during a level can be used to assess the level's difficulty and modifications can be made accordingly. Combining our data analysis with player feedback can lead us to developing more targeted and effective updates, resulting to a more engaging and successful game that better meets the needs and preferences of the player base.

## Data publication

The data we collect will be used for internal use only and we do not plan to publish or showcase the data collected.

## Data sharing

We do not anticipate on sharing the collected data with any external parties, including other game developers or advertisers.

Our primary purpose for collecting this data is to enhance the game's design and player experience, and the information obtained will be used exclusively for internal analysis. This also aligns with our commitment to keeping player privacy and complying with data protection regulations such as the General Data Protection Regulation (GDPR) and the Australian Privacy Act 1988.

While there could be potential benefits in sharing insights and findings, we still recognise the importance of obtaining explicit consent from players before engaging in any data-sharing activities. If changes in our plans were to arise in the future, we would ensure that proper consent is given, and procedures would take place to make sure the data is anonymous to ensure the privacy of individuals.

Challenges and Risks:

We also have security and privacy concerns as sharing player data externally poses inherent privacy concerns. Even with making the data anonymous, there may still be a risk of re-identification, especially when dealing with unique identifiers such as Steam IDs. Additionally, external sharing introduces the risk of data breaches or unauthorised access, and the ability to ensure security measures by third parties is limited.