**Slide 1 - Title Slide:**

In this presentation I will discuss:

* What it means to determine a Game’s DNS and
* How we can evaluate a Game’s potential using Retention Metrics

**Slide 2 - Introduction:**

Let’s start with defining some key terms and determining what our end goal is.

*Game DNA:*

A very important idea in early-stage game development is a Game’s DNA. The DNA of a game is a unique pattern observed of how players engage with a game in the first few minutes of gameplay. It shows the game’s ability to capture player interest early on. Hit games perform well early, with their fundamental aspects, such as their base mechanics, drawing players’ interest to return to the game later.

*Retention Rate:*

Retention tells us how many players come back after their first session of playing the game. Higher retention means the game is enjoyable and keeps players engaged, which is key for its success.

The retention rate is simply the percentage of users who return to the game after first playing it, out of all the users who installed the game in the first place.

*Goal:*

Using data on the retention of users and the number of minutes played in their first session after installation we can identify which game has the highest success potential.

**Slide 3 – Methodology:**

For this particular task, the goal was to evaluate which game out of 4 different games has the highest potential for success.

The data included a total of 40,000 samples equally split between the games, meaning there were exactly 10,000 samples per game. All the users were unique and the mean and median playtime were exactly the same for each game averaging 5.5 minutes of playtime in their first session after install.

There were two important metrics that were used in this analysis. The first was the minutes played per user on the first play session after they installed the game. The second was the retention, which was a binary “yes” or “no” stating whether the user returned to play the game after their first session.

These two metrics combined can give us a great preliminary analysis of how likely the game is to perform well in the future. In the next slides we will see how.

**Slide 4 – Retention Analysis by Game:**

For the first result, the overall retention rate was calculated for each game. This result was obtained by finding what percentage out of all users who installed the game returned to the game after their first time playing.

Using this simple metric, we can see that Game 1 is ahead of all other games with the highest retention rate of 26%. It leads the second-place game which is Game 4 by almost 10% percentage points (16.3% for Game 4).

Game 2 showed the lowest retention rate out of all games, with only 6.5% of users returning to the game.

**Slide 5 – Retention Analysis by Game:**

To summarise the results from the graph.

* Game 1 has the highest overall retention rate standing at 26%, which is almost 10% above the second-place game.
* This means over 1 in every 4 players returned to the game to play it again after their first session showing strong engagement from the only a few minutes of playtime.

**Slide 6 – DNA Retention Curves:**

To perform further analysis, I plotted the minute-by-minute retention curves per game, showing the percentage of retained users against how long their first session of playtime was before they logged out of the game.

This curve is most useful when determining a Game’s DNA and its potential to be a hit game. Hit games show that the longer the user spends on the game in their first session, the more likely they are to return and engage more with the game. This means that the steepest and more positive the gradient of the retention curve is, the more likely it is to be a hit game.

From the graph, Game 1 again stands out as the clear winner. While it has a smaller edge earlier on over the other 3 games, and even a slight dip at the 4th minute, by minute 5 retention skyrockets and remains high, signalling the game’s superior potential.

It is good to note that Game 4, which took second place in the previous analysis, also remains in second place here, with a positive trending retention curve, signalling that it too has potential for success.

On the other hand, Game 2 which showed the lowest overall retention before, also steeps downwards. This issue can be described as a wormhole and means that less users return to the game with more gametime signalling a systemic problem with the game unable to engage users early on.

**Slide 7 - DNA Retention Curves:**

To summarise the results from analysing the retention curves:

* Game 1 has the strongest DNA with the steepest retention curve.
* Game 1 is able to engage players well, especially from the 5th minute of gametime onwards, where retention shoots up.

**Slide 8 – Discussion:**

Game 1 shows strongest retention and growth potential. It stands out with the highest overall retention rate at 26% and the steepest retention curve with retention increasing the most with playtime.

**Slide 9 – Limitations:**

While this study shows Game 1 as the clear winner, it has its limitations.

Firstly, it is recommended to collect data from at least 40,000 user registrations per game. In this analysis, the dataset provided only included 10,000 per game meaning the results may be inconclusive. It is recommended that more data is collected per game to strengthen the validity of this result.

Furthermore, there was no information on the lifecycle of the game. While Game 1 may be the most engaging early on, it may not produce a high Return on Investment if it is very old. This is because the market may be saturated already, and new users may be hard to acquire.

**Slide 10 – Conclusion:**

We have seen that Game 1 is the clearest winner with the highest potential for success based on the data.

It shows a strong DNA with the best early engagement signalling that it has big hit potential.

However, more data is needed to make this conclusion more robust and considering other factors such as the lifecycle stage of the game is essential before making a final decision on whether to further invest in the game.