CS6457: Video Game Design
Playtest Results
Team Prefab Pioneers – Rally Pioneers

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Design Question(s) - description, justification

For our playtest, we divided our questions into pre-game and post-game sections.

Pre-Game Questions
The pre-game questions were designed to gather essential background information about the players before they started testing the game. This information contextualized their feedback, allowing us to understand how different demographics and skill levels influenced their experience. By collecting this data, we could segment players into various categories and analyze their post-game feedback more effectively.

- **How often do you play video games?**
  - Determines the player's overall gaming experience and familiarity with video games, which helps contextualize their feedback and expectations.
- **What types of games do you usually play?**
  - Identifies player preferences and gaming habits, providing insight into how their experiences with other game genres might influence their perception of Rally Pioneers.
- **How often do you play racing games?**
  - Assesses the player's specific experience with racing games, helping to gauge their familiarity with the genre and their potential proficiency in playing Rally Pioneers.
- **How would you rate your skill level in racing games?**
  - Self-assessed skill levels help us understand the player's confidence and ability in racing games, allowing for a more nuanced analysis of their feedback.
- **How comfortable are you with using a keyboard for gaming controls?**
  - Measures the player's comfort with the primary input method used in Rally Pioneers, which can impact their control-related feedback and overall gameplay experience.

Post-Game Questions
The post-game questions were designed to capture detailed feedback on various aspects of the game. They included Likert scale questions for quantitative analysis and open-ended questions for qualitative insights, providing a comprehensive understanding of player experiences and identifying areas for improvement.

Likert Scale Questions
1. **How challenging did you find the AI opponents?**
   - **Area Covered:** AI Behavior
   - **Justification:** Ensures AI difficulty is balanced and engaging. Evaluates if the AI provides a suitable level of competition, maintaining player interest and preventing frustration from difficulty imbalances.
2. **How effective were the environmental hazards (e.g., oil slicks) and power-ups (e.g., speed boosts)?**
   - **Area Covered:** Game Environment
   - **Justification:** Assesses strategic depth added by these elements. Helps refine hazards and power-ups to ensure they enhance gameplay and contribute to fun and challenge.
3. **How intuitive and responsive were the vehicle controls?**
   - **Area Covered:** Gameplay Experience
   - **Justification:** Ensures controls are user-friendly. Identifies control issues that may hinder player performance and enjoyment, allowing for smoother gameplay adjustments.
4. **How visually appealing did you find the game environments & tracks?**
   - **Area Covered:** Game Environment

- **Justification:** Visual appeal is crucial for immersion and enjoyment. Determines if the game's design meets player expectations and enhances overall experience.
5. **How clear and helpful was the Heads-Up Display (HUD)?**
    - **Area Covered:** User Interface
    - **Justification:** A clear HUD is essential for effective gameplay. Helps refine the HUD design to improve usability and support player needs during gameplay.
6. **How realistic and engaging did the vehicle physics and dynamics feel?**
    - **Area Covered:** Gameplay Experience
    - **Justification:** Enhances immersion and satisfaction. Identifies if physics and dynamics meet player expectations and if adjustments are needed for increased realism.
7. **How enjoyable and fun did you find the overall gameplay?**
    - **Area Covered:** Overall Enjoyment
    - **Justification:** Measures overall player satisfaction and enjoyment. Provides a broad indicator of the game's success and areas needing improvement.

Open-Ended Questions
1. **What did you find most frustrating about the game?**
    - **Area Covered:** Overall Gameplay
    - **Justification:** Identifies specific issues that detract from player experience. Guides targeted improvements to enhance satisfaction.
2. **Were there any controls or features that were confusing or hard to use?**
    - **Area Covered:** User Interface
    - **Justification:** Ensures game mechanics are intuitive and accessible. Helps refine controls and features to reduce learning curves.
3. **How did the game environments affect your experience?**
    - **Area Covered:** Game Environment
    - **Justification:** Assesses the impact of visual and thematic elements on immersion. Guides improvements in level design to enhance player engagement.
4. **What features would you like to see added or improved?**
    - **Area Covered:** Overall Gameplay
    - **Justification:** Gathers player suggestions for new features or enhancements. Directs future development to align with player desires.
5. **How fair do the races feel overall, does the AI of the opponent feel challenging enough?**
    - **Area Covered:** AI Behavior
    - **Justification:** Ensures races are balanced and competitive. Evaluates AI challenge to maintain appropriate difficulty levels.

Approach to testing design question(s) and Playtest methods

To test our design questions effectively, we utilized a structured approach with various playtest methods. This strategy ensured we gathered detailed and actionable feedback on different game aspects.

1. **Approach to Testing Design Questions**
    - **Gameplay Experience:** We observed player interactions using think-aloud protocols and post-game Likert scale questions to capture feedback on intuitiveness and engagement. This helped us identify potential barriers for different skill levels and ensure the game is accessible and enjoyable for a wide audience.
    - **AI Behavior:** In-software event logging tracked interactions with AI opponents. Post-game Likert scale and open-ended questions assessed AI difficulty and realism, allowing us to evaluate if the AI provided a suitable level of competition and maintained player interest without causing frustration.
    - **Game Environment:** Visual appeal and immersion were evaluated through structured interviews, Likert scale questions, and think-aloud sessions. In-game event logging captured interactions with environmental elements, helping us determine if the game's design met player expectations and enhanced their overall experience.
    - **User Interface:** The effectiveness of the HUD and other UI elements was assessed using Likert scale and open-ended questions, along with observations during gameplay. This ensured the HUD

was intuitive and informative, providing players with the necessary information to navigate the game effectively.

- o **Overall Enjoyment:** Overall satisfaction was measured through Likert scale and open-ended questions, providing both quantitative and qualitative insights. This broad measure of player satisfaction helped us understand the game's strengths and areas needing improvement.

2. Playtest Methods

- **Think-Aloud Protocols:** Players verbalized their thoughts during gameplay, providing real-time insights into their cognitive processes and immediate reactions.
- **Structured Feedback:** Post-game questionnaires gathered detailed feedback on specific aspects of the game, uncovering deeper insights and suggestions.
- **Likert Scale Questionnaires:** Collected quantitative data on player perceptions, allowing for easy comparison and analysis of feedback across different players.
- **In-Software Event Logging:** Automated logging of player actions provided objective data on gameplay behaviors, identifying patterns and issues not easily captured through observation alone.

These methods comprehensively evaluated our design questions, ensuring a thorough understanding of player experiences and guiding targeted game improvements.

Results summary/Analysis

Pre-Game Questions - Demographics and Frequency of Play:

Of the 8 total play testers, 4 are reportedly frequent gamers, 4 game occasionally, and 2 game never; with them having a wide range of game genres played overall. This diversity in gaming frequency and backgrounds provides a broad perspective on the game's appeal to different types of gamers. In terms of frequency of playing racing games specifically, 6 players reported playing racing games occasionally, while 4 players reported never playing them. This indicates that the feedback comes from a mix of players with varying levels of familiarity and experience with the racing genre.

Post-Game Likert Scale Statement Analysis:
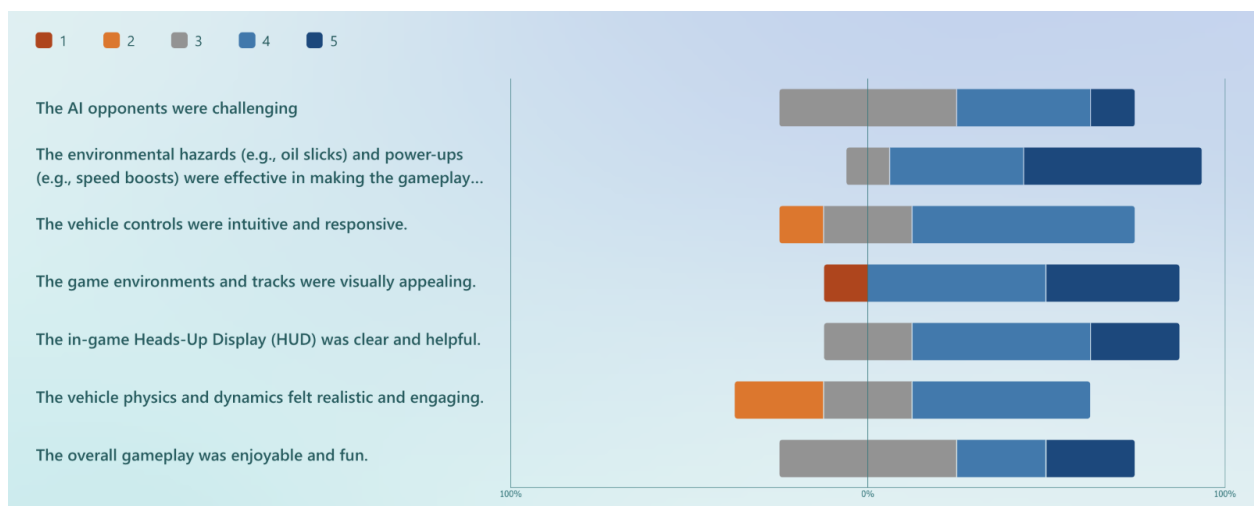
Play testers rated several aspects of the game positively on average. Notably, the environmental hazards and power-ups (Q7) were found to be engaging and effective, with an average rating of 4.4. This indicates that these elements are well-designed and contribute significantly to the overall gameplay experience.

Players appreciated the aesthetics and found the environments visually appealing (Q10 - average rating of 4.3), adding to the immersion and enjoyment of the game. Players also found the HUD to be clear and helpful (Q12), which enhances the overall usability and player experience. Areas of improvement to revisit before the final product would include vehicle controls and physics (Q3, Q6), AI balance (Q14), and track variety (Q17).

Overall gameplay enjoyment (Q16) was rated at 3.9, indicating that players generally found the game fun and engaging. This suggests that the core gameplay mechanics are successful in delivering an enjoyable racing experience with some room for improvement.

Logged Game Data Analysis:

With the help of in-game logging data we can conclude the following:

- Only two of the 8 players were able to finish first. The rest of the players ended up in the 4th position. This indicates that the track was challenging, and the difficulty level can be decreased.
- The average number of Nitro's collected was 6.75 whereas interactions with Oil Slicks were at 3.1. This indicates players understood the usability of Nitro's and tried to interact with them more often and at the same time avoid the Oil Slicks.
- 50% of the players chose the Portal used. For others it was not clear what the Portal does or did not know where it leads to.
- Average collisions with AI bots were only 2.875 which means the AI bots were not a major obstacle for the players. The sensor functionality of AI bots is working fine.
- Players who could finish first could maintain high speeds for longer durations. Thus, their average speed was around 165 km/h Whereas the average speed of the rest of the players was around 100 km/h. This means that players are slowing down at certain points in the track. Hence, the degree of turns can be decreased.
- From the "Player Lap times" chart below, we can see that generally the time taken for the second lap is shorter than the first. This indicates that players are adapting to the track and getting used to the controls. This is a good sign as the players are learning new gameplay skills. In the case where laptime 2 is higher, the player tried a shortcut which was not successful.
- In the "On track vs Off track time" chart, we compare the times when the player vehicle was completely on track and when it was off track. For the players who ended up in the 1st position, the off-track time was minimal compared to the on-track time. However, for other players this time was significant. This indicates that players are not able to control their vehicle properly and are going off track. Thus, we can increase the width of the track.
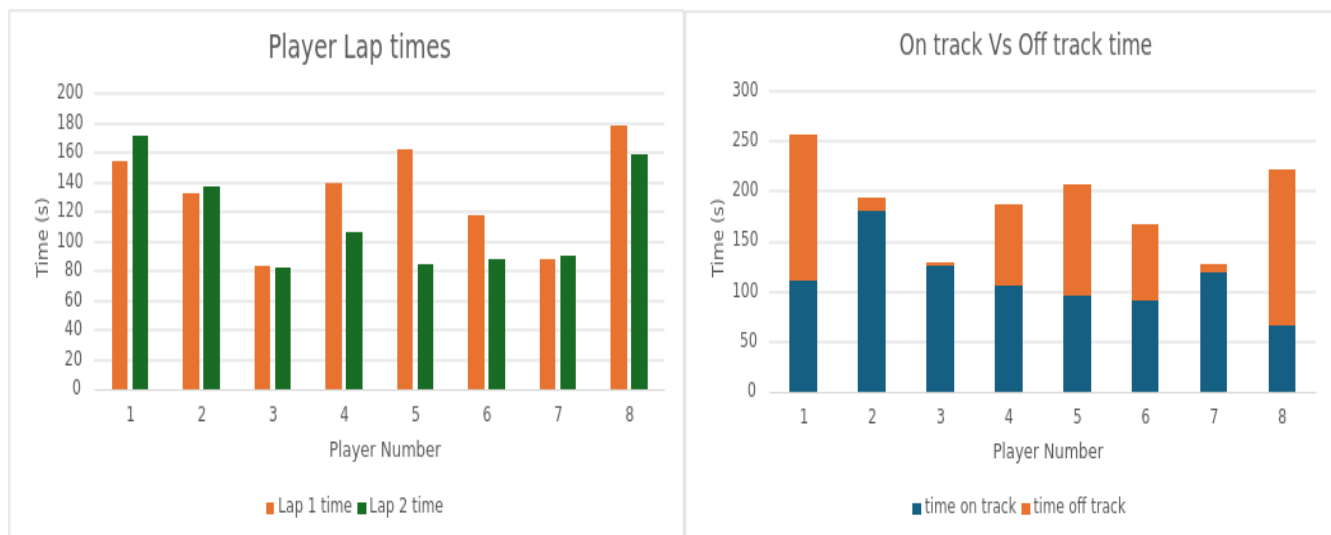
Post-Game Open-Ended Feedback Analysis:

From answers to the survey's open-ended section, we found that most play testers mentioned that the most frustrating part of the game is related to the vehicle controls. The examples they cited were the difficulty in turning at high speeds and the sensitivity of the controls. These suggest a potential need to adjust the control sensitivity and handling in the final version. In contrast, play testers expressed overall satisfaction with the game environments and track designs. However, they pointed out certain features, like the camera work and collision mechanics, which require further refinement to improve the gameplay experience.

Additionally, there was a prevalent desire among play testers for an expansion of power-ups and environmental hazards. While acknowledging that the current power-ups are effective in making the gameplay engaging, participants recommended adding more variety to keep the experience fresh. Play testers also noted an expectation for certain advanced features like a mini-map or better directional indicators, which were not present in the version they experienced. To address this, enhancements to the HUD and better on-screen prompts should be made to align player expectations with the intended gameplay.

Furthermore, 60% of play testers acknowledged that the game provided a fair and challenging experience, aligning well with the game's objective of being an engaging racing game that tests player skill and strategy. However, some feedback indicated that the AI opponents could occasionally feel overpowered or unpredictable, which will be addressed to ensure a balanced and fair competition.

Overall, the playtesting feedback indicates that while the game is engaging and enjoyable, there are key areas that need improvement, particularly in vehicle controls, AI balance, and bug resolution. Implementing these changes will help in delivering a more polished and enjoyable racing game experience.

Action Items

Improve Car Handling:

- Steering: Refine steering to provide a balance between smooth turning at low speeds and precise control at high speeds. This addresses player concerns about sensitivity and turning angles for tight corners or reversing.
- Acceleration: Adjust acceleration for a smoother and more gradual feel.
- Camera Behavior: Adjusting camera offsets so the player can get a better view of the track ahead.

UI Fixes:

Fixing the non-functional Main Menu button on the scoreboard to ensure a seamless user experience. Also evaluating other UI elements to ensure the correct flow of control among the UI elements.

Difficulty Balancing:

- Car Control: Prioritize the addressing of the car controls as it is the primary source of player frustration impacting the perceived difficulty.
- Collectables and Collisions: Investigate adjustment to collectible triggers and the collision system based on playtester feedback but prioritize car handling improvement first.

Content expansion:

Adding more tracks, power-ups, and car customization options based on player feedback. Adding more UI elements and interaction like direction to the next checkpoint and warnings for players going in the wrong direction should be done.

Tutorial enhancement:

Expand the tutorial to explain environmental interaction (power-ups, oil slicks, checkpoints), introduce the mini-map, and provide a smoother learning curve for new players.

Audio Polish: Implement sound effect for UI elements and gameplay events to enhance player experience. Refine background music selection to better match different levels.