CSN-254
Software Engineering
Feasibility Report

Group-4

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BattleBlade: Smartphone console based gaming experience.

Executive Summary:

This report assesses the feasibility of developing a Smartphone-Controlled Multiplayer Game within an 8-week timeframe. The aim is to create an affordable and engaging gaming experience, leveraging smartphones as controllers for multiplayer games displayed on PCs. The project targets a wide audience, primarily gaming enthusiasts, casual gamers, gaming cafes, and educational institutions.

Customer:

Primary customers include gaming enthusiasts and casual gamers seeking an affordable and innovative multiplayer gaming experience. Secondary customers encompass gaming cafes and educational institutions looking for accessible and interactive multiplayer options.

Visibility Plan:

Customer Communication:

- Weekly email newsletters for progress updates.
- Bi-weekly virtual meetings for feedback and adjustments.
- Scheduled demonstrations of game development stages.

Team Communication:

- Daily stand-up meetings for progress and challenges.
- Project management tools for milestone tracking and collaboration.

Statement of Task:

Develop a Smartphone-Controlled Multiplayer Game, playable on PCs, with smartphones acting as controllers. This includes creating game logic, user interface, networking for multiplayer experiences, and developing the smartphone controller app.

Preliminary Requirements Analysis:

Functional Requirements:

- Networking capabilities for real-time multiplayer gaming.
- Intuitive UI/UX for Android smartphone controller app and PC game.
- Responsive and engaging multiplayer modes.

Non-Functional Requirements:

- Low-latency communication between smartphones and PC game.
- High frame rate and responsive gameplay on various PC specifications.

Suggested Deliverables:

1. Smartphone Controller App for Android.
2. PC Game with various multiplayer modes.
3. Documentation: User manuals, development documentation, and API documentation.
4. Support and Maintenance Guide for troubleshooting and updates post-launch.

Process to be Followed:

The project will adopt an Iterative refinement approach, allowing for continuous feedback and adjustments throughout the development process. This method will enable the team to release a minimum viable product (MVP) early in the development cycle for real-world testing and refinement.

Outline Plan:

1. Project Initiation (Week 1):
    - Quick team setup, tool selection, and initial planning.
2. Requirement Gathering and Simplified Analysis (Week 2):
    - Core requirement collection with a focus on MVP features.

3. Design and Prototyping (Week 3):
    - Rapid system architecture and basic UI/UX prototyping.
4. Development Sprint (Week 4-5):
    - Intense focus on core gameplay and controller app.
5. Testing and Iterative Refinement (Week 6):
    - Immediate internal testing and refinement.
6. MVP Release Preparation (Week 7):
    - Finalize MVP features and documentation.
7. MVP Release and Feedback Gathering (Week 8):
    - Release MVP for limited public testing.
    - Collect feedback for immediate incorporation.
8. Post-Launch Support and Optimization (Week 9):
    - Address immediate post-launch issues.
    - Optimize based on user feedback.

Risk Analysis:

- Technical Challenges:
    - Primary Approach: Focus on widely used models, address critical issues first.
    - Fallback Plan: Prioritize compatibility for popular smartphone models initially, expanding gradually.
- Networking Issues:
    - Primary Approach: Implement basic networking for MVP, explore post-launch optimization.
    - Fallback Plan: Optimize networking incrementally post-launch and consider cloud services for improved performance.
- Market Acceptance:
    - Primary Approach: Leverage MVP for quick adjustments based on early feedback.
    - Fallback Plan: Conduct swift market research and adapt features and marketing strategies based on initial reception.

Probable Technical Requirements (Updated):

- Development Tools:
    - Flutter for Android app development.
    - Pygame for PC game development.
    - Websockets – Framework for communication between smartphone and pc.

- Networking:
  - Initial implementation of basic networking features.
- Hardware and Software:
  - Testing on a limited set of devices and PC configurations.
  - Focus on essential features for the initial release.

Future Plans:

- *Monetization Strategy:* Consider implementing a freemium model with in-app purchases for enhanced gaming experiences or cosmetic upgrades.
- *Community Engagement:* Integrate social media features for players to share achievements and invite friends, fostering a sense of community.
- *Accessibility Features:* Ensure the game is accessible to a diverse audience by incorporating features like customizable controls and subtitles.

Conclusion:

The revised plan focuses on developing a Smartphone-Controlled Multiplayer Game, ensuring an efficient development cycle. The added points enhance the project's potential success, addressing additional aspects like monetization, community engagement, and accessibility. Adjustments in risk management and technical requirements maintain the project's feasibility within the 8-week timeframe.