HACETTEPE UNIVERSITY
ENGINEERING FACULTY
DEPARTMENT OF COMPUTER ENGINEERING

BBM 325

INTERNSHIP REPORT

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Performed at

Mixer Oyun Yazılım ve Pazarlama A.Ş.

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30 days

TABLE OF CONTENTS

1 Introduction

- Mixer Games is a game company located in Istanbul/Türkiye. I chose Mixer Games for my internship since I am planning to seek a career in game development.
- I integrated, developed and fixed games for the company's own mobile gaming platform, Fundle.

2 Company Information

2.1 About the company

- Mixer Games is a mobile gaming studio, located in Ataşehir/İstanbul.
- The team consisting of 5 is relatively small yet everyone in the team is fully fledged in their respective areas. Efficiency is very high in the company.
- Company’s main expertise is in the mobile gaming industry.
- In Mixer, we develop an all-in-one social gaming platform called Fundle. It currently includes 20 games with many more to come.
- Main stakeholders of the company are the team of 5 and undisclosed investors of the company.

2.2 About your department

- I participated in the only department of the Mixer Games, a small independent studio with a head count of 5.
- My director, Deducted is the software lead of the company and also supervisor of the internship process. I directly reported to him.
- I worked closely with the game designer and the project manager of our team since games are highly cross-disciplinary products and Mixer Games has a flat structure.

2.3 About the hardware and software systems

I used an Apple Macbook Pro and an external display during my internship and used Unity game engine, JetBrains Rider and Google Firebase on a daily basis.

2.4 About your supervisor

- Name: Deducted
- Location: Deducted

- GSM: Deducted
- Email: deducted@deducted.com
- Education: Deducted
- Year of graduation: Deducted

3 Work Done

- The main project I contributed to was **Fundle**, an all-in-one social gaming platform with 20+ casual mobile games. My tasks included game development, integration, bug fixes, and performance optimization for this platform.
- The work I performed was critical for ensuring the games' stability, enhancing user engagement, and meeting the platform's quality standards.
- My work was motivated by the need to provide users with smooth and enjoyable gaming experiences while supporting Mixer Games' goal of expanding Fundle's user base.
- I developed algorithms, such as procedural level generation and optimization routines, to improve game functionality and efficiency.
- Hardware and software used included:
    - Apple MacBook Pro with an external display.
    - Unity Game Engine for development.
    - JetBrains Rider as the IDE for scripting.
    - Google Firebase for backend services like analytics and authentication.
- Software tools and design methods:
    - Implemented UI/UX principles to enhance mobile game interfaces.
    - Used Unity's animation tools to create seamless transitions and interactions.
- Testing methods and tools:
    - Used Unity's Play Mode testing for debugging and gameplay refinement.
    - Leveraged Firebase Crashlytics to monitor and resolve runtime issues.
- Project management processes included:
    - Following Agile methodology with daily stand-ups and sprint planning.
    - Tracking tasks and progress using Notion.
- Adhered to engineering standards such as maintaining clean, readable, and well-documented code, and aligning with Unity’s optimization guidelines for mobile platforms.
- Configuration and maintenance tasks included:
    - Integrating Firebase SDK into new game modules.
    - Updating Unity projects to align with the latest version for compatibility.
- My contributions included independently developing features for existing games, implementing multiplayer functionality, and creating in-game tutorials. I also resolved

bugs identified by QA and optimized resource management in Unity scenes to reduce memory consumption.

4 Performance and Outcomes

4.1 Applying Knowledge and Skills Learned at Hacettepe

During my internship, I applied principles from Object-Oriented Programming to design maintainable and efficient game mechanics in Unity. My knowledge of algorithms and data structures, acquired through coursework, was particularly useful when optimizing resource management and game performance.

4.2 Solving Engineering Problems

One of the main problems I addressed was optimizing scene load times for mobile devices, which required analyzing memory allocation and reducing asset size. Additionally, I integrated Firebase analytics to track player behavior, resolving compatibility issues between Firebase SDK and Unity during the process.

4.3 Teamwork

I worked within a small, cross-functional team of five. My supervisor, Deducted, was the lead software engineer, while the project manager and game designer, Deducted, coordinated tasks and deadlines. The game designer focused on gameplay mechanics, and I collaborated closely with them to implement features. The team dynamics were highly collaborative, and I communicated regularly to ensure alignment on project goals.

4.4 Multi-Disciplinary Work

My role often required collaboration with the game designer, whose expertise was in user experience and creative design rather than programming. Together, we brainstormed and implemented game features, combining their artistic vision with my technical skills to deliver functional and visually appealing results.

4.5 Professional and Ethical Issues

I observed ethical considerations in code quality, such as ensuring proper attribution for third-party assets and adhering to licensing agreements. Data privacy was another key issue, as we used Firebase to collect user analytics while complying with GDPR requirements. These issues were addressed through team discussions and adhering to company guidelines.

4.6 Impact of Engineering Solutions

I gained an understanding of how engineering decisions impact user engagement and platform scalability. For instance, optimizing game performance reduced user frustration and increased retention. Furthermore, integrating analytics allowed the team to make data-driven decisions to improve Fundle.

4.7 Locating Sources and Self-Learning

I relied on various resources for self-learning, including Unity's official documentation, Firebase developer guides, and programming forums like Stack Overflow. These sources were crucial for debugging, learning advanced Unity techniques, and integrating third-party libraries.

4.8 Using New Tools and Technologies

During the internship, I became proficient in Firebase tools such as Crashlytics and Realtime Database. I also deepened my knowledge of Unity's particle systems and animation tools. By the end of the internship, I had a solid understanding of these technologies and their practical applications.

5 Conclusions

During my internship at Mixer Games, I contributed significantly to the development and optimization of games on the Fundle platform. My responsibilities included adding new features, debugging, and optimizing game performance to enhance user experience. I also collaborated closely with my teammates, ensuring the seamless integration of technical solutions with creative designs.

The internship provided a practical application of the skills and knowledge I acquired at Hacettepe University. Concepts such as object-oriented programming, algorithm design, and teamwork were instrumental in my daily tasks. I also learned new technologies like Firebase and strengthened my problem-solving abilities by addressing real-world challenges in game development.

Overall, the experience has prepared me for a career in the gaming industry by broadening my technical expertise and improving my understanding of interdisciplinary collaboration.

References

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