ABSTRAK

Perkembangan industri *game* di Indonesia terus meningkat, termasuk genre platformer 2D yang menawarkan *gameplay* sederhana namun tetap menantang. Penelitian ini bertujuan merancang dan membangun *Geometry Crisis*, sebuah *game* platformer 2D bertema bentuk geometri menggunakan Unity 2021 dan bahasa C#, ditujukan untuk platform PC. *Game* ini menampilkan karakter utama berbentuk lingkaran biru yang harus melewati level progresif, menghindari *trap*, menghadapi *enemy*, serta mengumpulkan *collectible item* berupa buah. Pengembangan dilakukan menggunakan metode Waterfall yang meliputi tahap *requirement*, analisis, desain, pengembangan, hingga implementasi dan pengujian. Fitur yang diimplementasikan meliputi sistem nyawa, checkpoint, *skin* karakter, navigasi menu, interaksi player dengan *enemy* dan *trap*, serta penyimpanan progres. Desain *enemy* dan *trap* dibuat bervariasi untuk menjaga tantangan tetap menarik. Pengujian dilakukan secara fungsional, performa, dan pengalaman pengguna. Pengujian fungsional menunjukkan seluruh fitur berjalan sesuai rancangan tanpa error fatal. Uji performa pada perangkat PC berspesifikasi menengah menunjukkan kestabilan 60 FPS dan waktu loading di bawah 1 detik. Uji pengalaman pengguna terhadap 26 responden menunjukkan mayoritas setuju bahwa kontrol responsif, visual menarik, tantangan seimbang, dan *gameplay* menyenangkan. Kesimpulan dari penelitian ini adalah *Geometry Crisis* berhasil dikembangkan sesuai tujuan dengan *gameplay* progresif, visual konsisten, dan performa stabil. *Game* ini mampu memberikan pengalaman bermain yang menantang namun adil bagi berbagai tipe player. Saran pengembangan ke depan meliputi penambahan tutorial interaktif, variasi *enemy* dan level untuk meningkatkan *replay value*, serta pengembangan versi mobile agar dapat diakses oleh lebih banyak pengguna.

Kata Kunci: *Game Platformer* 2D*, Unity, Geometry Crisis, Waterfall,* Evaluasi Pengguna

ABSTRACT

The growth of the gaming industry in Indonesia continues to rise, particularly in the 2D platformer genre, which offers simple yet challenging gameplay. This thesis aims to design and develop a 2D platformer game titled Geometry Crisis using Unity 2021 and the C# programming language, targeting the PC platform. The game features characters and enemies in simple geometric shapes, along with a progressive level system, lives, checkpoints, traps, and collectible fruit items. The development process follows the Waterfall method, consisting of the requirement, analysis, design, development, and implementation & testing stages. The implementation covers character design, control systems, menu navigation, skin system, player interactions with enemies and traps, and evaluation systems such as level completion, game over, and progress saving. Enemies and traps are designed with variety to ensure gameplay remains engaging and challenging. Testing was conducted in three aspects: functional testing using a scenario-based approach, performance testing on mid-range devices, and user experience evaluation through a Likert scale questionnaire completed by 26 respondents across three player categories (beginner, intermediate, experienced). Results show that all features run well without critical issues. Performance testing confirmed stable 60 FPS with minimal loading time, while user feedback indicated high satisfaction in terms of control, visual design, difficulty balance, and challenge systems. In conclusion, Geometry Crisis successfully delivers an enjoyable, challenging, and visually distinctive gaming experience. It can serve as a reference for developing local 2D platformer games with a unique geometric visual approach. Future improvements may include adding interactive tutorials, increasing enemy and level variety, and expanding to other platforms such as mobile devices.

Keywords: 2D Platformer Game, Unity, Geometry Crisis, Waterfall, User Evaluation