ABSTRAK

Dalam era digital saat ini, generasi muda cenderung lebih tertarik pada konten visual dan interaktif, yang mengurangi minat mereka terhadap cerita rakyat tradisional. Menanggapi pergeseran ini, penelitian ini mengembangkan "Si Pitung: Pahlawan Betawi", sebuah game platformer 2D yang bertujuan mengenalkan kisah rakyat Betawi kepada generasi muda. Game ini, dikembangkan untuk platform Android, menggunakan metodologi *Game Development Life Cycle (GDLC)* dan Model Komputasi *Finite State Machine (FSM)*. GDLC diterapkan melalui tahapan inisiasi, pra-produksi, produksi, pengujian, versi beta, dan rilis. *FSM* digunakan untuk mendefinisikan perilaku karakter. Umpan balik dari pengujian ini akan digunakan untuk penyempurnaan lebih lanjut, memastikan versi final game menyediakan pengalaman bermain yang optimal dan mendidik. Pengujian game melalui black box testing mencakup total 45 pertanyaan, dibagi ke dalam tiga kategori utama: Fungsionalitas Tombol dan Fitur (31,11%, 14 pertanyaan), Mekanisme Game (55,56%, 25 pertanyaan), dan Kualitas Audio dan Visual (13,33%, 6 pertanyaan), masing-masing mencapai tingkat keberhasilan 100%. Pengujian melibatkan pelajar/mahasiswa (86,8%, 33 orang), dosen (2,6%, 1 orang), dan *Software Quality Assurance (SQA)* profesional (10,5%, 4 orang), yang masing-masing memberikan perspektif berharga untuk evaluasi game. Hasil pengujian menegaskan bahwa "Si Pitung: Pahlawan Betawi" berhasil menggabungkan unsur cerita rakyat dalam bentuk game yang menarik dan edukatif, memperlihatkan efektivitas *GDLC* dan *FSM* dalam pengembangan game. Selain pengujian Black Box yang mencakup total 45 pertanyaan, dilakukan juga pengujian keefektifan game sebagai alat pengenal budaya Betawi kepada 25 orang mahasiswa, melibatkan 36 pertanyaan dalam tiga kategori: Pengetahuan Umum (22,22%), Pengalaman Bermain (33,33%), dan Peningkatan Pengetahuan dan Minat (44,44%). Analisis hasil menunjukkan peningkatan signifikan setelah bermain, dengan kenaikan 35% di Pengetahuan Umum, 40% di Pengalaman Bermain, dan 45% di Peningkatan Pengetahuan dan Minat. Keberhasilan ini menegaskan bahwa game berhasil sebagai alat pendidikan dan hiburan, meningkatkan pengetahuan dan minat terhadap budaya Betawi. Penelitian ini membuktikan potensi signifikan game di platform Android sebagai medium efektif dalam melestarikan dan mempromosikan warisan budaya bagi generasi muda.

Kata kunci: Game Platformer 2D, Si Pitung, Budaya Betawi, *Game Development Life Cycle*, *Finite State Machine*, Android, Warisan Budaya.

ABSTRACT

In today's digital era, the younger generation tends to be more drawn to visual and interactive content, diminishing their interest in traditional folklore. In response to this shift, this study developed "Si Pitung: Pahlawan Betawi," a 2D platformer game aimed at introducing Betawi folklore to the younger generation. Developed for the Android platform, the game utilizes the Game Development Life Cycle (GDLC) methodology and the Finite State Machine (FSM) computational model. GDLC was implemented through stages of initiation, pre-production, production, testing, beta version, and release. FSM was used to define character behavior. Feedback from this testing will be used for further refinements, ensuring the final version of the game provides an optimal and educational gameplay experience. The game's testing through black box testing included a total of 45 questions, divided into three main categories: Button Functionality and Features (31,11%, 14 questions), Game Mechanics (55,56%, 25 questions), and Audio and Visual Quality (13,33%, 6 questions), each achieving a 100% success rate. Testing involved students (86,8%, 33 people), academics (2,6%, 1 person), and Software Quality Assurance (SQA) professionals (10,5%, 4 people), each providing valuable perspectives for the game's evaluation. The results confirm that "Si Pitung: Pahlawan Betawi" successfully integrates elements of folklore into an engaging and educational game format, demonstrating the effectiveness of GDLC and FSM in game development. In addition to Black Box testing which covered a total of 45 questions, effectiveness testing of the game as a tool for introducing Betawi culture was also conducted with 25 students, involving 36 questions across three categories: General Knowledge (22,22%), Gameplay Experience (33,33%), and Enhancement of Knowledge and Interest (44,44%). Analysis of the results showed significant improvements post-gameplay, with a 35% increase in General Knowledge, 40% in Gameplay Experience, and 45% in Enhancement of Knowledge and Interest. This success affirms that the game serves as both an educational and entertainment tool, enhancing knowledge and interest in Betawi culture. This research demonstrates the significant potential of games on the Android platform as an effective medium in preserving and promoting cultural heritage for the younger generation.

Keywords*: 2D Platformer Game, Si Pitung, Betawi Culture, Game Development Life Cycle, Finite State Machine, Android, Cultural Heritage.*