

## ABSTRAK

### IMPLEMENTASI METODE *SPEECH APPLICATION PROGRAMMING INTERFACE* DALAM *SPEECH RECOGNITION* PADA *GAME ENDLESS RUNNER* BERBASIS DESKTOP

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Meskipun teknologi video *game* telah berkembang pesat, anak-anak dengan disabilitas, khususnya tuna daksa, sering menghadapi kesulitan dalam mengakses dan berinteraksi dengan *game* digital karena keterbatasan motorik mereka. Genre *game endless runner*, yang menuntut pemain untuk terus bergerak sambil menghindari rintangan, menambah tantangan ini. Penelitian ini bertujuan untuk mengintegrasikan teknologi *Speech Application Programming Interface* (SAPI) dalam pengembangan *game endless runner* dengan menggunakan metodologi *Game Development Life Cycle* (GDLC). Tujuan utamanya adalah untuk meningkatkan pengalaman bermain *game* bagi semua pemain, termasuk mereka yang memiliki disabilitas, dengan cara merancang dan mengembangkan *game* yang memanfaatkan pengenalan suara untuk kontrol karakter, serta mengevaluasi efek penerapan metode SAPI pada aspek *functionality* dan *usability game*. Penelitian ini menggunakan pendekatan GDLC yang mencakup tahap perencanaan, perancangan, pengembangan, uji coba, dan distribusi, serta mengimplementasikan teknologi SAPI untuk pengenalan perintah suara dalam Bahasa Indonesia. Hasil penelitian menunjukkan bahwa *game endless runner* yang dikembangkan, mencapai rata-rata nilai *functionality* sebesar 85% dan *usability* sebesar 88%, mengindikasikan performa yang baik dalam hal fungsionalitas dan kegunaan, serta memberikan pengalaman bermain yang nyaman dan memuaskan. Penelitian ini membuktikan bahwa penerapan teknologi pengenalan suara dapat meningkatkan aksesibilitas dan interaktivitas *game*, menjadikannya lebih ramah untuk pemain dengan disabilitas.

**Kata Kunci:** *Game, Speech Recognition, SAPI, GDLC*

## **ABSTRACT**

### **IMPLEMENTATION OF SPEECH APPLICATION METHOD PROGRAMMING INTERFACE IN SPEECH RECOGNITION IN DESKTOP-BASED ENDLESS RUNNER GAME**

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*Although video game technology has advanced rapidly, children with disabilities, especially those with physical disabilities, often face difficulties in accessing and interacting with digital games due to their motoric limitations. The endless runner game genre, which requires players to keep moving while avoiding obstacles, adds to this challenge. This study aims to integrate Speech Application Programming Interface (SAPI) technology in the development of an endless runner game using the Game Development Life Cycle (GDLC) methodology. The main objective is to improve the gaming experience for all players, including those with disabilities, by designing and developing a game that utilizes speech recognition for character control, and evaluating the effects of implementing the SAPI method on the functionality and usability aspects of the game. This study uses the GDLC approach which includes the planning, design, development, testing, and distribution stages, and implements SAPI technology for voice command recognition in Indonesian. The results of the study show that the endless runner game developed achieved an average functionality value of 85% and usability of 88%, indicating good performance in terms of functionality and usability, and providing a comfortable and satisfying gaming experience. This study proves that implementing speech recognition technology can improve the accessibility and interactivity of games, making them more friendly for players with disabilities.*

**Keyword:** Game, Speech Recognition, SAPI, GDLC