

ABSTRAK
RANCANG BANGUN MODEL *NON-PLAYER CHARACTER* (NPC)
MENGUNAKAN *BEHAVIOR TREE* PADA GAME EDUKASI SIKAP
DAN PERILAKU SOSIAL

(Anjani Tiaraveni 2026 : 135 Halaman)

Penelitian ini dilatarbelakangi oleh kebutuhan media pembelajaran yang lebih interaktif untuk membantu siswa memahami nilai-nilai Pancasila dan perilaku sosial dalam kehidupan sehari-hari. Penelitian ini bertujuan mengembangkan game edukasi berbasis Android bagi siswa kelas II SD Negeri 41 Palembang dengan menerapkan metode *Behavior Tree* untuk mengatur perilaku *Non-Player Character* (NPC). Pengembangan game menggunakan metode *Game Development Life Cycle* (GDLC) yang meliputi tahap pra-produksi, produksi, pengujian, dan pasca-produksi. Pengujian sistem dilakukan menggunakan *Blackbox Testing* untuk memastikan seluruh fungsi aplikasi berjalan sesuai kebutuhan, sedangkan pengujian akurasi *Behavior Tree* digunakan untuk menilai respons *Non-Player Character* (NPC) terhadap kondisi dalam permainan. Hasil pengujian menunjukkan bahwa seluruh fitur aplikasi berfungsi sesuai spesifikasi. Pengujian akurasi *Behavior Tree* memperoleh tingkat keberhasilan sebesar 97,5% dengan kategori sangat baik. Selain itu, hasil evaluasi pembelajaran menggunakan metode N-Gain dari *pre-test* dan *post-test* memperoleh nilai sebesar 0,71 yang termasuk kategori tinggi. Hasil tersebut menunjukkan bahwa game edukasi Jejak Moral efektif dalam meningkatkan pemahaman siswa terhadap materi yang disampaikan. Dengan demikian, game yang dikembangkan layak digunakan sebagai media pembelajaran interaktif serta berhasil menerapkan kecerdasan buatan pada karakter NPC.

Kata Kunci: Game Edukasi, *Behavior Tree*, *Non-Player Character* (NPC), GDLC.

ABSTRACT
**DESIGN OF A NON-PLAYER CHARACTER (NPC) MODEL USING A
BEHAVIOR TREE IN AN EDUCATIONAL GAME ABOUT SOCIAL
ATTITUDES AND BEHAVIOR**

(Anjani Tiaraveni 2026 : 135 Pages)

This research was motivated by the need for more interactive learning media to help students understand Pancasila values and social behavior in everyday life. This study aimed to develop an Android-based educational game for second-grade students at SD Negeri 41 Palembang by applying the Behavior Tree method to manage the behavior of Non-Player Characters (NPCs). Game development employed the Game Development Life Cycle (GDLC) methodology, encompassing pre-production, production, testing, and post-production stages. System testing was conducted using Blackbox Testing to ensure all application functions functioned as required, while Behavior Tree accuracy testing was used to assess Non-Player Character (NPC) responses to in-game conditions. Test results indicated that all application features functioned according to specifications. The Behavior Tree accuracy test achieved a success rate of 97.5%, categorized as very good. Furthermore, the learning evaluation using the N-Gain method for the pre-test and post-test yielded a score of 0.71, categorized as high. These results indicate that the Jejak Moral educational game is effective in enhancing students' understanding of the material presented. Therefore, the developed game is suitable for use as an interactive learning medium and successfully applies artificial intelligence to NPC characters.

Keywords: Educational *Game*, *Behavior Tree*, *Non-Player Character* (NPC), *GDLC*.