

ABSTRACT

Along with the rapid development of technology, the development of the game industry is currently very fast with a variety of genres. For most people, making games may seem like a difficult thing to do. The process and design of the game begins with learning theories about AI, and background design, then making room objects, cockroaches objects, food objects and player objects, where this game will eradicate animal objects.

This game was developed using the *GameMaker Studio* application which uses the Java programming language. The algorithm used is the Roulette Wheel algorithm and Random Walk, in which the Roulette Wheel algorithm selects one individual with the possibility. Random Walk can be analogous to human steps in a straight line / path that can walk to the right and to the left at any time. The Roulette Wheel here functions as a decision maker

Roulette wheel and Random Walk algorithms can help NPCs to determine the path of direction in finding the presence of cockroaches around food. The final result of this final project is a game simulation "Development of cockroach NPC behavior in the game to guard a food" which is equipped with objects that are in Gamemaker Studio 2.

Keywords : *Gamemaker studio 2, NPC, Random Walk, Roulette Wheel*