

ABSTRACT

Games have become the most popular form of entertainment for people of all walks of life, from young to old. As a result of this factor, many game developers are vying to innovate in various game products. In the game there are non-player characters (NPC), which is the main element that makes this game exciting. NPC characters themselves can imitate human and animal behavior by adding artificial intelligence methods, one of which is the finite state machine (FSM) method.

Therefore, in this study, a "Happy Farm" game was designed with the aim of making a farm-themed game. This game uses the FSM method for behavior development on NPC farm animals, predatory animals, and guard animals. NPC farm animals can eat grass if the hunger bar is below 90% and will look for the nearest patch of grass. If the hunger bar is equal to 100%, it will issue a production item.

The results obtained in the design of the farm-themed simulation game "Happy Farm" using the Finite State Machine method are that non-player character (NPC) farm animals can move according to the applied behavior such as walking, being hungry, eating, removing products, and dying. The application of the finite state machine to livestock works well where livestock will change state if the previous state has been fulfilled, such as a hunger state will move to an eat state if the NPC has found grass and eats it. Based on user testing, 11 players spent an average of 1983.09 seconds completing all missions in the game, and in the user questionnaire table, 26 respondents assessed that 42% of respondents considered the game "Happy Farm" very easy to understand, and 42.3% of respondents rated the NPCs in the game. "Happy Farm" is doing well.

Keywords: Game, Finite State Machine, Non Player Character, Farm.