



Hak cipta dan penggunaan kembali:

Lisensi ini mengizinkan setiap orang untuk menggubah, memperbaiki, dan membuat ciptaan turunan bukan untuk kepentingan komersial, selama anda mencantumkan nama penulis dan melisensikan ciptaan turunan dengan syarat yang serupa dengan ciptaan asli.

Copyright and reuse:

This license lets you remix, tweak, and build upon work non-commercially, as long as you credit the origin creator and license it on your new creations under the identical terms.

CHAPTER III

METHODOLOGY

3.1. Research Methodology

The steps taken and method used in doing this research are:

1. Literature Study

This research is based on many literatures using books, journals, reports and websites about multi-agent system, artificial intelligence and shopping centers. All references are used as a basis and rules in building the simulation prototype. The literature studies are also used to assume and extract the rules and attributes that the agents can have.

2. Direct Observation

Data collection is also obtained through direct observation to several shopping centers in Tangerang. Direct Observation includes the analysis of mall layouts, entry doors, and estimating shop properties.

3. Software Design and Analysis

Based on the data collected from various literatures, the simulation is designed with the principles of multi-agent system. The input of the system itself is obtained from various literature, especially about social science. Designing the simulation involves building the 3D environment, designing agent's set of actions and behavior, and testing it.

4. Software Implementation

The simulation is built by using Unity3D. The simulation does not use any 3rd party plugins or APIs. The software will start the simulation based on the layout of the shopping center built. The result of the simulation is shown directly from the simulation's Graphical User Interface (GUI).

5. Software Testing

The testing phase of the simulation prototype involves experts on shopping centers. By using Face Validation method, the software was tested directly by the experts, in this case, mall managers from shopping malls around Tangerang. A questionnaire is also given to measure the accuracy of the simulation and for feedbacks.

6. Report and Documentation

The result of the simulation, references, and all things related to this research is presented and published.

3.2. Time and Location

The research was done following the timetable as follow.

Table 3.1. Research Timetable

	Activity	Time																						
		Sep-13				Oct-13				Nov-13				Dec-13				Jan-14				Feb-14		
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
1	Literature Study																							
2	Software design and analysis																							
3	Rules and Knowledge design																							
4	Software building																							
5	Software testing and improvements																							
6	Documentation and writing																							
7	Presentation																							

The research and simulation implementation was done at Universitas Multimedia Nusantara, Gading Serpong, Tangerang. The testing phase took place in three different shopping centers such as:

1. Giant Paramount, Gading Serpong, Tangerang
2. Summarecon Mall Serpong, Sentra Gading Serpong, Jl. Boulevard Gading Serpong, Serpong, Banten 15810, Indonesia.
3. Supermall Karawaci, Borobudur Raya St., Indonesia.

