csapatnév: Gekkók
Beckwith Édua Lea S8VPR5
Rajczi Barnabás BG2UI2

Intelligent restaurant system

The multi-agent system for the intelligent restaurant will consist of three agents: a customer agent, a waiter agent, and a chef agent. The customer agent will be responsible for placing orders and communicating with the waiter agent. The waiter agent will be responsible for managing the dining area, taking orders, and communicating with the chef agent. The chef agent will be responsible for managing the kitchen, preparing orders, and communicating with the waiter agent.

List of agents with their tasks, relationship of agents, their dependence on each other, behavior of agents, summary diagram of the multi-agent system:

Customer agent: places orders, communicates with waiter agent
Waiter agent: takes orders from customers, communicates with chef agent, serves food to customers, manages dining area
Chef agent: receives orders from waiter agent, prepares food, communicates with waiter agent

The customer agent and the waiter agent will communicate using the FIPA ACL message protocol. The waiter agent and the chef agent will also communicate using the FIPA ACL message protocol.

The customer agent will initiate the conversation by sending a message to the waiter agent to place an order. The waiter agent will then send a message to the chef agent to prepare the order. Once the order is ready, the chef agent will send a message to the waiter agent, who will then serve the food to the customer.

Development summary:

Jason version 2.0 will be used for this implementation.
The multi-agent system will be developed at the ASL level.
The user interface of the program will consist of a simple parameter input GUI for simulating the sensory physical information acquisition of the agents.
The BDI model will be used to program the agents' behaviors.
The entire program will be implemented as a multi-agent system.

Description of the developed program:
The program will consist of three main modules: the customer agent, the waiter agent, and the chef agent.

The customer agent will be responsible for placing orders and communicating with the waiter agent. The customer agent will have a BDI belief about the menu items, desires, and preferences. When the customer decides to place an order, the customer agent will send a message to the waiter agent with the order details.

The waiter agent will be responsible for managing the dining area, taking orders, and communicating with the chef agent. The waiter agent will have a BDI belief about the customer orders, dining area status, and kitchen status. The waiter agent will receive orders from the customer agent, communicate with the chef agent to prepare the order, and serve the food to the customer.

The chef agent will be responsible for managing the kitchen, preparing orders, and communicating with the waiter agent. The chef agent will have a BDI belief about the order queue, kitchen equipment, and ingredients. The chef agent will receive orders from the waiter agent, prepare the order, and send a message to the waiter agent when the order is ready.

Overall, the multi-agent system will be able to handle customer orders, manage kitchen activities, and provide a seamless dining experience.