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# **SENG-696 Agent Based Software Engineering**

Research Matchmaking

**Detailed Design Document**

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2. **INTRODUCTION**

It has been observed that “researchers” all over the world who works on developing a new technology needs some assistance or are depends on other innovators’ materials like research papers, equipment or other some specific tools. However, the material they need is not available to them while they do the research, so they must connect with fellow researchers to progress in the project. Moreover, some research needs other researcher’s data to analyze and use it for further development. There is a time when one needs a material but could not find in one’s university or at a workplace so it would become difficult for them to follow the research and complete in time. This requires a time and effort of each others to materials over the internet and this takes time as there is no other equivalent way to solve this problem.

The idea behind this project is to implement the proposed topic by using agent-based methodologies using the JADE framework. This works by including the jade jar in the java application however it should be started at the jade.Boot.

This project proposed a solution to bring all the researchers at one place and connect with each other without worrying about mundane task of contacting and negotiating about terms and conditions. In this project one can find the required material by putting the keywords and search for the providers.

1. **System Overview**

This system has three types of users namely provider, client and guest. One needs to register to find or provide the services one is looking for. Client can search for provider using different kinds of filters. On the other hand, Provider needs to choose between two types of account either premium or basic. Once the client able to find suitable provider, client can communicate via chat and make a deal with provider. Both parties have power to accept or reject the offers.

After accepting the common term both needs to sign an online contract and afterwards both parties can communicate over the secure chat and can see the progress of the project. Both parties can view the progress of the project. At the end of the process both can choose to terminate the contract or can extend it. This needs to be done by the same platform.

This below figure provides the system architecture of the jade agent-based research matchmaking. It has various types of agents and each has interface.

**Figure**

Diagram

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1. **Analysis Phase**

* Goal Hierarchy:

Figure

* Use case Diagram:

Figure

Diagram

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The goals are captured to represent the behaviors in the system. The GUI consists of GUI Interface specifying agents like provider, user and guest. User is the one who has not yet made the account can only search the materials the one is looking for but cannot bid on it. A JFrame GUI is provided for consumers to access the platform with convenience.

1. **Actors**

the basic concepts of QC, including quantum entanglement, quantum measurement and quantum teleportation.

1. Guest
2. Provider
3. Client
4. Guest:

Guest is the one which has only one functionality is to search for the provider who delivers the materials to fulfill the guest requirements. However, Guest cannot bid to the provider’s materials because one needs to be registered as a client to bid on providers materials.

1. Provider:

Provider agent provides services like registering itself as a provider in the system. Afterwards provider can point out which material or research paper one is providing to the consumers. After that provider will receive number of bidders’ request for renting the materials. Here provider can either accept the request or reject the request of the bid. Moreover, Provider can have a chat with the client and watch a progress of the period of research.

1. Client:

Clients agents has numerous services it has. It can search the right provider then bid on the provider. Afterwards accepting the terms and condition of the provider it has the material it needed. Client has methods to watch over the feedback the provider has received and can provide the feedback after the time of the project is over.

* Sequence Diagram:

Figure:

1. **Steps to run application:**