Research Matchmaking

SENG 696 | Fall 2021

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Content

Introduction

Researchers all over the world who works on developing a new technology needs some assistance or are depends on other innovators' materials such as research papers, equipment or other some specific tools. However, the material they need is not always available. Therefore, they need to connect with fellow researchers to progress in the project. In addition, there are some situations that researchers' work progress highly depend on each others' research. However, maybe their research is time-sensitive and need to be done in specific time flow. So reaching to those material becomes very critical. Hence, it is the best to find a solution by which researchers can find the code, data, or project of the other researcher in far less time and more easily.

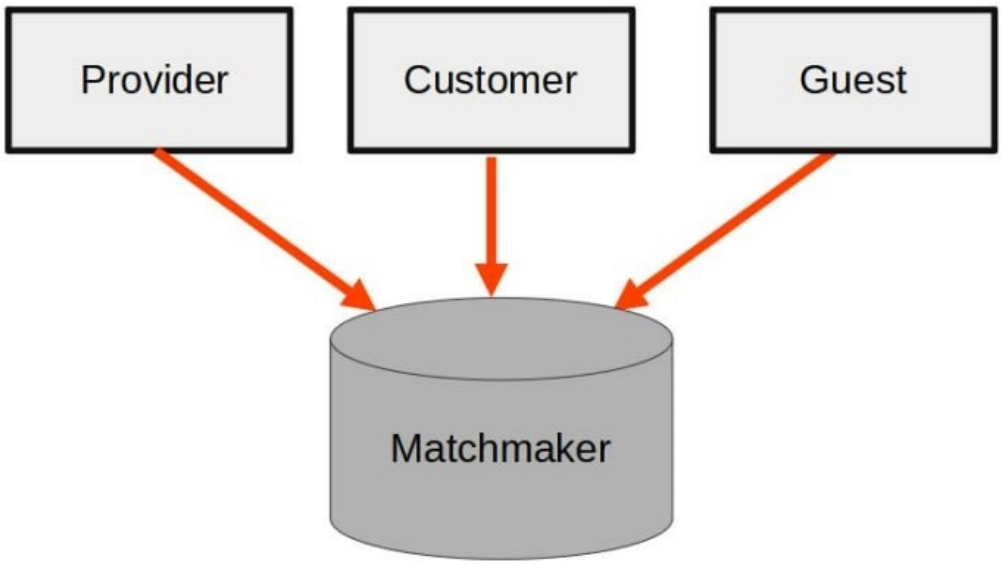
The problem mentioned above, is the core idea beyond our project which we aim to build by using agent-based methodologies in the JADE framework. This works by including the jade jar in the java application however it should be started at the jade.Boot.

Our project includes three main steps; We use GAIA as our methodology that is one of the best methodologies for design and analysis. Firstly, we present the analysis part by defining role models. Second, we document the interaction model and its graph. Lastly, we define agent model, service model and acquaintance model in order to design part.

This project aims to bring a solution for researchers to connect to each other in different locations and easily share their knowledge 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.

System Overview

Customer, guest and provider are the main characters of the system. Provider must select one of two basic and premium accounts that have different functionalities. Customer searches among providers. He can use filters to narrow down the search result and he can start chatting with provider. If they both accept an offer and sign the online contract they can continue chatting about the progress of the project. Customer may request for change in the project after signing the contract. But provider must review and may accept or reject that. Customer may have personal preference on his account. System is responsible to managing the contract or transiting the payments. 30% of the payments will be paid to the system as the earning. The goal of the system is to handle payments with minimum effort of both provider and customer. The overall architecture of our design is shown in below picture.



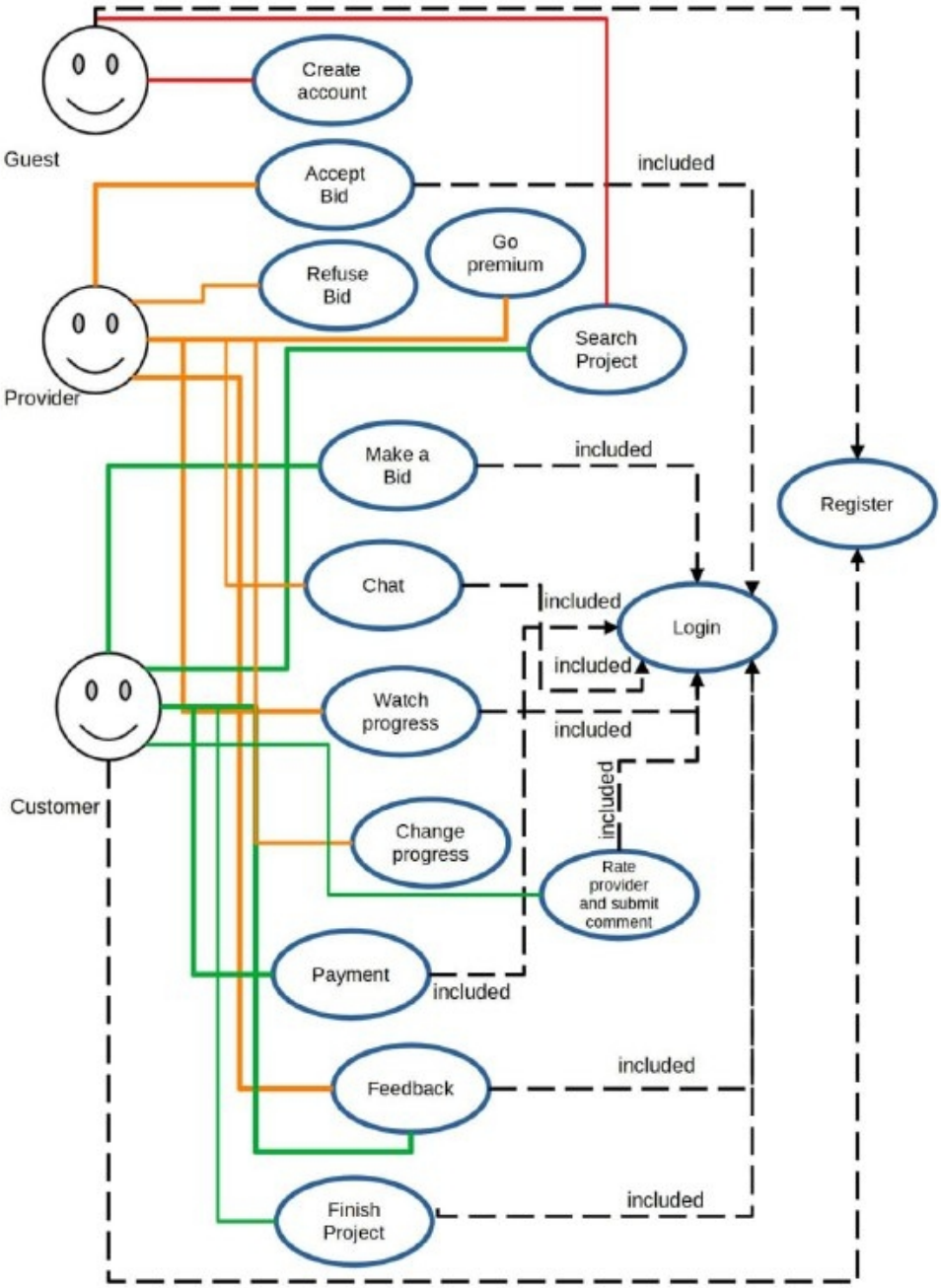
Analysis Phase:

Goal:

The overall goals are captured to represent the behaviors in the system. A GUI (graphical user interface) is a system of interactive visual components for computer software. A GUI displays objects that convey information, and represent actions that can be taken by the user. The objects change color, size, or visibility when the user interacts with them. In our design, the GUI consists of GUI Interface specifying agents such as 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.

Analysis Phase:

User case Diagram sample:



Actor

The basic concepts of QC, including quantum entanglement, quantum measurement and quantum teleportation. It contains three main components which are listed below;

1. **Guest**
2. **Provider**
3. **Customer**

In the following, we will provide more explanation for each of these components.

1. 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 customer to bid on providers materials.

2. 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 customer and watch a progress of the period of research.

3. Customer:

Customer 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. Customer has methods to watch over the feedback the provider has received and can provide the feedback after the time of the project is over.