

Tema 1 - POO - Oprea Theodor-Alin 324CC

We are hiring

Time to implement - more than I am proud to admit (approximately 3-4 hours a day since 22 December 2020 till 21 January 2021, with some days off)

Main Application: I respected all imposed classes and methods but added a few modifications of my own which will help with the Graphic Interface, such as implementing a `LimbaStraina` class to manipulate data regarding the languages known and the proficiency level, implementing a `ConsumerNode` class to use during the BFS algorithm in determining the degree of friendship between 2 users, as well as a `Notification` class, later helping with the Observer Pattern. Moreover, I added a bunch of getters and setters in the `Consumer` class to get data from the `Information` from inside the `Resume` more easily, which can operate either with a string as argument or a `Date` (in the case of getter and setter of Birth date), as well as a method in the `Finance` department to determine the time spent in this job for the given employee. I also considered some things to be true, such as the experience years should be approximated to the immediate superior value, for example, one year and one month will be considered 2 years, or when computing the budget, I added the taxes to the salary then added the whole sum to the budget (as opposite to subtracting the taxes which I found less logical), and that the recruiters' score should be increased only after they register a request, not increasing if the user doesn't meet the requirements.

Testing: for testing I use `json.simpleparser.1.1.1`, a useful tool to parse the json files. I also added 2 more json files, one for the companies info, containing information about the departments, employees, jobs and recruiters, and one for the friends network, being a list of "graph" edges. In the `Test` class I parse these files and add the data to the application, firstly reading all the managers, users, employees and recruits, then parsing the companies and adding the manager, employees and recruiters at the same time, the parsing the network file in order to fill in the friend connections in the app.

Design Patterns: I implemented the application as a singleton, in order to keep and show the same data to all users, I implemented the apply and hire process using the Observer Pattern, when applying for a job to a company, the user is added to the company's observer list and when a job is added/closed, or the user's application has been solutioned, a notification with the outcome is sent to the user. I implemented the `Resume` with a Builder Pattern, the user being able to build his resume the way he likes, although considering some restrictions, such as filling in all personal info data and having at least one Education added. The Department construction was handled using a Factory Pattern, the factory returning an object matching the requested type, for example, if needing an IT department, the factory will receive an "IT" string as argument.

Graphic Interface: I implemented the required pages, alongside a bunch of other pages for bonus. The basic ones are the admin page, accessible with username admin and password admin from the login page, it has 2 `JScrollPane`s which allows the admin to see details about either the selected company or the selected user in the 3 lower panels, the left one has general info, the middle one has Departments or Educations info and the right panel has Budgets or Experience info (depending on the selection, either a company or a user). In the admin page we also have a button to open a Search Page in order to open a Profile Page (with limited permissions) containing data about the searched user. The Profile Page is similar between one for a User, one for a Recruiter and one for an Employee, the User has

a special button to find jobs suited for him in the menu panel while the Recruiter can search for talents. The Profile Page has the following options regardless of the Logged in Consumer: sending a friend request, searching for another user, viewing his/her own inbox with notifications and friend requests, edit all information (general info, education info, experience info and language info) as well as log out of the app. The Manager Page gives the manager the possibility of viewing all his/her job requests and process them either individually, accepting or declining them, or automatically with an algorithm. Also, the manager can view general information about the company.

Bonus: For the bonus part I focused mainly on the Graphic Part, giving the user as most access to the application's core functionality as possible. For this, I added a Log in Page which opens a personal Profile Page for each consumer depending on their type, either Manager, User, Recruiter, Employee or admin. For reasons of simplicity and as a proof of concept, I considered each user's username as being their name and the user's password as the surname, with "admin" and "admin" for the admin. If the user has no account, they can create a new account by pressing the sign in button, which will apply the Builder Pattern in building the new user's resume. Further more I added some extra functionality to the Profile Page: menu button to toggle a menu, view the consumer's inbox and friend requests, edit personal information regarding general info, education, experience and languages spoken and perform a special action, if the consumer is a User, I added the ability to apply to companies that the user is interested in, for jobs that the user is qualified for and if the consumer is a Recruiter then he can find Users that meet the requirements of a chosen job and send a request to the manager. In the Manager Page I added a button to go to a Company Page which will show details about the company and a recruiter rank, as well as some action buttons to add a department, an employee, move an employee, a department, remove an employee, remove a recruiter.

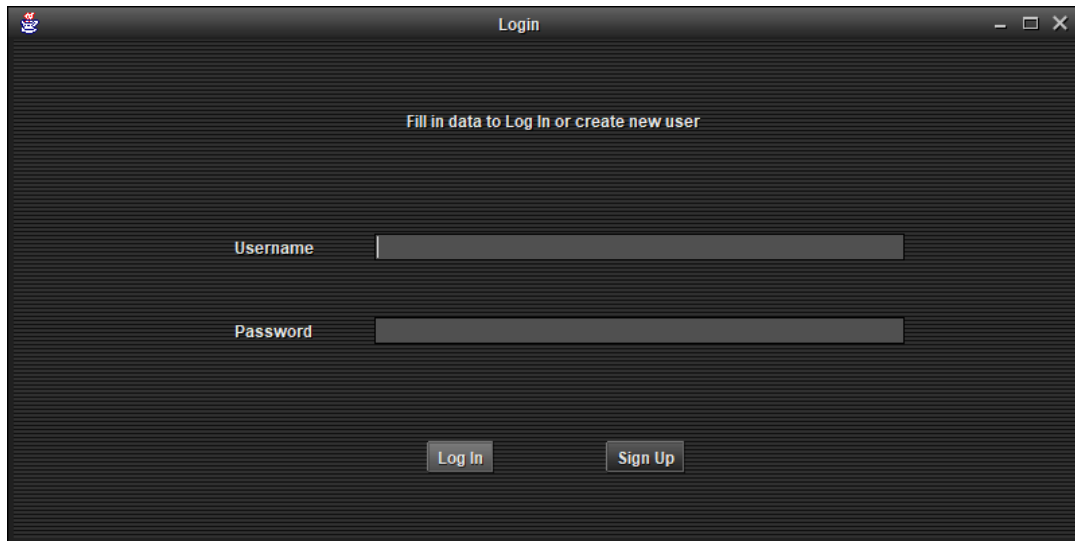
Thus, as bonus I added:

- Log in Page and login system
- Sing up Page and signup system
- Inbox which ties the Observer Pattern to the Graphical Interface
- Friend requests inbox and a friend request system
- Personal profile page for each type of user: User, Recruiter, Employee and Manager
- Ability to edit all personal information and add/remove languages/educations/experiences
- Apply page and possibility for user to apply to a job
- Recruit page and possibility for recruiter to add requests for users he finds "talented"
- Ability to access a searched user's profile page with different permissions (all for profile page owner, limited for admin and none for visitor) while being able to see all information of that user
- Toggle Menu Panel using a button
- Look and Feel using JTattoo

- Company Page with general information, recruiter rank and the following company methods accessible: add department, add employee, fire employee, remove department, remove recruiter, move department, move employee

- Manager's possibility to process request either individually or collectively in the GUI

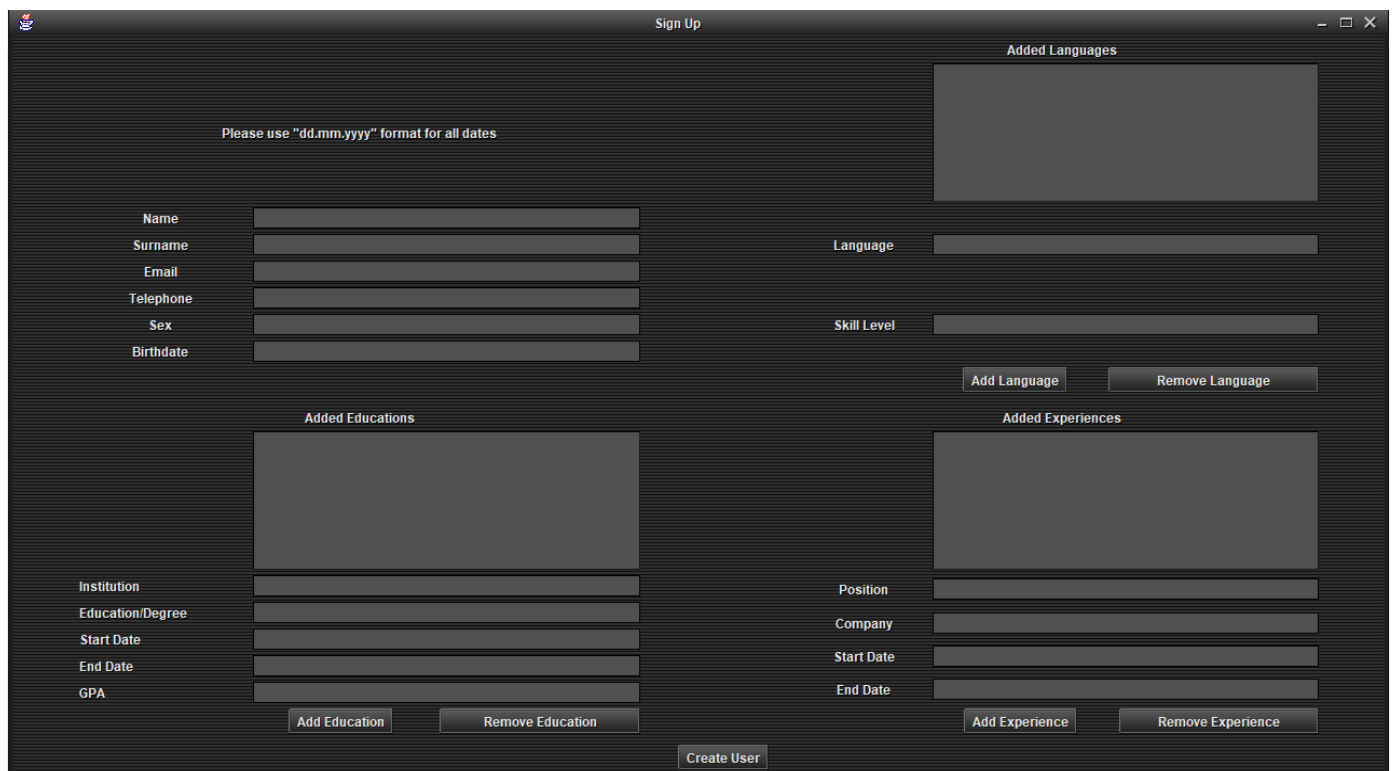
Login Page



The Login Page is a dark-themed window titled "Login". It contains a central instruction: "Fill in data to Log In or create new user". Below this, there are two input fields: "Username" and "Password". At the bottom, there are two buttons: "Log In" and "Sign Up".

Username: name Password: surname (proof of concept)

Signup Page



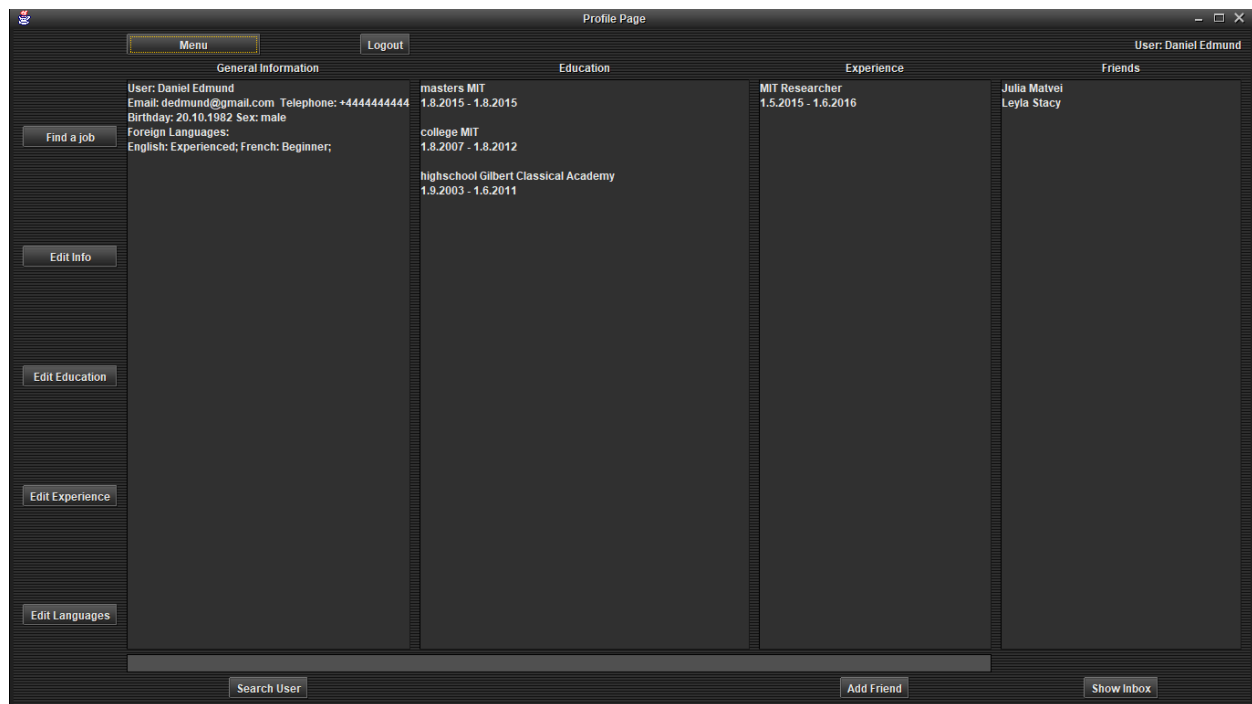
The Signup Page is a dark-themed window titled "Sign Up". It contains a central instruction: "Please use 'dd.mm.yyyy' format for all dates". The page is divided into several sections for data entry:

- Personal Information:** Name, Surname, Email, Telephone, Sex, Birthdate.
- Added Languages:** A list box for added languages, a Language input field, and a Skill Level input field. Below these are "Add Language" and "Remove Language" buttons.
- Added Educations:** A list box for added educations, and input fields for Institution, Education/Degree, Start Date, End Date, and GPA. Below these are "Add Education" and "Remove Education" buttons.
- Added Experiences:** A list box for added experiences, and input fields for Position, Company, Start Date, and End Date. Below these are "Add Experience" and "Remove Experience" buttons.

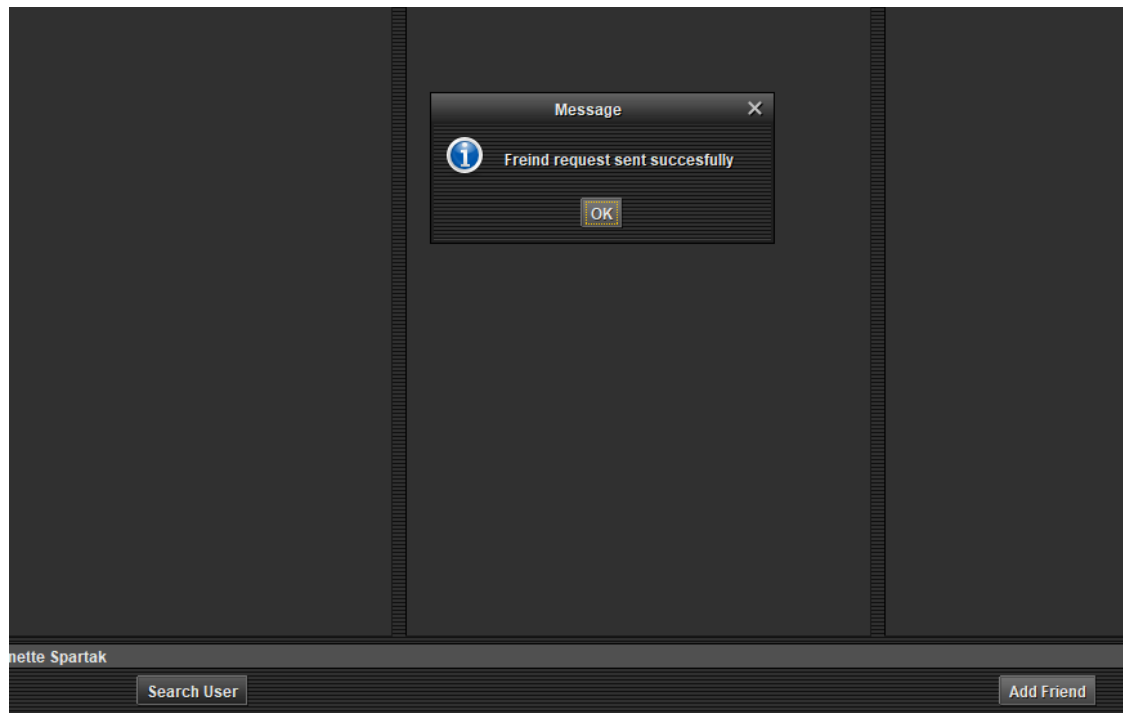
At the bottom center, there is a "Create User" button.

Uses Builder Pattern, using “dd.mm.yyyy” format for dates

User's profile page



Menu button toggles the left panel on and off, turning visible and invisible



Upon sending a friend request (Daniel Edmund sent a friend request to Linette Spartak)

Sample of editing the general info and educations for the user Daniel Edmund

The screenshot displays a user profile editing interface for Daniel Edmund. It consists of two main panels: 'Edit Info Page' on the left and 'Edit Education Page' on the right.

Edit Info Page:

- Instructions: Please use "dd.mm.yyyy" format for dates
- Fields: Name (Daniel), Surname (Edmund), Email (dedmund@gmail.com), Telephone (+4444444444), Sex (male), Birth Date (20.10.1982)
- Action: Save Info

Edit Education Page:

- Instructions: Please use "dd.mm.yyyy" format for dates
- Text: ed 8 2015 to 6 2015, 4 8 2007 to 8 2012, academy highschool started 9 2003 to 6 2011
- Fields: Institution, Education/Degree, Start Date, End Date, GPA
- Actions: Remove Education, Edit Education, Add Education

Bottom Panel:

- Buttons: Edit Education, Edit Experience, Edit Languages
- Search Bar: Julia Matvei, Search User
- Buttons: Add Friend, Show Inbox

Apply page sample: Daniel Edmund applied to Software Developer Engineer @ Google

The screenshot shows an application page titled 'Apply Page' with the subtitle 'Available jobs for: Daniel Edmund'. The page is divided into two main sections: 'Google' on the left and 'Software Developer Engineer@Google' on the right.

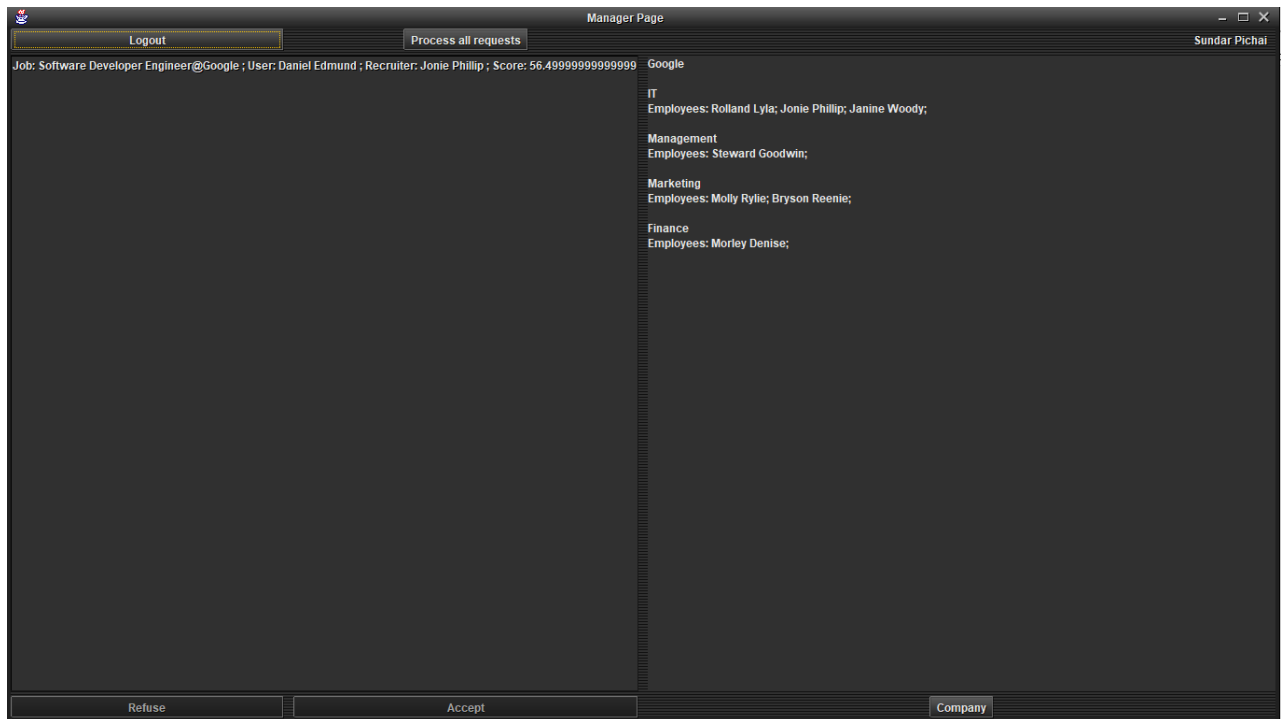
Message Dialog:

- Icon: Information (i)
- Text: The request was submitted successfully
- Button: OK

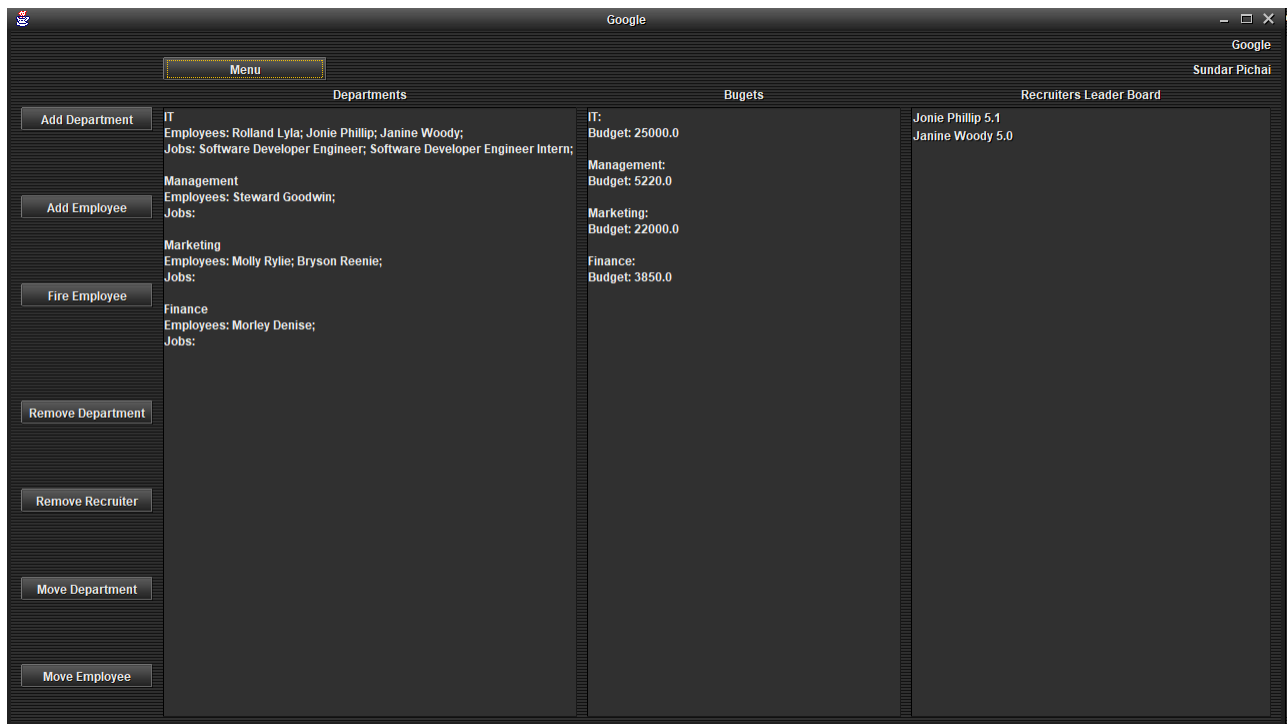
Bottom Panel:

- Button: Apply

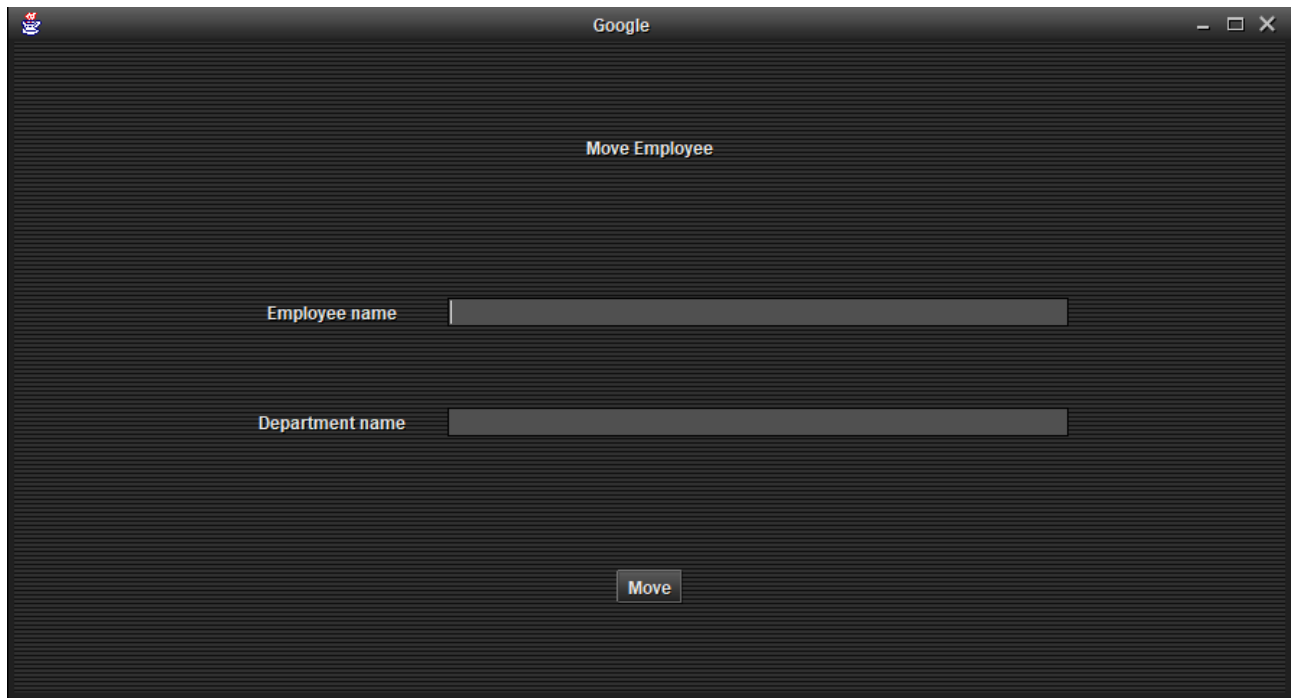
Manager Page with the request from Daniel Edmund



Company Page with action buttons in the left panel



Company Action Page sample (from move employee)



A screenshot of a web browser window titled "Google". The page content is titled "Move Employee". It features two text input fields: "Employee name" and "Department name". Below these fields is a "Move" button.

Google

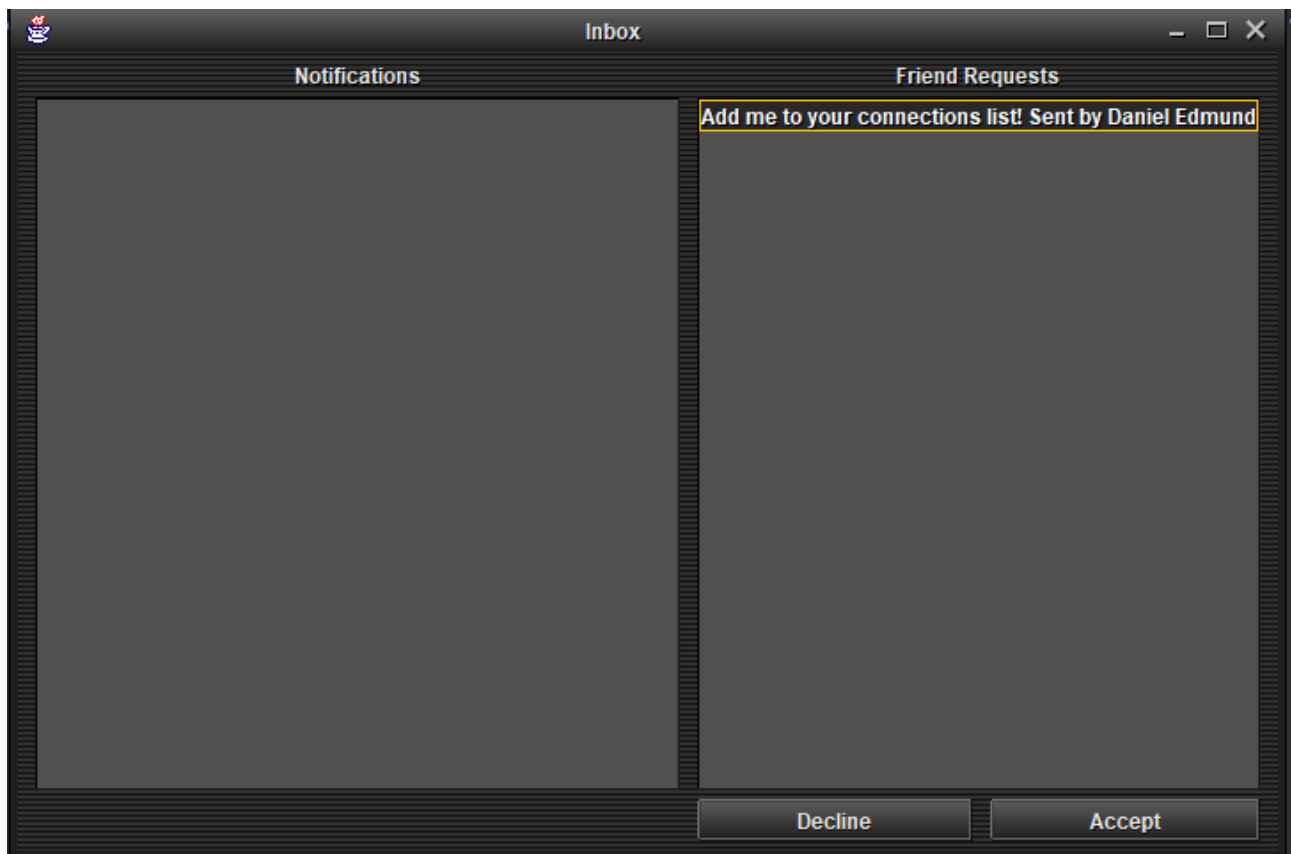
Move Employee

Employee name

Department name

Move

Inbox and Friend Request Page sample



A screenshot of a web browser window titled "Inbox". The page is divided into two main sections: "Notifications" on the left and "Friend Requests" on the right. The "Friend Requests" section contains a request from "Daniel Edmund" with the text "Add me to your connections list!". Below the request are "Decline" and "Accept" buttons.

Inbox

Notifications

Friend Requests

Add me to your connections list! Sent by Daniel Edmund

Decline Accept

Find new talents Page (as shown from Jonie Phillip's page)

Apply Page

Possibe Recruits

Software Developer Engineer@Google
Software Developer Engineer Intern@Google

Julia Matvei
Tamara Haci

Place Request