Intelligent Programming (ITB401T)

NEWS FEED READER APPLICATION

Research Project

Submitted in partial fulfilment of the requirements for the degree

BACCALAUREUS TECHNOLOGIAE: INTELLIGENT INDUSTRIAL SYSTEMS

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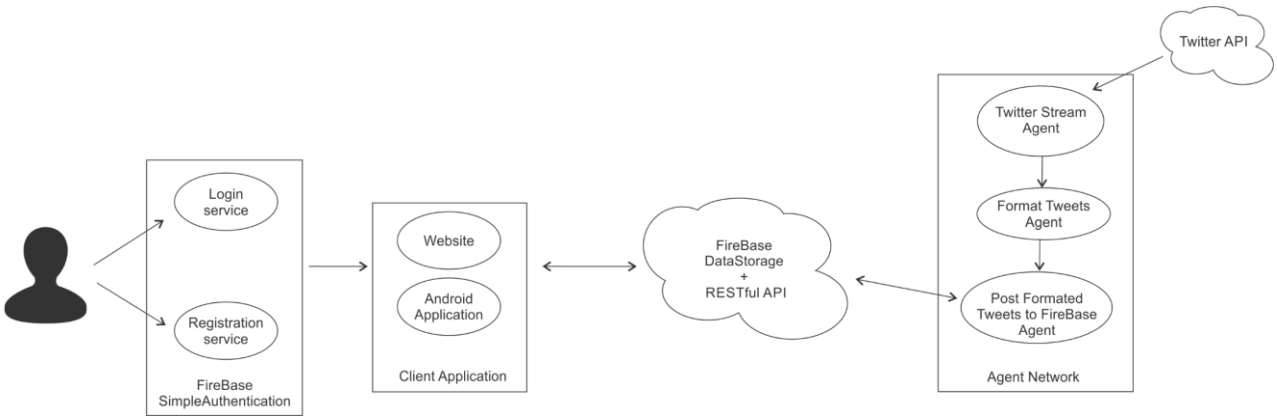
Use case

For this project we were required to demonstrate a simple integration of Web services, RESTful Services, Semantic Web Services, Cloud services and software agents. The context of our implementation is one of a News feed reader. The application should allow a user to create/login to an account. Once logged in the latter can set URL to news websites he would regularly visit. The application would then in at a given interval of time check for news and push them to the user via a web/Mobile application.

Further details are provided below on the architecture used to implement the system and how every services and agent(s) will interact together.

Sequence Diagram

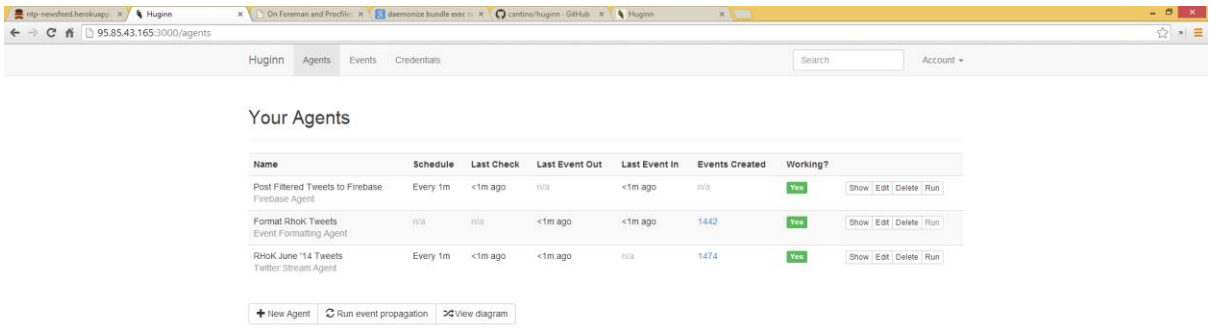


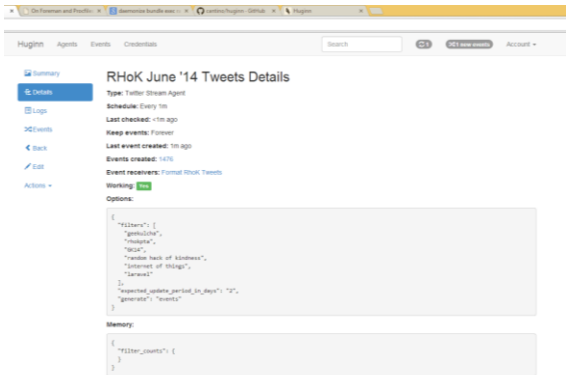
Tools and Client Applications

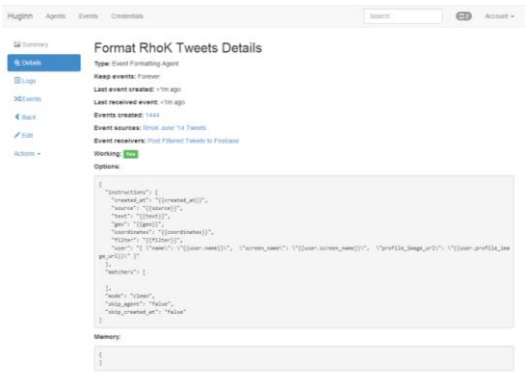
Huginn

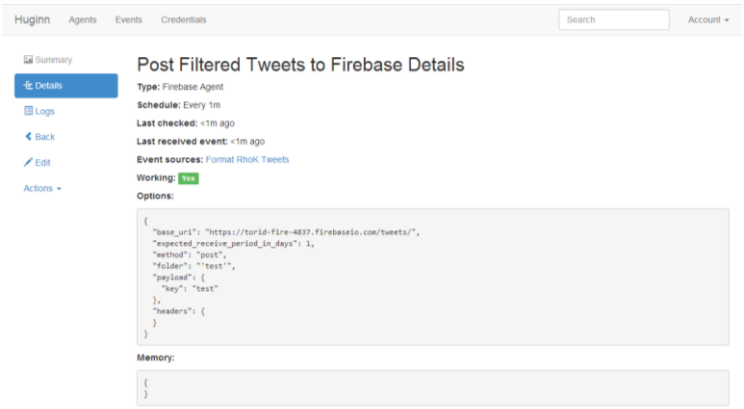
In order to implement the agents used for this system we made use Huginn. Huginn as described by its developer is a system for building agents that perform automated task online. The application is developed using the Ruby on Rails framework. Huginn comes with ready to use agents but also leaves door to create more customized agents that suits the needs of your application.

Below is a snapshot of our instance of Huginn currently accessible at the following address: http://huginn.diraulo.me









We made use of two prebuilt agents (Twitter Stream Agent & Event Formating Agent) and we wrote our own agent to perform one of the task we had to execute.

Twitter Stream Agent: This agent follows the Twitter stream in real time, watching for keywords or filters provided by the user. All the events recorded are then passed over to an Event Formating agent.

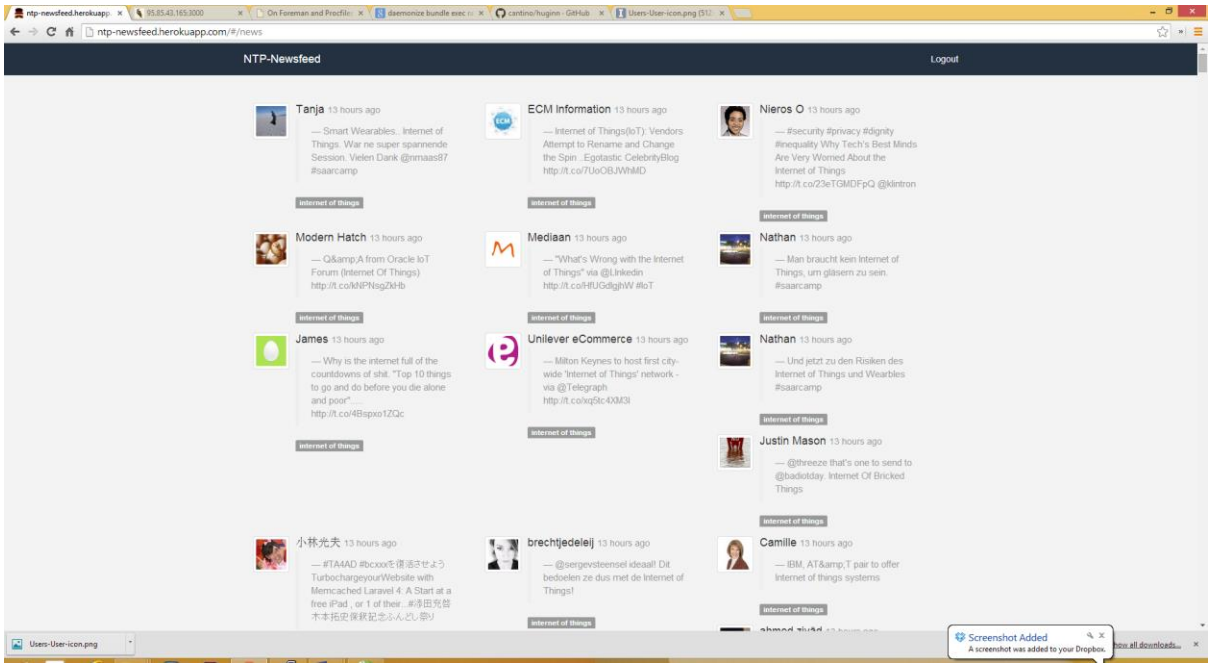
Event Formatting agent: This agent allows to format incoming events, to a more readable format and even allows to add new fields if needed. In our case we needed to take specific bits of information from the twitter results and format them before posting to the FireBase[1] a cloud base service allowing us to store all the collected data and making them available to our client application via a RESTful API using the FirebaseAgent.

FirebaseAgent: We wrote an agent (All code will be hosted on a github repository, link provided in references) to capture all received and formatted tweets and post them to our firebase repository.

[1] FireBase (www.firebase.com)

The Website

We wrote an AngularJS application using AngulaFire plugin for FireBase providing us with a three-way data binding between the client app and FireBase storage. This allowed us to have content pushed to the front end page as soon as they became available in the data storage on Firebase.

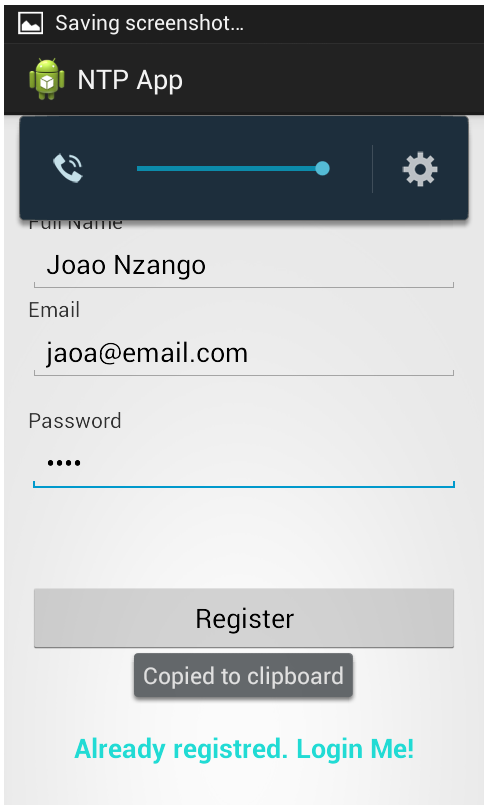


The Android Application

The android application follows the same pattern as our website. In the android application we have three services one for logging in, the second for handling user registrations, and the other to that manages received data to collect relevant posts.

We chose to add an Android application for the user's convenience, this is because most of the users have smart phones and the majority of these smart phones are running an Android operating system.

Welcome screen of the app is a login page where users with accounts can sign in and there is a button that allows users who need an account to register, when registration is done users are taken to the first page to sign in using their newly created credentials.


Saving screenshot...
NTP App
Joao Nzango
Email
jaoa@email.com
Password
Register
Copied to clipboard
Already registred. Login Me!

Team Contribution

R. DIFFOUO

Application deployment to Cloud Virtual Private Server

Development of the FireBase Agent for Huginn

Integration with the other existing agents.

Contribution to the development of the web client application

Joao Nzango

Contribution to the android application development

Adding capability for a user to log in using Firebase simple authentication service as well as giving capability for a user to create an account using the same service

Research on finding which agents and services to use for the project

Monama IK

Was mainly responsible for building a client Application (Android) to replicate functionalities on website. Login service, User Registration and Data collection service for the Android application

References

Final Project Github Repository:

https://github.com/diraulo/ntp-newsfeed

Huginn Repository

https://github.com/cantino/huginn

Web application

http://ntp-newsfeed.herokuapp.com/

Very good. This is great. I have learnt something out of this