

Future work Summary

Student: Yuntian Shen

Email: yuntian.shen@sjsu.edu

Research Assistant: Fuyao Zhang

Email: funyao.zhang@sjsu.edu

Briefly Summary

1. Dynamically instance creation
2. More encryption options
3. Trigger process through other strategy (now is creating files manually)

Explanation in details


In this chapter, I will explanation the three items listed in the work list above. I will explain them separately from four aspects: explain this work in detail, why I can not do now, how can or may be it can be done, who (with which skill) can do it.

(All these analysis is from technique perspective)

1. Dynamically instance creation

1.1 Explain this work in detail

Now in our project has a creation part, see as the screen shot below:




A decorative header featuring a city skyline silhouette with various skyscrapers. Above the skyline are several translucent, colorful bubbles in shades of orange, yellow, green, blue, and purple, arranged in a cluster that tapers towards the center.

department name

Register

when register a new department, our system will register it into the database, and the login page will show all department including latest registered one.

The last two figures show register new department “hello department” , and show it in the login page



A decorative header featuring a city skyline silhouette with various skyscrapers. Above the skyline are several translucent, colorful bubbles in shades of orange, yellow, green, blue, and purple, arranged in a cluster that tapers towards the center.

Registered successfully

Close

hello department

Register



however, what we have done only part of it, when click the register button, we just update the database, do not create an “actual” instance for new department, so next step, what we need to do is to create an actual instance for new department in an Ubuntu (we deploy our instances in EC2 Ubuntu environment) and integrate this process into our project’ s creation part.

1.2 Why I can not do now?

Because the technique required to fulfill this part do not exist in my technique, and I can not learn it in a short time.

1.3 How can or may be it can be done?

In the last company I work for, the devops in our company use docker to complete a function like this, they write a docker file to create an instance, this instance show be a sandbox, and can including all commands to deploy ProcessMaker and our own jar package to this instance.

1.4 Who can do it?

The person who can do this work should know how to write dockerfile and has several years' devops experience. The person only knows how to write dockerfile may not qualify this work, because it is not only write a simple dockerfile, but also more about configure a sandbox environment for ProcessMaker.

2. More Encryption Options

2.1 Explain this work in detail

As our system is a distributed system in nature, so we need to protect the data privacy when data is transferred on the Internet, what we do in our project is using DES-ECB to encryption the data when transferring. In the backend, I use java-security library to encrypt the data, in the meantime, I use Google's Crypto.js library to decrypt the data.

As we can find that the Professional edition of ProcessMaker which is not free, implement several encryption as its feature, it is important for us to implement more encryption if we want to develop a mature cloud software.

2.2 Why I can not do now?

I have no time to develop more encryption algorithm this semester. However, I try my best to implement one kind of encryption algorithm (DES-ECB) as demo,

the later one can easily develop more encryption algorithm based on my encryption module in both back end and front end.

2.3 How can or may be it can be done?

In the back end, java' s security library can be used to encrypt the data, this is the link of the introduce of java security library:

<https://docs.oracle.com/javase/7/docs/api/java/security/package-summary.html>

In the front end, Google' s open source library can be used to decrypt the data, the is the link of the github link of this open source library, there is guide line to show how to use it.

<https://github.com/brix/crypto-js>

2.4 Who can do it?

The people who can do this part must have experience in JavaEE and Javascript. Not just learn it from one class for a short time, but has experience developing project based on these techniques. They had better have experience using open source library.

3. Trigger Process through Other Strategy

3.1 Explain this work in detail

In our project, if we want to trigger a process, there must be a person to submit

a file in the webUI. It a limitation, as we can not automatically trigger a process. However, we hope to trigger a process in a different way, for example, a script to submit to a API to trigger a process. Through more trigger way, our project can have more use case, for example, more communication, IOT connection, and so on.

3.2 Why I can not do now?

We can look at this problem from two aspects:

In the first aspect, all people in our development team are not very familiar with the ProcessMaker, do not know how the ProcessMaker actually work, may be there are some ways to implement this function but we do not know.

In the second aspect, ProcessMaker has a Professional edition, it charges for money for more UI function. So it is only an assumption that the company open source the ProcessMaker do now want other developer to use the restful API, or can not use it easily, so that can make money from professional edition.

3.3 How can or may be it can be done?

As two aspect I mentioned above, there is two ways:

(1) I found a link of restful API list below, but I can not get the data, may be I use it in a wrong way, may be it can fulfill our requirement, to be honest, I am not sure, so if anyone else can work out from this document, it will be the best result.

http://wiki.processmaker.com/3.2/REST_API_Cases/Input_Documents#Download
[_Input_Document: GET_2Fcases.2F7Bapp_uid.7D.2Finput-](#)
[document.2F7Bapp_doc_uid.7D.2Ffile?v=.7Bversion7D](#)

(2) We need to communication with the ProcessMaker company to seek for help
or cooperate

3.4 Who can do it?

If the first way, anyone who has time and truly want to work on it can do it, they
just need to know how to get data from Restful API

In the second way, it seems unsure.