

EULAide: Ontology-Driven Summarization and Visualization of Legal Documents

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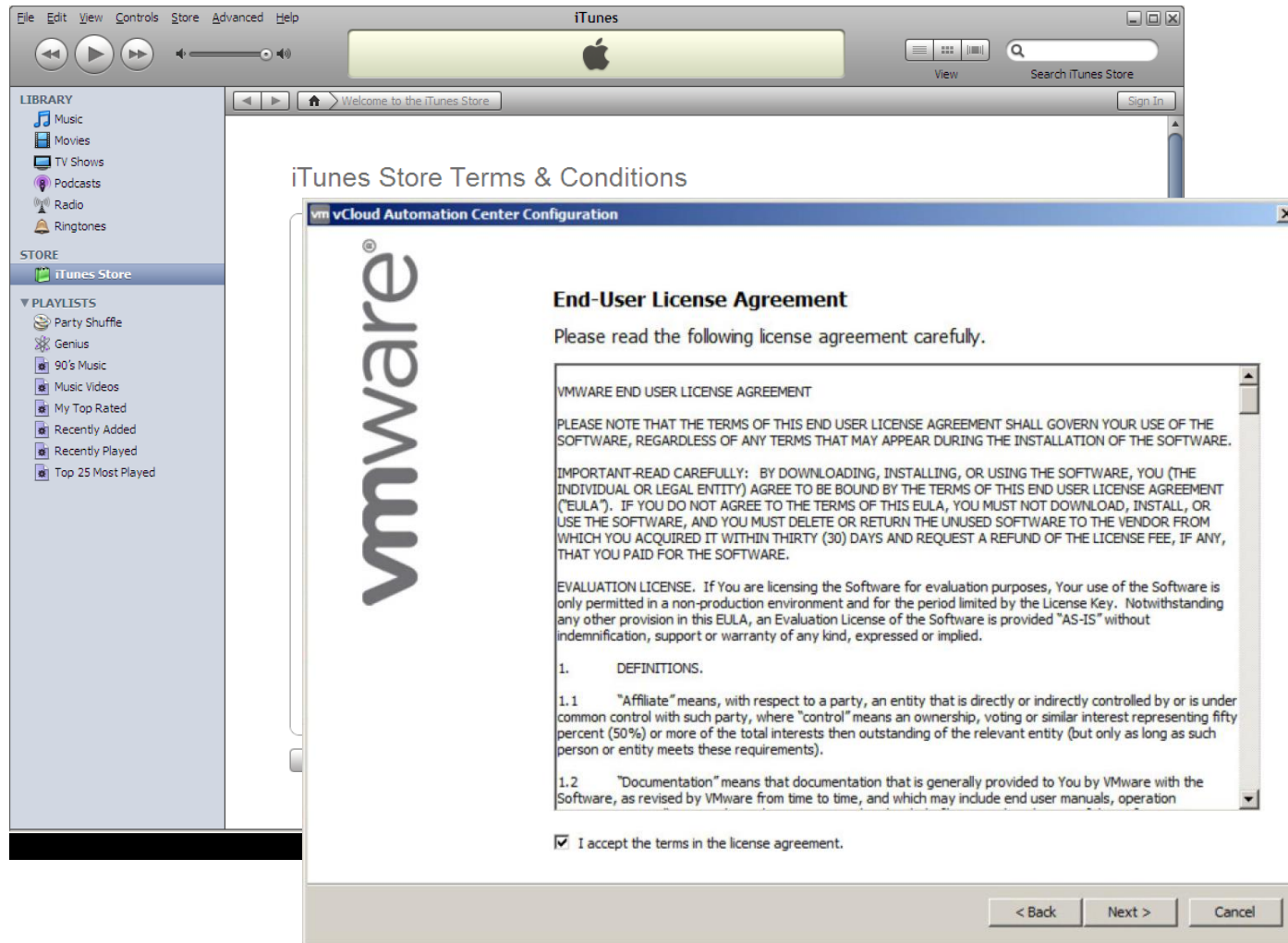
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Outline

- ① Motivation
- ② Objective
- ③ Tasks
- ④ System Architecture
- ⑤ Visualization of policies
- ⑥ Testing
- ⑦ Mock-up
- ⑧ Future Work
- ⑨ Demo

Motivation



- EULA being ignored most of the time!
- Consequences of ignoring!
- What is the solution?

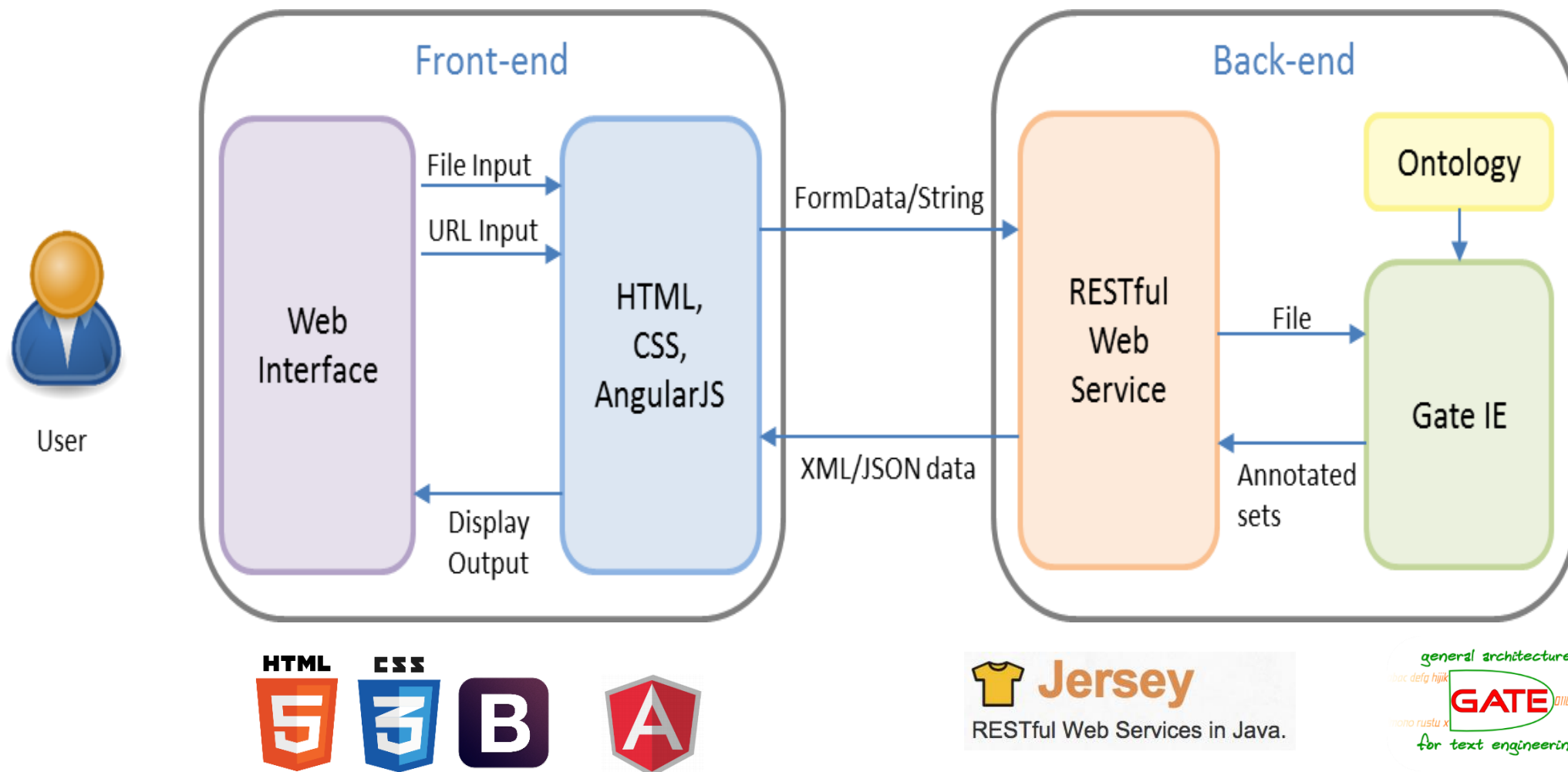
Objective

Use ontology-based information extraction to facilitate a better understanding of EULAs.

Tasks

- Implementation of GATE in java
 - Restful Web Service
- Visualization of policies
- Implementation of Web App
- Mobile Application Mockup

System Architecture



GATE Developer 8.1 build 5169

File Options Tools Help

Messages Terms&Condition... All20Licenses Eclipse.txt_003...

Annotation Sets Annotations List Annotations Stack Co-reference Editor OAT RAT-C RAT-I Text

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Type	Set	Start	End	Id	Features
Permission		1643	1853	86665	{generalAction=Reproduce, generalUser=true, kind=Permission, rule=Permission1}
Permission		2021	2164	86666	{advancedAction=make, use, sell, offer, generalUser=false, kind=Permission, rule=Permission1}
Permission		3240	3352	86667	{advancedAction=distribute the Program, it is Recipient's responsibility to acquire, generalUser=false, kind=Permission, rule=Permission1}
Permission		3582	3658	86668	{advancedAction=Distribute, generalUser=false, kind=Permission, rule=Permission7}
Duty		3676	4554	86723	{advancedAction=a) it complies, kind=Duties, relatedPermission=AnnotationImpl: id=86668; type=Permission; features={rule=Permission7, kind=Permission, advancedAction=Distribute,
Duty		4556	4744	86724	{advancedAction=made available under this Agreement; and b) a copy of this Agreement must be included, kind=Duty, rule=Duty7}
Duty		6165	6408	86725	{generalAction=Notify, kind=Duty, rule=Duty1}

11 Annotations (1 selected) Select:

Document Editor Initialisation Parameters Relation Viewer

Views built

Resource Features

MimeType text/plain
docNewLineType CRLF
gate.SourceURL file:/C:/

Right sidebar: ☒ Duty, ☒ Permission, ☐ Prohibit, ☒ Origin

Windows taskbar: Ask me anything, WiSe15, 8:31 PM 9/30/2016

Restful Web Service

POST */eula/fileUploadXML*

Param : multipart/form-data

Response : application/xml

POST */eula/urlUploadXML*

Param : text/plain (URL)

Response : application/xml

POST */eula/fileUploadJSON*

Param : multipart/form-data

Response : application/json

POST */eula/urlUploadJSON*

Param : text/plain (URL)

Response : application/json

Visualization of policies

Output of JSON Format

```

1  {
2  "duties": [
3    "{ \"annotation\": \"You must provide your name, a valid email address, and any other information requested in order to complete the sign
4    \"{ \"annotation\": \"You are responsible for maintaining the security of your account and password\", \"advancedAction\": \"for maintaining
5    \"{ \"annotation\": \"You are solely responsible for properly canceling your account\", \"generalAction\": \"Cancel\", \"id\": \"6328\" }\",
6    \"{ \"annotation\": \"provided that You may not settle any claim, demand, suit or proceeding unless the settlement unconditionally release
7    \"{ \"annotation\": \"Questions about the Terms of Service should be sent to support@github.com. If you are a government user or otherwise
8  ],
9  "permissions": [
10   "{ \"annotation\": \"create separate logins for as many people as your plan allows\", \"generalAction\": \"Create\", \"id\": \"6260\" }\",
11   \"{ \"annotation\": \"cancel your account at any time by clicking on the Account link in the global navigation bar at the top of the screen
12   \"{ \"annotation\": \"written notice of the claim, demand, suit or proceeding; (b) gives You sole control of the defense and settlement of
13   \"{ \"annotation\": \"use the GitHub Pages static hosting service solely as permitted and intended to host your organization pages, person
14  ],
15  "prohibitions": [
16   \"{ \"annotation\": \"IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, YOU MUST NOT ACCEPT THIS
17   \"{ \"annotation\": \"You may not use the Service for any illegal or unauthorized purpose\", \"generalAction\": \"Use\", \"id\": \"6261\" }\",
18   \"{ \"annotation\": \"You must not, in the use of the Service, violate any laws in your jurisdiction (including but not limited to copyright
19   \"{ \"annotation\": \"If you cancel the Service before the end of your current paid up month, your cancellation will take effect immediate
20   \"{ \"annotation\": \"You may not duplicate, copy, or reuse any portion of the HTML\\CSS, Javascript, or visual design elements or concep
21   \"{ \"annotation\": \"You must not modify, adapt or hack the Service or modify another website so as to falsely imply that it is associate
22   \"{ \"annotation\": \"You may not use GitHub Pages in violation of GitHub's trademark or other rights or in violation of applicable law\",
23   \"{ \"annotation\": \"You agree not to reproduce, duplicate, copy, sell, resell or exploit any portion of the Service, use of the Service,
24   \"{ \"annotation\": \"You must not upload, post, host, or transmit unsolicited email, SMSs, or \"spam\" messages\", \"generalAction\": \"Upl
25  ],
26  "subject": "GitHub Terms of Service - User Documentation"
27  }

```

Visualization of policies

Mapping text instances with icons

```
{"duties" : [  
  "{\\"annotation\\": \\"....\\",  
  "{\\"annotation\\": \\"....\\",  
  "{\\"annotation\\": \\"....\\",  
    .  
    .  
    ....],  
  "permissions" : [],  
  "prohibitions" : []}
```

GeneralAction annotations



Visualization of policies

EULAide
Home
Help
About us

Choose File
bitTorrent.txt

URL
url input

Generate
Open All
Collapse All

Input: bitTorrent.txt

General User












Advanced User

Permission	Duty	Prohibition
Use	Contain	
Use <p>use or give away the Licensed Product, alone or as a component of an aggregate software distribution containing programs from several different sources</p>	<p>such executable versions contain your or another Contributor?s material Modifications</p> Related Permission	
		Use

Summary of bitTorrent.txt

Visualization of policies

Duties with related Permissions

General User		Advanced User	
Permission	Duty	Prohibition	
 Use			
 Use	such executable versions contain your or another Contributor's material Modifications Related Permission		
		 Use	
sell, accept donations or otherwise receive compensation for executable versions of a Licensed Product, without paying a royalty or other fee to the Licensor or any Contributor,			
			

Testing

Unit testing



- File format validation
 - Correct format (.txt, .pdf)
 - Wrong format (.jpg or any other types)

- URL validation
 - Empty URL
 - Non-empty URL

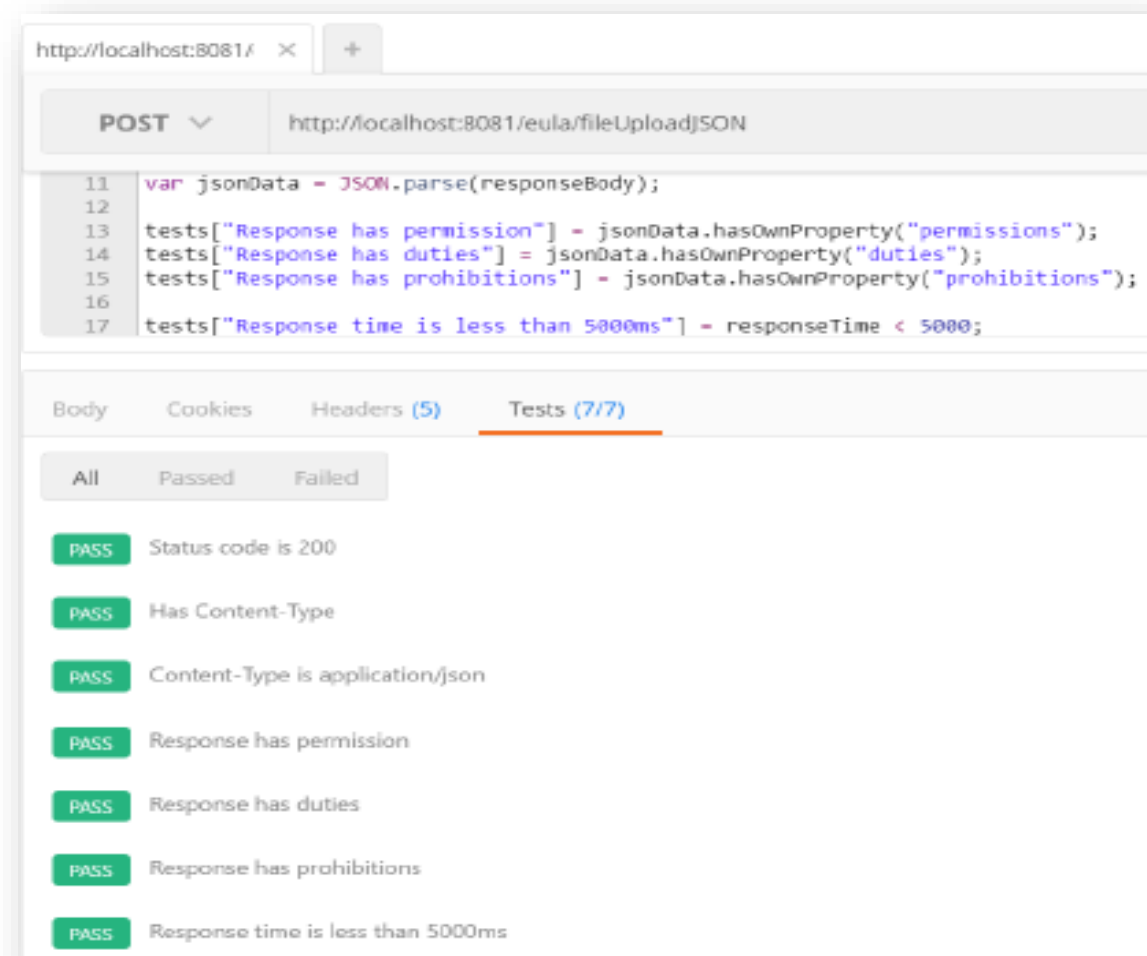
Testing



Postman

Integration testing

- Status Code
- Response Content-type
 - application/json
 - application/xml
- Content of the response
 - ‘permissions’, ‘duties’, ‘prohibition’



Mock-up



Development Tools



Future Work

- Developement of an app for the major mobile operating systems
- User interaction to give feedback and report problems

Demo



Hostname: **vm-Windows16-EULA**

Software installed: Installed on: EIS3
Eclipse Neon, Apache Tomcat 9, GATE 8.1

Local Access:

OS User: **eis-user**

Password: **E1sUserEULA**



Remote Access:

Partner ID: **273956668**

Password: **E1sUserEULA**

