

Hello World Lab

Resources

Lab code is on GitHub

<https://github.com/WatsonDevCloud/HelloWorld>

Bluemix web console

<https://console.ng.bluemix.net/>

Introduction

FILE: manifest.yml (should I discuss this here???)

applications:

- services:

- Relationship Extraction-os

- disk_quota: 1024M

- name: HelloWorld

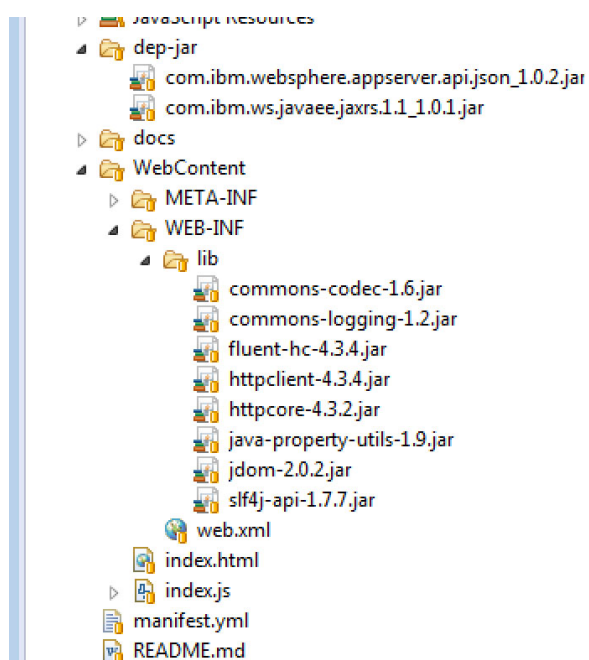
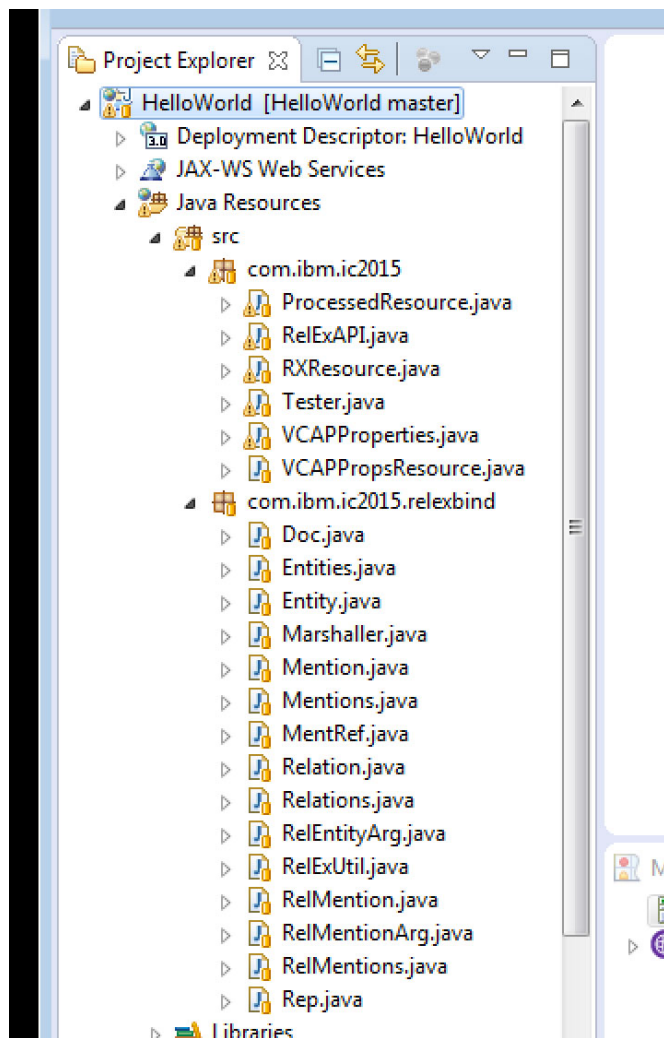
- host: helloworldapp

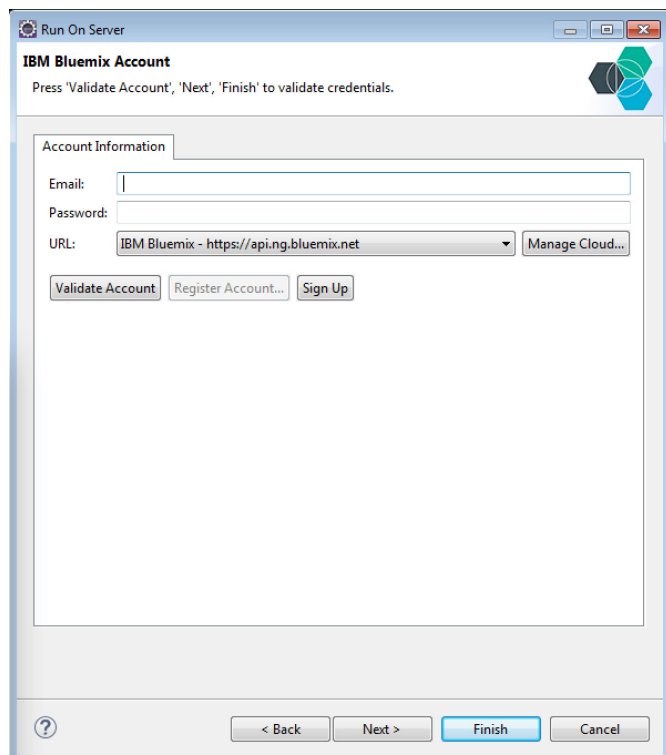
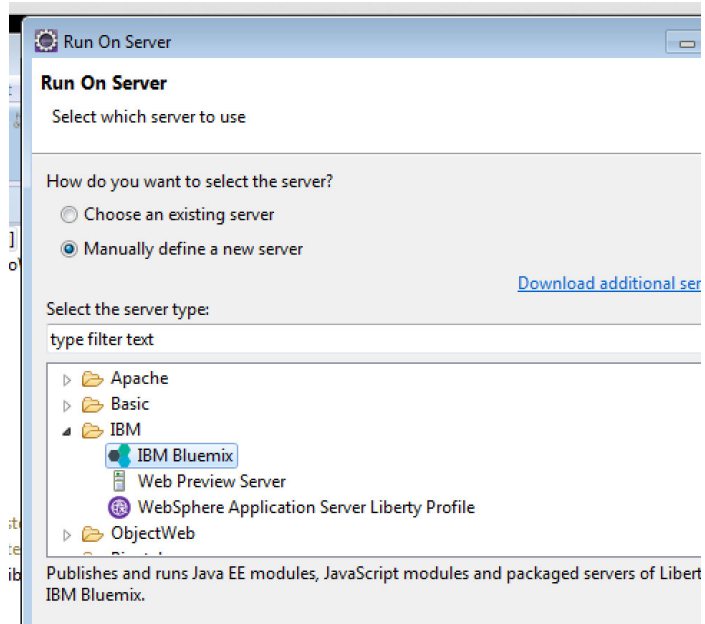
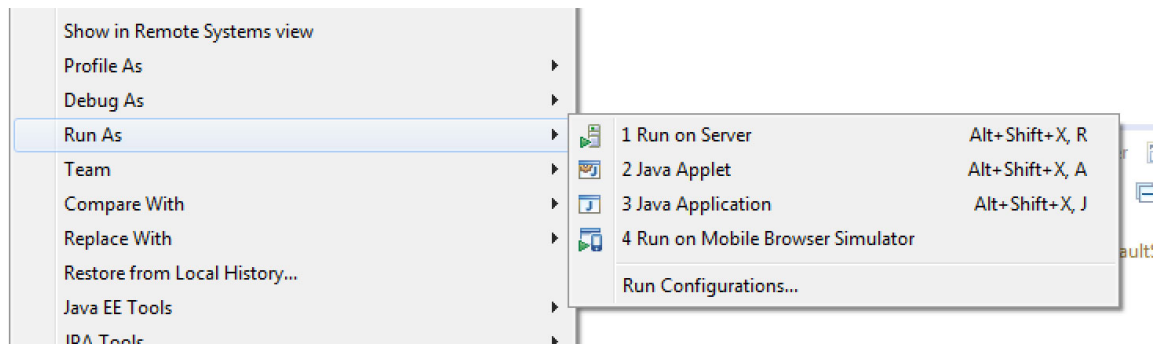
- domain: mybluemix.net

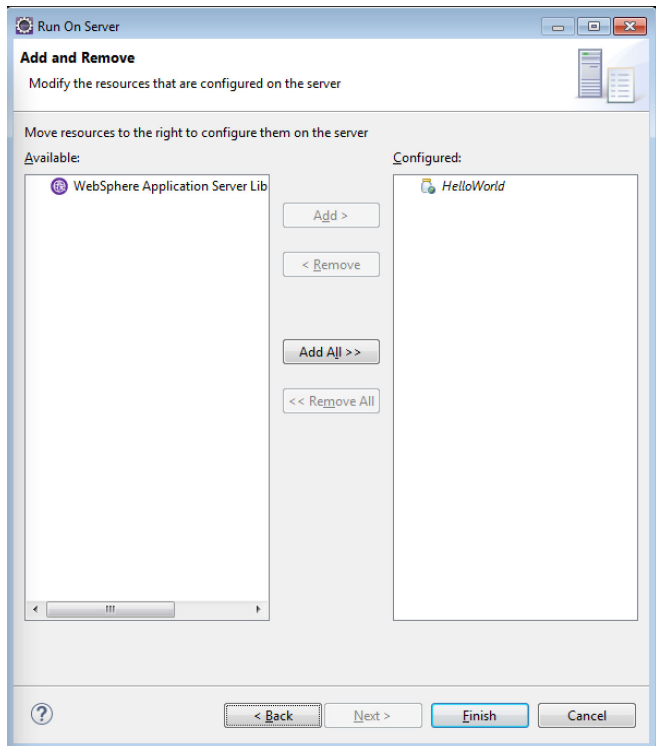
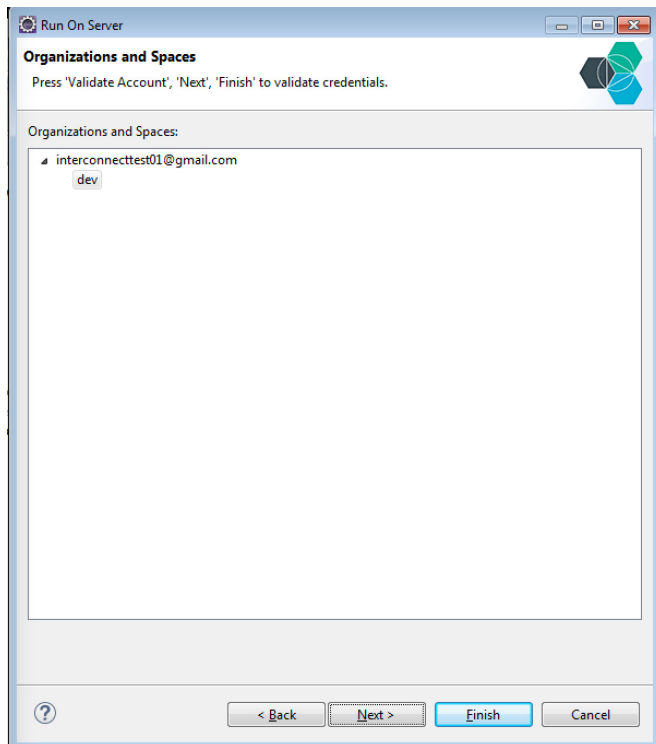
- path: webStarterApp.war

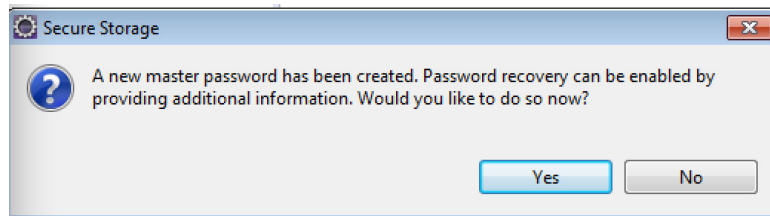
- instances: 1

- memory: 512M

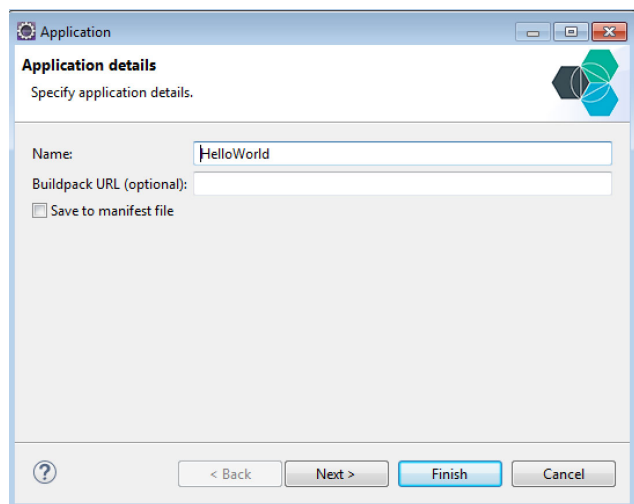
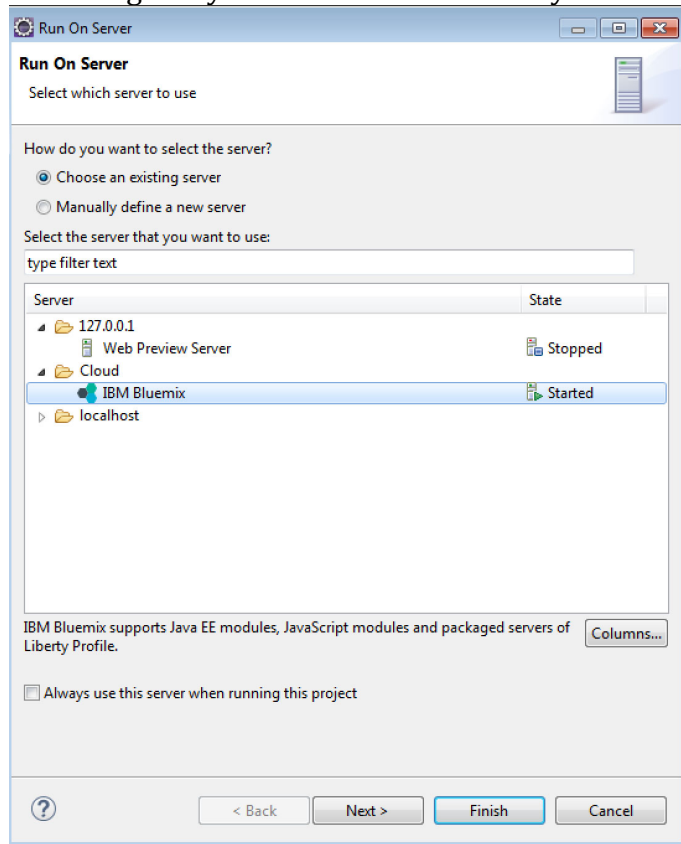








This image may be out of order. I think you see this only after you deploy again.



Application

Launch deployment

Specify the deployment details

Subdomain:

Domain:

Deployed URL:

Memory Limit (MB):

☒ Start application on deployment

[?](#) [< Back](#) [Next >](#) [Finish](#) [Cancel](#)

Markers Properties Servers Data Source Explorer Snippets Console

IBM Bluemix-interconnecttest01@gmail.com--dev--HelloWorld

```
Pushing application
Application successfully pushed
Starting and staging application
Got staging request for app with id 81ddb6da-c370-417b-afdd-641416749a71
Updated app with guid 81ddb6da-c370-417b-afdd-641416749a71 ({"state":"STARTED"})
-----> Downloaded app package (1.4M)
-----> Liberty Buildpack Version: v1.10-20141218-0103
-----> Retrieving IBM 1.7.1 JRE (ibm-java-jre-7.1-1.0-pxa6470_27sr2ifx-20141115_01-sfj.tgz) ... (0.0s)
      Expanding JRE to .java ... (1.4s)
-----> Retrieving App Management Agent 1.0.0_master (com.ibm.ws.cloudoe.app-mgmt-proxy-agent.zip) ... (0.0s)
      Installing archive ... (1.3s)
-----> Liberty buildpack is done creating the droplet
-----> Uploading droplet (111M)
```

Bluemix

Watson Hello World!

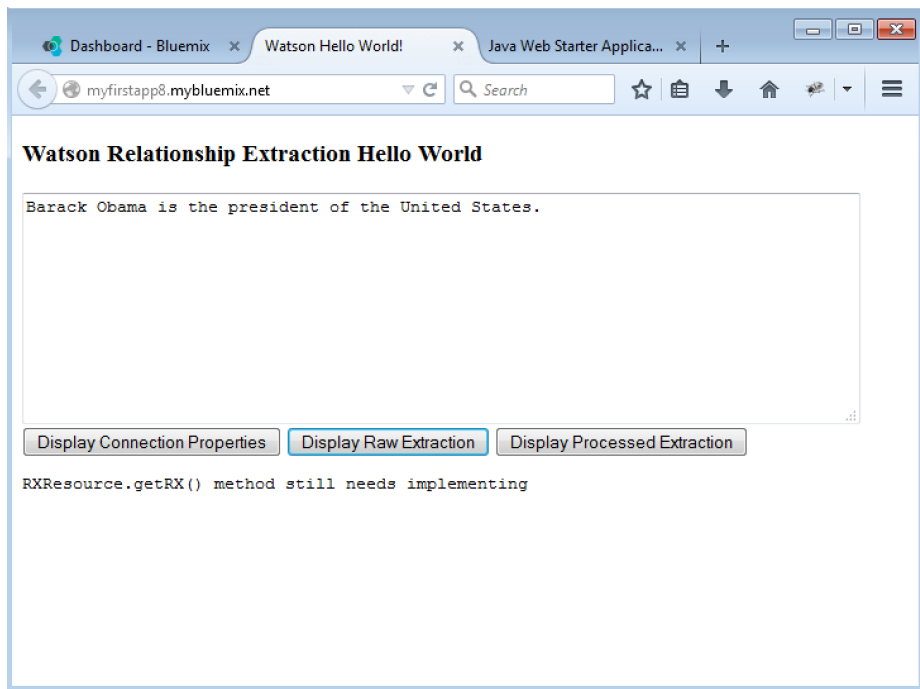
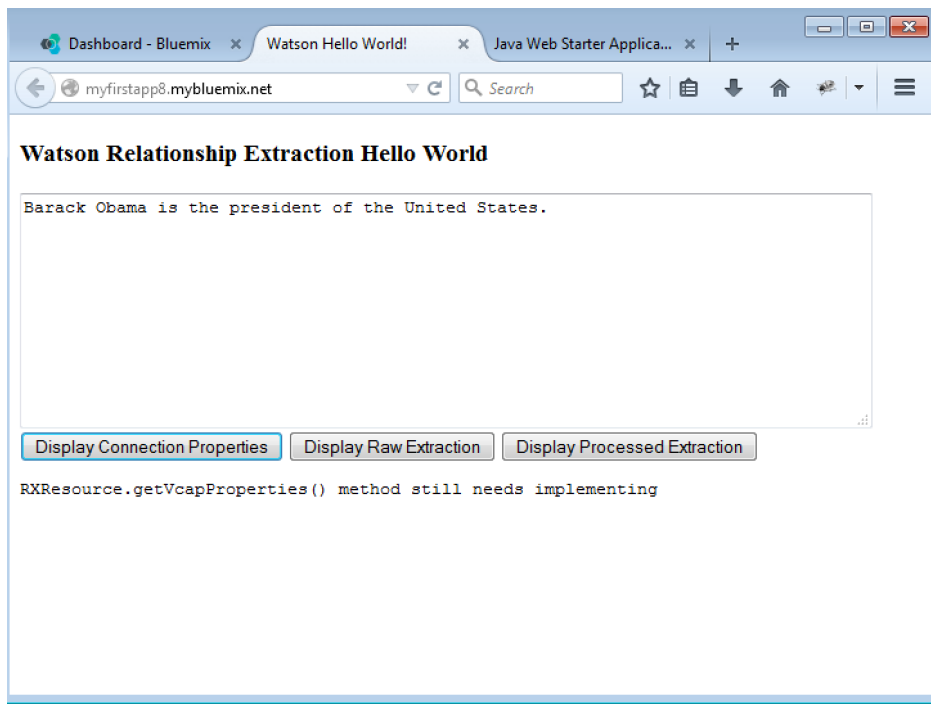
myapname1234.mybluemix.net

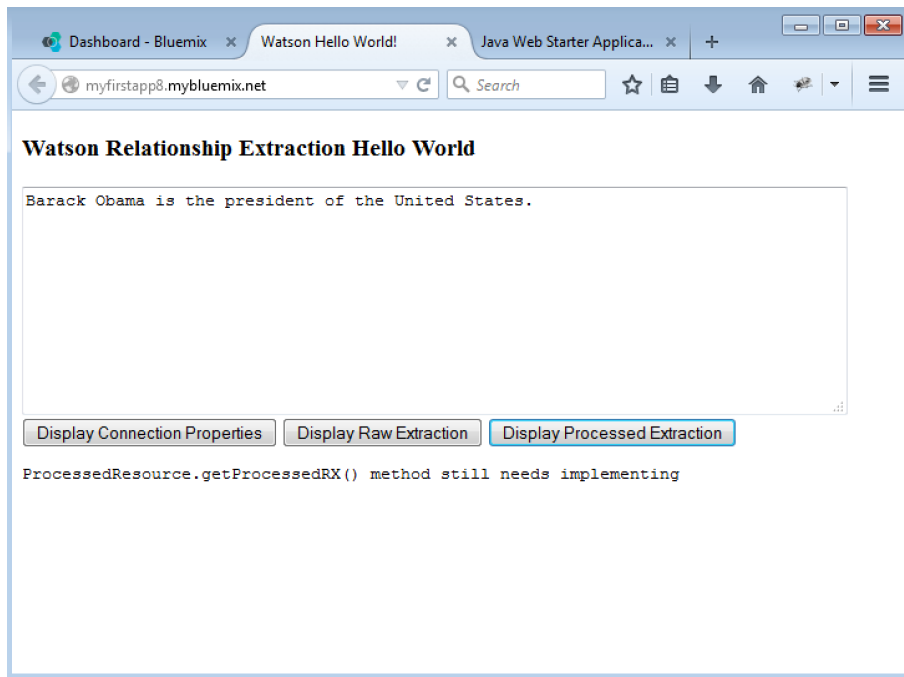
Search

Watson Relationship Extraction Hello World

Barack Obama is the president of the United States.

[Display Connection Properties](#) [Display Raw Extraction](#) [Display Processed Extraction](#)





FILE: com/ibm/ic2015/VCAPProperties.java

```
package com.ibm.ic2015;

import java.io.IOException;

import com.ibm.json.java.JSONArray;
import com.ibm.json.java.JSONObject;

public class VCAPProperties {

    private String serviceName = "relationship_extraction";

    private String baseUrl = "<service url>";
    private String username = "<service username>";
    private String password = "<service password>";

    public VCAPProperties() {
        processVCAP_Services();
    }

    /**
     * If exists, process the VCAP_SERVICES environment variable in order to get the
     * username, password and baseUrl
     */
    private void processVCAP_Services() {
        System.out.println("Processing VCAP_SERVICES");
        JSONObject sysEnv = getVcapServices();
        if (sysEnv == null) return;
        System.out.println("Looking for: " + serviceName );

        if (sysEnv.containsKey(serviceName)) {
            JSONArray services = (JSONArray)sysEnv.get(serviceName);
            JSONObject service = (JSONObject)services.get(0);
            JSONObject credentials = (JSONObject)service.get("credentials");
            baseUrl = (String)credentials.get("url");
            username = (String)credentials.get("username");
            password = (String)credentials.get("password");
            System.out.println("baseUrl = "+baseUrl);
            System.out.println("username = "+username);
            System.out.println("password = "+password);
        } else {
            System.out.println(serviceName + " is not available in VCAP_SERVICES, "
                + "please bind the service to your application");
        }
    }
}
```

```

/**
 * Gets the <b>VCAP_SERVICES</b> environment variable and return it
 * as a JSONObject.
 *
 * @return the VCAP_SERVICES as Json
 */
private JSONObject getVcapServices() {
    String envServices = System.getenv("VCAP_SERVICES");
    if (envServices == null) return null;
    JSONObject sysEnv = null;
    try {
        sysEnv = JSONObject.parse(envServices);
    } catch (IOException e) {
        // Do nothing, fall through to defaults
        System.out.println("Error parsing VCAP_SERVICES: " + e.getMessage());
    }
    return sysEnv;
}

    public String getBaseURL() {
        return baseUrl;
    }
    public String getUsername() {
        return username;
    }
    public String getPassword() {
        return password;
    }
}

```

FILE: com/ibm/ic2015/ VCAPPPropsResource.java

```
package com.ibm.ic2015;

import javax.ws.rs.GET;
import javax.ws.rs.Path;
import javax.ws.rs.Produces;

@Path("/vcapprops")
public class VCAPPPropsResource {

    @GET
    @Produces("text/plain")
    public String getVcapProperties() {

        VCAPPProperties vcp = new VCAPPProperties();

        String props = "URL: " + vcp.getBaseURL() +
            "\nUsername: " + vcp.getUsername() +
            "\nPassword: " + vcp.getPassword();

        return props;
    }
}
```

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Watson Relationship Extraction Hello World

Barack Obama is the president of the United States.

Display Connection Properties

Display Raw Extraction

Display Processed Extraction

Resource: relationship_extraction
URL: https://gateway.watsonplatform.net/laser/service/api/v1/size/de757dd0-b49b-436b-99ab-c3319829764d
Username: 1516afbd-b894-4c7a-8b96-bbdf97aa521d
Password: 1tHTDogb9pLr

FILE: com/ibm/ic2015/ RelExAPI.java

```
package com.ibm.ic2015;

import java.io.IOException;
import java.net.URI;
import java.net.URISyntaxException;
import java.util.ArrayList;
import java.util.List;

import org.apache.http.NameValuePair;
import org.apache.http.client.ClientProtocolException;
import org.apache.http.client.fluent.Executor;
import org.apache.http.client.fluent.Request;
import org.apache.http.client.utils.URLEncodedUtils;
import org.apache.http.entity.ContentType;
import org.apache.http.message.BasicNameValuePair;

import com.ibm.ic2015.relexbind.Marshaller;
import com.ibm.ic2015.relexbind.Rep;

public class RelExAPI {

    /**
     * Using Apache HTTPClient library to call the Relationship Extraction
     REST service.
     * Results are an XML document.
     */
    public static String performExtraction(String text, String sid, String
url, String username, String password) {

        System.out.println("text: " + text);
        System.out.println("sid: " + sid);
        System.out.println("url: " + url);
        System.out.println("username: " + username);
        System.out.println("password: " + password);

        List<NameValuePair> queryParams = new ArrayList<NameValuePair>();
        queryParams.add(new BasicNameValuePair("txt", text ));
        queryParams.add(new BasicNameValuePair("sid", sid ));
        queryParams.add(new BasicNameValuePair("rt", "xml" ));

        String response = "ERROR";
        try {
            Executor executor = Executor.newInstance().auth(username,
password);
```

```

        URI serviceURI = new URI(url).normalize();
        byte[] responseBytes = null;

        responseBytes = executor.execute(Request.Post(serviceURI)
            .bodyString(URLEncodedUtils.format(queryParams, "utf-
8"),
            ContentType.APPLICATION_FORM_URLENCODED)
            .returnContent()).asBytes();

        response = new String(responseBytes, "UTF-8");

        } catch (URISyntaxException e) {
            e.printStackTrace();
        } catch (ClientProtocolException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }

        return response;
    }
}

```

FILE: com/ibm/ic2015/ Tester.java (step 1 of 3)

```
package com.ibm.ic2015;

import java.util.List;

import com.ibm.ic2015.relexbind.Marshaller;
import com.ibm.ic2015.relexbind.RelExUtil;
import com.ibm.ic2015.relexbind.Rep;

public class Tester {

    /*
     *
     * Tester for Relationship Extraction API so we don't have to deploy to Bluemix to test.
     *
     */
    public static void main(String[] args) {
        String text = "Barack Obama is the president of the United States.";

        String url =
"https://gateway.watsonplatform.net/laser/service/api/v1/sire/cf997efc-3c5d-440d-9c54-885b04d56c4e";
        String username = "ebe462b4-16d8-4ed7-9653-ad70999bb34c";
        String password = "htbNjBXFzHpG";

        String xml = RelExAPI.performExtraction(text,
                                                "ie-en-news",
                                                url,
                                                username,
                                                password);

        System.out.println(xml);
    }
}
```



```
Problems Javadoc Declaration Console Progress Annotations Call Hierarchy History Servers
<terminated> tester [Java Application] /Library/Java/JavaVirtualMachines/jdk1.7.0_51.jdk/Contents/Home/bin/java (Jan 26, 2015, 10:29:46 AM)
text: Barack Obama is the president of the United States.
sid: ie-en-news
url: https://gateway.watsonplatform.net/laser/service/api/v1/sire/de757dd0-b49b-436b-99ab-c331982976ad
username: 1516afb-d-b894-4c7a-8b96-bbd9f9aa521d
password: ltHTDogb9plr
<?xml version='1.0' encoding='utf-8'?>
<rep sts="OK">
<doc id="">
<text>Barack Obama is the president of the United States.
</text>
<sents>
<sent sid="0" begin="0" end="9">
<text>Barack Obama is the president of the United States.</text>
<parse score="-1.08392">[S [NP Barack_NNP Obama_NNP NP] [VP is_VBZ [NP [NP the_DT president_NN NP] [PP of_IN [NP the_DT United_NNP States_NNP NP] PP] NP] VP] ... S]</pars
<dependency_parse>Barack NNP 1 -I Obama NNP 2 NP is VBZ -1 VP the DT 4 -I president NN 2 NP of IN 4 PP the DT 8 -I United NNP 8 -I States NNP 5 NP . . 2 -E </dependency_p
<usd_dependency_parse>Barack NNP 1 dep Obama NNP 2 npmod is VBZ -1 root the DT 4 dep president NN 2 npmod of IN 8 case the DT 8 dep United NNP 8 dep States NNP 4 nmod . .
<tokens>
<token tid="0" begin="0" end="5" type="0">Barack</token>
<token tid="1" begin="7" end="11" type="0">Obama</token>
<token tid="2" begin="13" end="14" type="0">is</token>
<token tid="3" begin="16" end="18" type="0">the</token>
<token tid="4" begin="20" end="28" type="0">president</token>
<token tid="5" begin="30" end="31" type="0">of</token>
<token tid="6" begin="33" end="35" type="0">the</token>
<token tid="7" begin="37" end="42" type="0">United</token>
<token tid="8" begin="44" end="49" type="0">States</token>
<token tid="9" begin="50" end="50" type="6144">.</token>
</tokens>
</sent>
</sents>
<mentions>
<mention mid="-M0" mtype="NAM" begin="0" end="11" head-begin="0" head-end="11" eid="-E0" etype="PERSON" role="PERSON" metonymy="0" class="SPC" score="0.990632" corefScore="
<mention mid="-M1" mtype="NOM" begin="20" end="28" head-begin="20" head-end="28" eid="-E0" etype="PERSON" role="OCCUPATION" metonymy="0" class="SPC" score="0.98779" corefSc
<mention mid="-M2" mtype="NAM" begin="37" end="49" head-begin="37" head-end="49" eid="-E1" etype="GPE" role="ORGANIZATION" metonymy="0" class="SPC" score="0.587498" corefSc
</mentions>
<entities>
<entity eid="-E0" type="PERSON" generic="0" class="SPC" level="NAM" subtype="OTHER" score="1">
<mentref mid="-M0">Barack Obama</mentref>
<mentref mid="-M1">president</mentref>
</entity>
<entity eid="-E1" type="GPE" generic="0" class="SPC" level="NAM" subtype="COUNTRY" score="1">
<mentref mid="-M2">United States</mentref>
</entity>
</entities>
<relations version="KLUE2_cascaded:2011_10_25">
<relation mid="-R1" type="managerOf" subtype="OTHER">
```

FILE: com/ibm/ic2015/ RXResource.java

```
package com.ibm.ic2015;

import javax.ws.rs.FormParam;
import javax.ws.rs.POST;
import javax.ws.rs.Path;
import javax.ws.rs.Produces;

@Path("/rx")
public class RXResource {

    @POST
    @Produces("application/xml")
    public String getRX(@FormParam("text") String text) {

        System.out.println("Form text: " + text);

        VCAPPProperties vcp = new VCAPPProperties();

        String xml = RelExAPI.performExtraction(text,
                                                "ie-en-news",
                                                vcp.getBaseURL(),
                                                vcp.getUsername(),
                                                vcp.getPassword());

        return xml;
    }
}
```

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Watson Relationship Extraction Hello World

Barack Obama is the president of the United States.

Display Connection Properties

Display Raw Extraction

Display Processed Extraction

```
<?xml version='1.0' encoding='utf-8'?>
<rep sts="OK">
<doc id="">
  <text>Barack Obama is the president of the United States.
</text>
<sents>
  <sent sid="0" begin="0" end="9">
    <text>Barack Obama is the president of the United States.</text>
    <parse score="-1.08392">[S [NP Barack_NNP Obama_NNP NP] [VP is_VBZ [NP [NP the_DT president_NN NP] [
    <dependency_parse>Barack NNP 1 -I Obama NNP 2 NP is VBZ -1 VP the DT 4 -I president NN 2 NP of IN 4
    <usd_dependency_parse>Barack NNP 1 dep Obama NNP 2 npmod is VBZ -1 root the DT 4 dep president NN 2
    <tokens>
      <token tid="0" begin="0" end="5" type="0">Barack</token>
      <token tid="1" begin="7" end="11" type="0">Obama</token>
      <token tid="2" begin="13" end="14" type="0">is</token>
      <token tid="3" begin="16" end="18" type="0">the</token>
      <token tid="4" begin="20" end="28" type="0">president</token>
      <token tid="5" begin="30" end="31" type="0">of</token>
      <token tid="6" begin="33" end="35" type="0">the</token>
      <token tid="7" begin="37" end="42" type="0">United</token>
      <token tid="8" begin="44" end="49" type="0">States</token>
      <token tid="9" begin="50" end="50" type="0">.</token>
    </tokens>
  </sent>
</sents>
```

FILE: com/ibm/ic2015/ Tester.java (step 2 of 3)

```
package com.ibm.ic2015;

import java.util.List;

import com.ibm.ic2015.relexbind.Marshaller;
import com.ibm.ic2015.relexbind.RelExUtil;
import com.ibm.ic2015.relexbind.Rep;

public class Tester {

    /*
     *
     * Tester for Relationship Extraction API so we don't have to deploy to Bluemix to test.
     *
     */
    public static void main(String[] args) {
        String text = "Barack Obama is the president of the United States.";

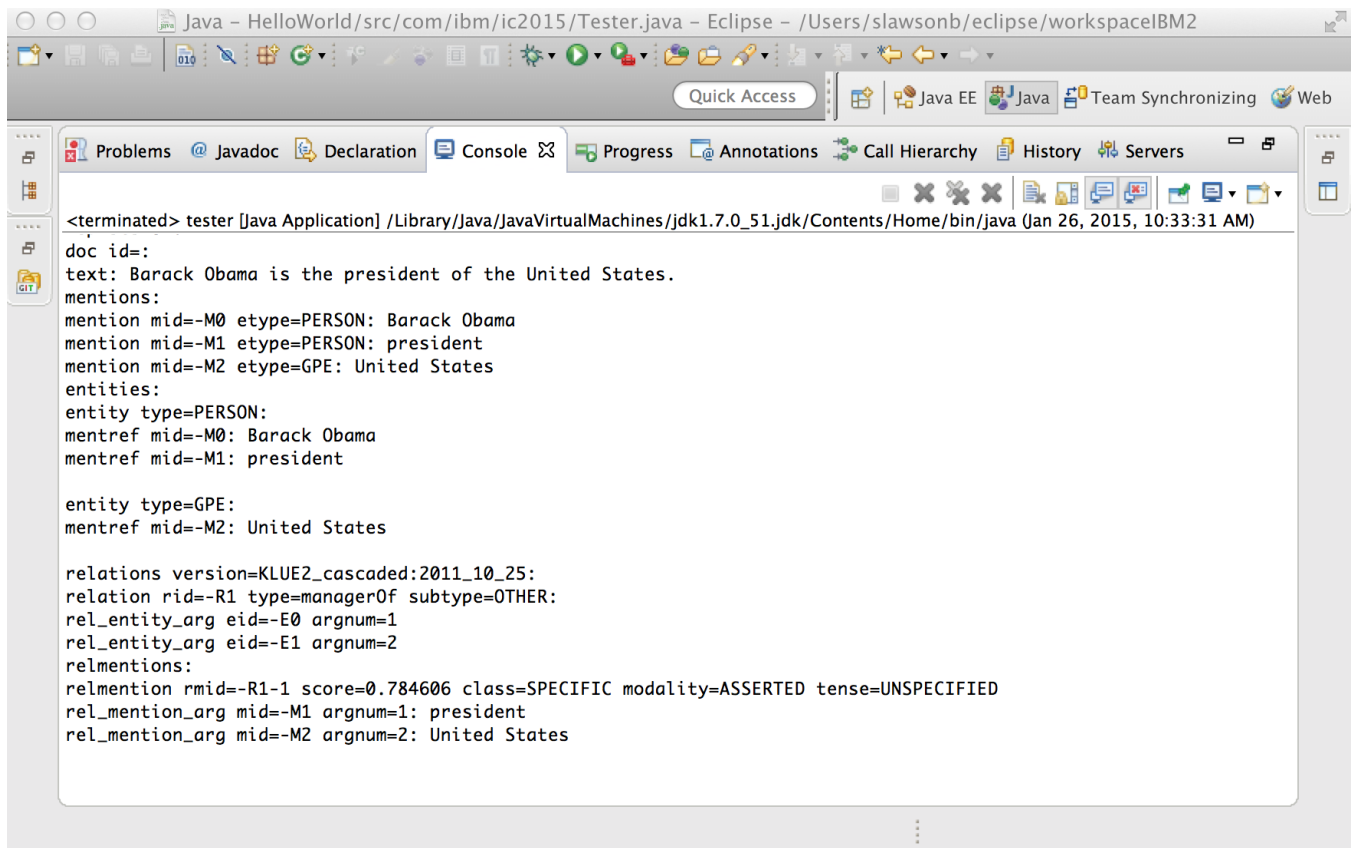
        String url =
"https://gateway.watsonplatform.net/laser/service/api/v1/sire/cf997efc-3c5d-440d-9c54-885b04d56c4e";
        String username = "ebe462b4-16d8-4ed7-9653-ad70999bb34c";
        String password = "htbNjBXFzHpG";

        String xml = RelExAPI.performExtraction(text,
                                                "ie-en-news",
                                                url,
                                                username,
                                                password);

        System.out.println(xml);

        Rep rep = Marshaller.marshallXml(xml);

        System.out.println(rep);
    }
}
```



FILE: com/ibm/ic2015/ Tester.java (step 3 of 3)

```
package com.ibm.ic2015;

import java.util.List;

import com.ibm.ic2015.relexbind.Marshaller;
import com.ibm.ic2015.relexbind.RelExUtil;
import com.ibm.ic2015.relexbind.Rep;

public class Tester {

    /**
     *
     * Tester for Relationship Extraction API so we don't have to deploy to Bluemix to test.
     *
     */
    public static void main(String[] args) {
        String text = "Barack Obama is the president of the United States.";

        String url =
"https://gateway.watsonplatform.net/laser/service/api/v1/sire/cf997efc-3c5d-440d-9c54-885b04d56c4e";
        String username = "ebe462b4-16d8-4ed7-9653-ad70999bb34c";
        String password = "htbNjBXFzHpG";

        String xml = RelExAPI.performExtraction(text,
                                                "ie-en-news",
                                                url,
                                                username,
                                                password);

        System.out.println(xml);

        Rep rep = Marshaller.marshallXml(xml);

        System.out.println(rep);

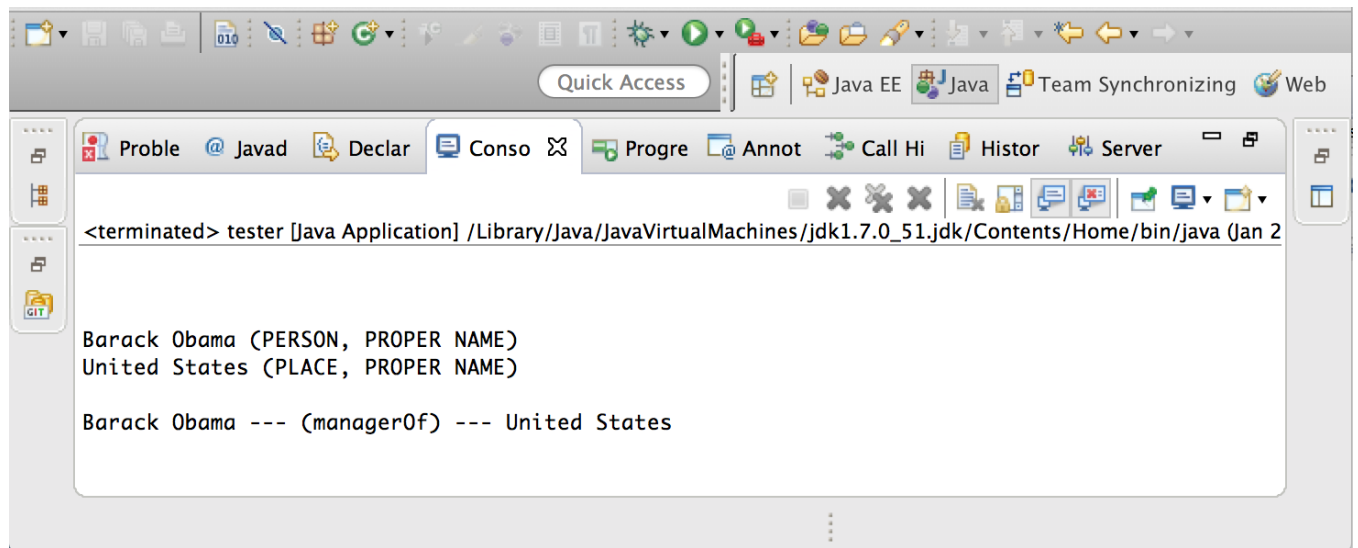
        RelExUtil util = new RelExUtil(rep);

        List<String> entities = util.getEntitiesList();
        List<String> rels = util.getRelationsList();

        System.out.println(RelExUtil.stringFromList(entities));
        System.out.println(RelExUtil.stringFromList(rels));

    }

}
```



FILE: com/ibm/ic2015/ ProcessedResource.java

```
package com.ibm.ic2015;

import java.util.List;

import javax.ws.rs.FormParam;
import javax.ws.rs.POST;
import javax.ws.rs.Path;
import javax.ws.rs.Produces;

import com.ibm.ic2015.relexbind.Marshaller;
import com.ibm.ic2015.relexbind.RelExUtil;
import com.ibm.ic2015.relexbind.Rep;

@Path("/processed")
public class ProcessedResource {

    @POST
    @Produces("text/plain")
    public String getProcessedRX(@FormParam("text") String text) {

        System.out.println("Form text: " + text);

        VCAPPProperties vcp = new VCAPPProperties();

        String xml = RelExAPI.performExtraction(text,
                                                "ie-en-news",
                                                vcp.getBaseURL(),
                                                vcp.getUsername(),
                                                vcp.getPassword());

        Rep rep = Marshaller.marshallXml(xml);

        RelExUtil util = new RelExUtil(rep);
        List<String> entities = util.getEntitiesList();
        List<String> rels = util.getRelationsList();

        return "Entities:\n" +
            RelExUtil.stringFromList(entities) +
            "\nRelations:\n" +
            RelExUtil.stringFromList(rels);

    }

}
```


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Watson Relationship Extraction Hello World

Barack Obama is the president of the United States.

Display Connection Properties

Display Raw Extraction

Display Processed Extraction

Entities:

Barack Obama (PERSON, PROPER NAME)

United States (PLACE, PROPER NAME)

Relations:

Barack Obama --- (managerOf) --- United States