Priyanka Gupta

CMPE281 – Cloud Technology

Instructor: Jerry Gao, Ph.D.
Semester: Spring, 2014
Posted date: 2/25/2014
Due date: 3/18/2014

Lab #2 Assignment – Playing with Google App. Engineer or Eucalyptus open Cloud

Objectives

This lab assignment is designed to enable students to gain some hands-on experience on Other Cloud Technologies, such as Google Application Engine.

Each student is required to work on this laboratory assignment individually and submit your deliverables into the Canvas account.

The basic requirements are given below:

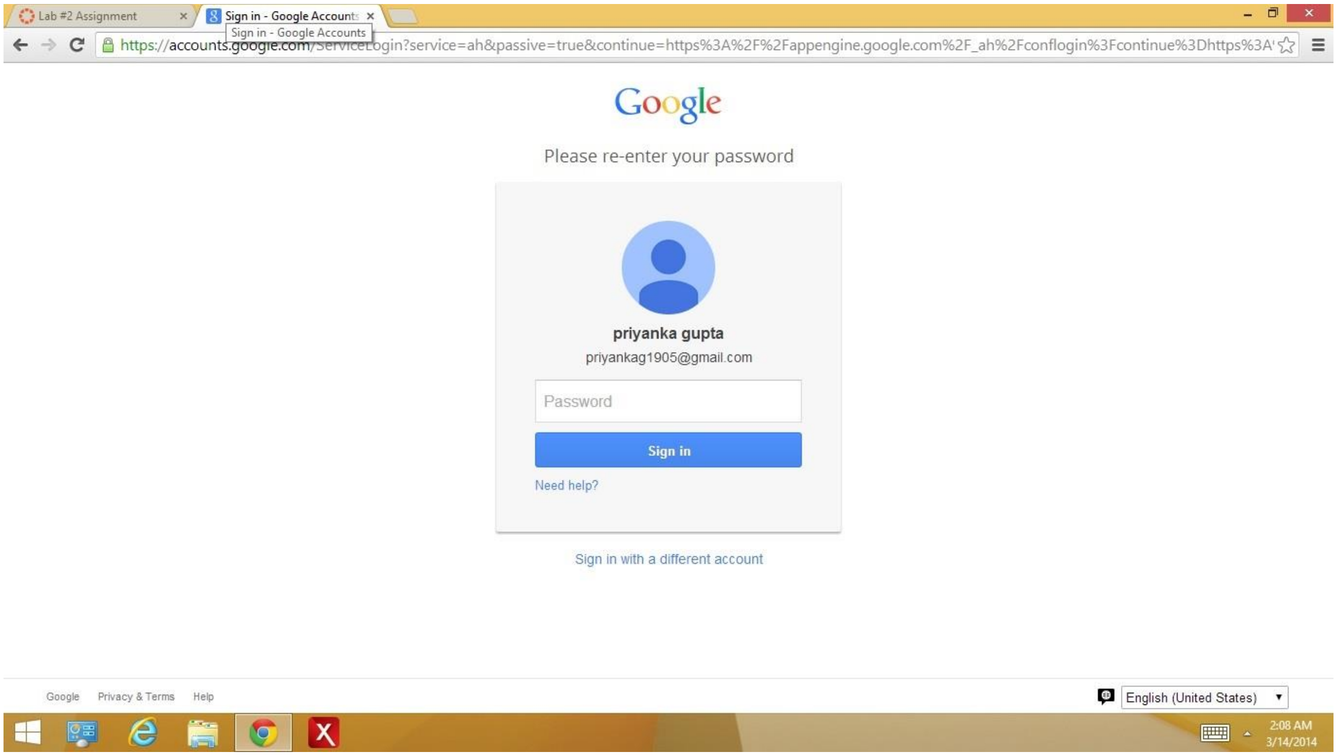
(a) Set up a user account in your selected cloud technology online (Google App. Engine or Eucalyptus open Cloud)
(b) Login to the select cloud and make necessary configurations for your selected application program.
(c) Launch and deploy your selected application (or an instance) onto your selected cloud environment.

Solution Objective:

Use Google App Engine’s platform to build and deploy a web application.

Procedure:

1. Browse to appengine.google.com and create a new login id. In case you already have a google id, login to your account.



Lab #2 Assignment | Sign in - Google Accounts

https://accounts.google.com/ServiceLogin?service=ah&passive=true&continue=https%3A%2F%2Fappengine.google.com%2F_ah%2Fconflogin%3Fcontinue%3Dhttps%3A

Please re-enter your password

priyanka gupta

priyankag1905@gmail.com

Password

Sign in

Need help?

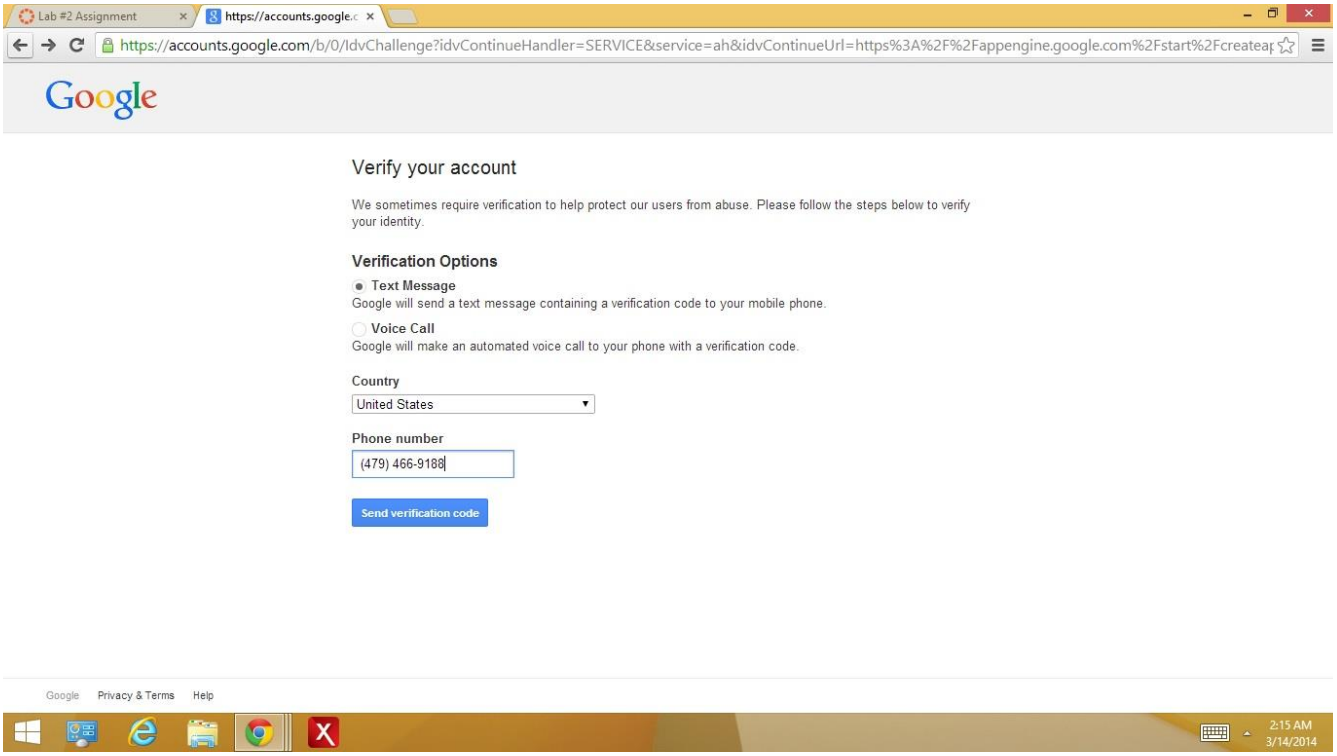
Sign in with a different account

Google Privacy & Terms Help

English (United States)

2:08 AM 3/14/2014

2. On verification screen, enter your phone number for the verification code.



Lab #2 Assignment | https://accounts.google.c

https://accounts.google.com/b/0/IdvChallenge?idvContinueHandler=SERVICE&service=ah&idvContinueUrl=https%3A%2F%2Fappengine.google.com%2Fstart%2Fcreateap

Verify your account

We sometimes require verification to help protect our users from abuse. Please follow the steps below to verify your identity.

Verification Options

● Text Message
Google will send a text message containing a verification code to your mobile phone.

○ Voice Call
Google will make an automated voice call to your phone with a verification code.

Country: United States

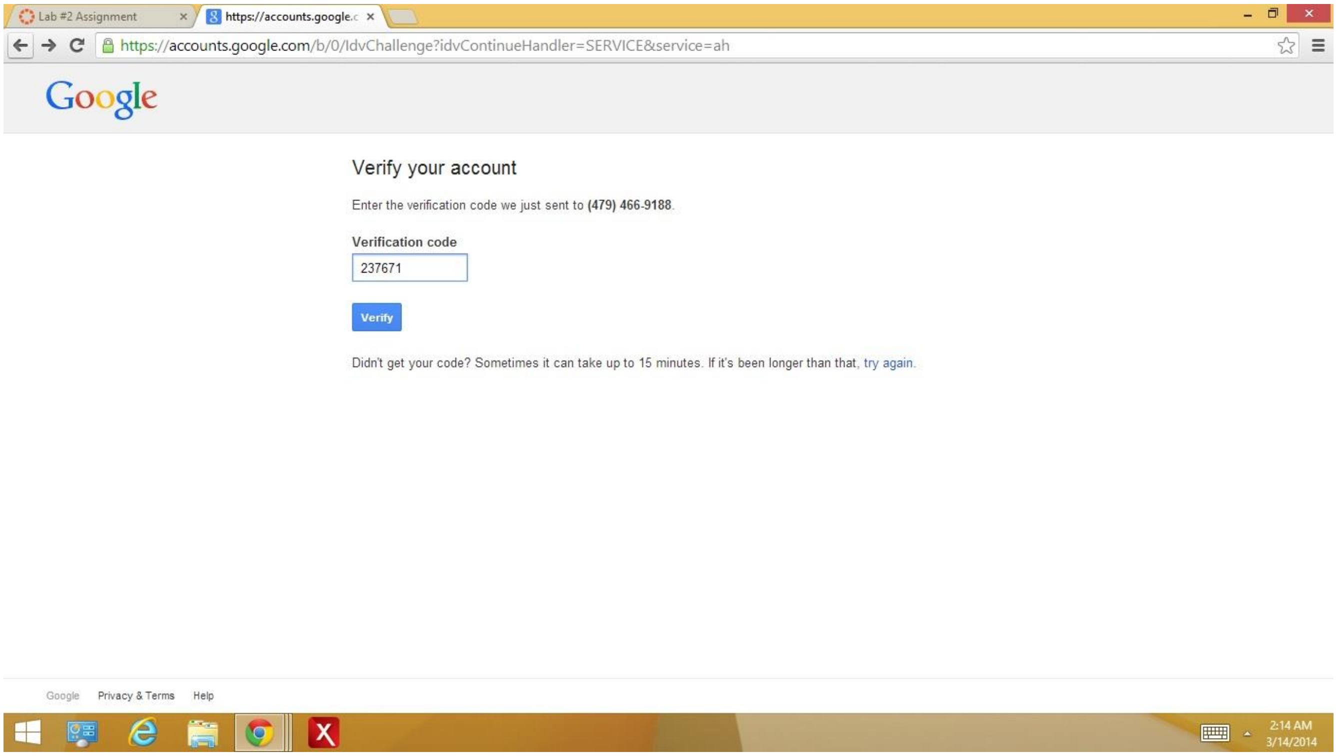
Phone number: (479) 466-9188

Send verification code

Google Privacy & Terms Help

2:15 AM 3/14/2014

3. Enter the verification code that you get through voice call or text message from your phone.


Lab #2 Assignment
https://accounts.google.c
https://accounts.google.com/b/0/IdvChallenge?idvContinueHandler=SERVICE&service=ah
Google
Verify
Google
Privacy & Terms
Help
2:14 AM
3/14/2014

Verify your account

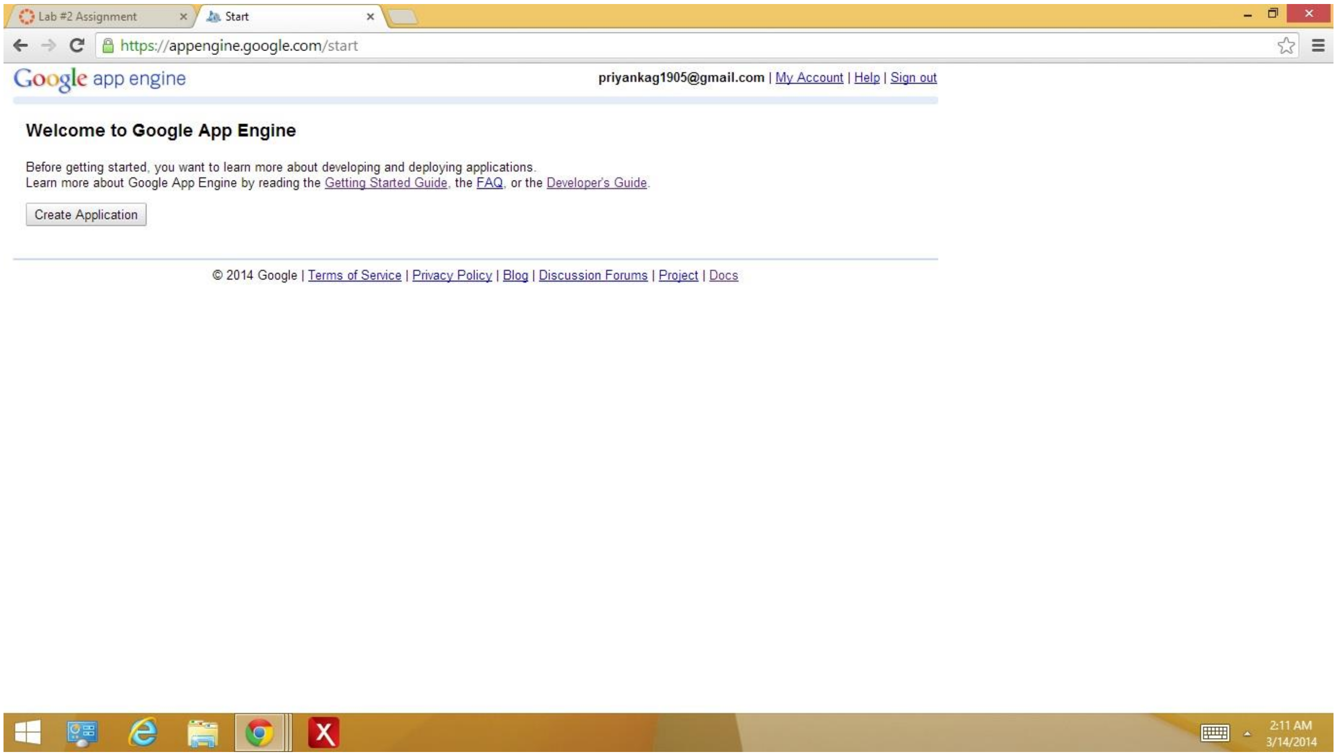
Enter the verification code we just sent to **(479) 466-9188**.

Verification code

237671

Didn't get your code? Sometimes it can take up to 15 minutes. If it's been longer than that, try again.

4. On successful verification, create a new application. Click on *Create Application*.


Lab #2 Assignment
Start
https://appengine.google.com/start
Google app engine
priyankag1905@gmail.com | My Account | Help | Sign out
Create Application
2:11 AM
3/14/2014

Welcome to Google App Engine

Before getting started, you want to learn more about developing and deploying applications.
Learn more about Google App Engine by reading the Getting Started Guide, the FAQ, or the Developer's Guide.

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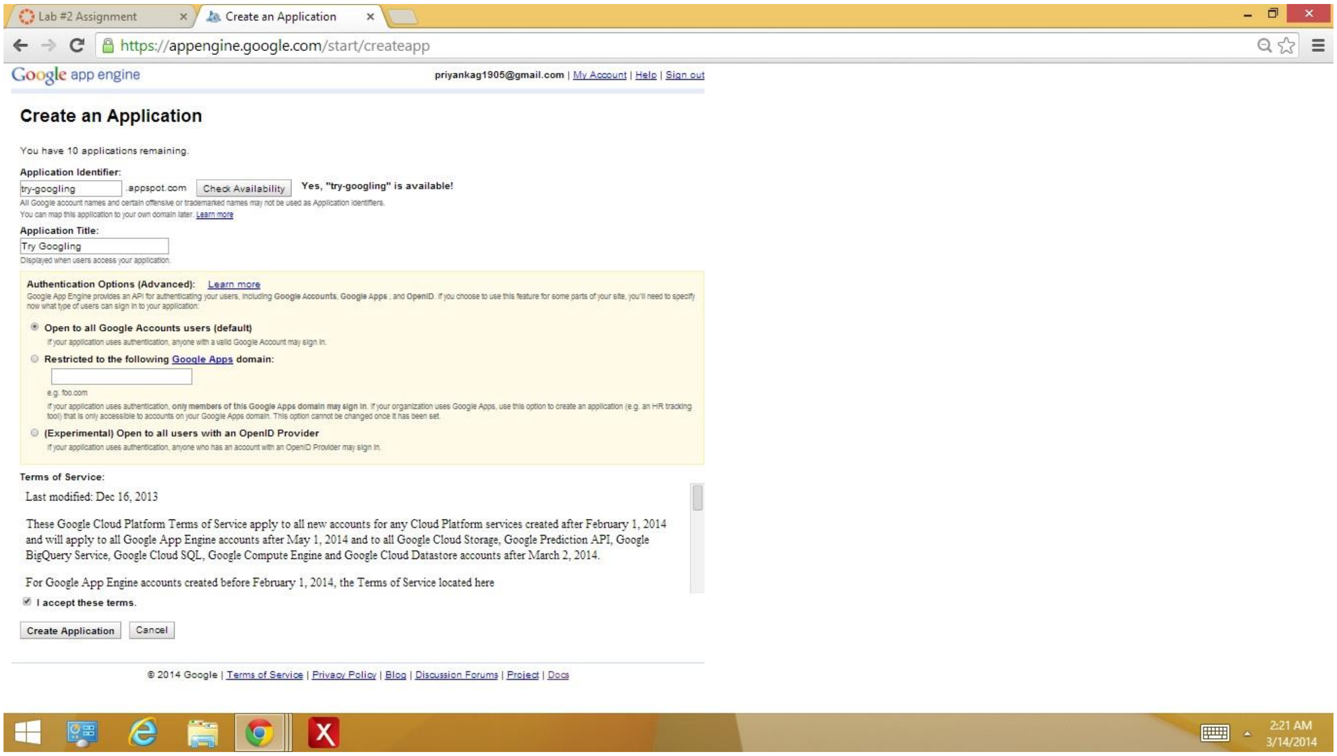
5. Enter the *Application Id* and *Check Availability*. If the id is available, enter the *Application Title* and *Authentication Option. Accept the terms* and *create application.*



priyankag1905@gmail.com | My Account | Help | Sign out

Create an Application

You have 10 applications remaining.

Application Identifier:
try-googling .appspot.com [Check Availability] Yes, "try-googling" is available!
All Google account names and certain offensive or trademarked names may not be used as Application Identifiers.
You can map this application to your own domain later. Learn more

Application Title:
Try Googling
Displayed when users access your application.

Authentication Options (Advanced): Learn more
Google App Engine provides an API for authenticating your users, including **Google Accounts**, **Google Apps** , and **OpenID**. If you choose to use this feature for some parts of your site, you'll need to specify now what type of users can sign in to your application:

● Open to all Google Accounts users (default)
If your application uses authentication, anyone with a valid Google Account may sign in.

○ Restricted to the following Google Apps domain:
e.g. foo.com
If your application uses authentication, **only members of this Google Apps domain may sign in**. If your organization uses Google Apps, use this option to create an application (e.g. an HR tracking tool) that is only accessible to accounts on your Google Apps domain. This option cannot be changed once it has been set.

○ (Experimental) Open to all users with an OpenID Provider
If your application uses authentication, anyone who has an account with an OpenID Provider may sign in.

Terms of Service:

Last modified: Dec 16, 2013

These Google Cloud Platform Terms of Service apply to all new accounts for any Cloud Platform services created after February 1, 2014 and will apply to all Google App Engine accounts after May 1, 2014 and to all Google Cloud Storage, Google Prediction API, Google BigQuery Service, Google Cloud SQL, Google Compute Engine and Google Cloud Datastore accounts after March 2, 2014.

For Google App Engine accounts created before February 1, 2014, the Terms of Service located here

☑ I accept these terms.

[Create Application] [Cancel]

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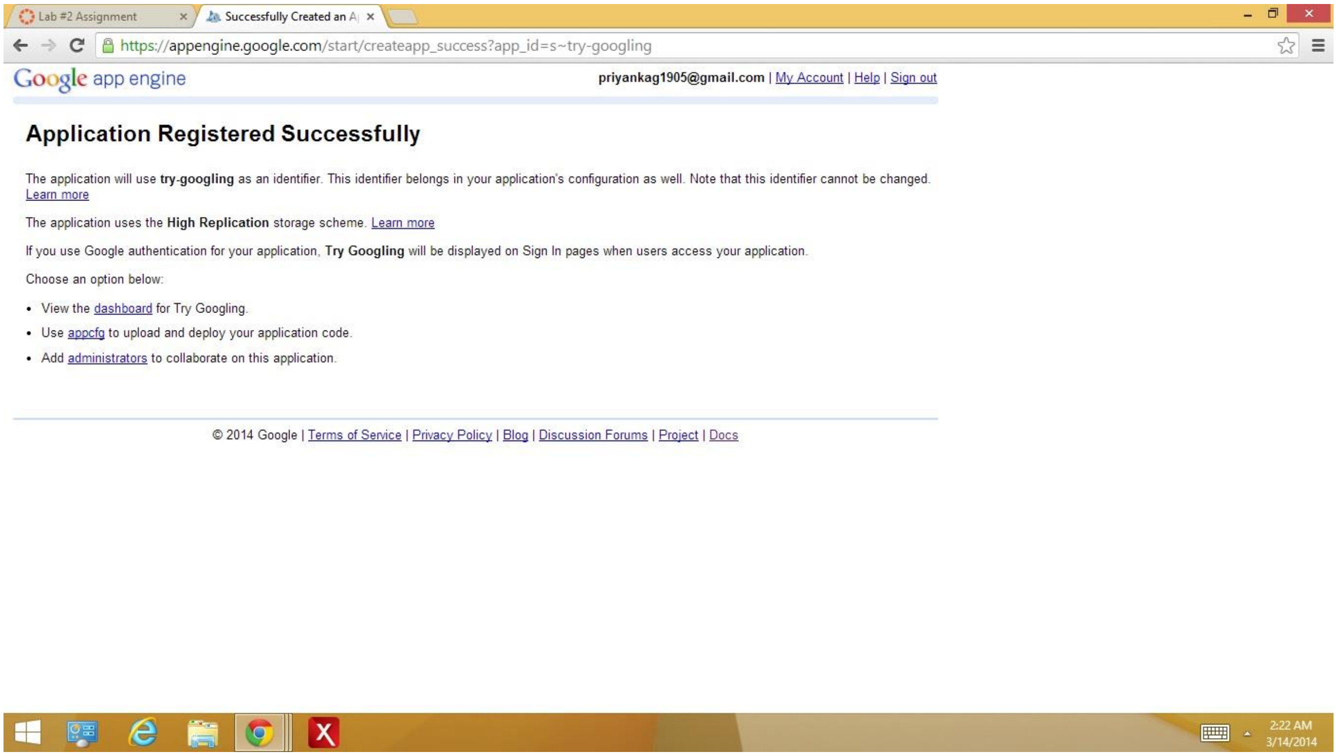
6. On successful registration of the application, click on *Dashboard* to see the current status of application parameters and logs.


Lab #2 Assignment
Successfully Created an A
https://appengine.google.com/start/createapp_success?app_id=s~try-googling
Google app engine
2:22 AM
3/14/2014

priyankag1905@gmail.com | My Account | Help | Sign out

Application Registered Successfully

The application will use **try-googling** as an identifier. This identifier belongs in your application's configuration as well. Note that this identifier cannot be changed. Learn more

The application uses the **High Replication** storage scheme. Learn more

If you use Google authentication for your application, **Try Googling** will be displayed on Sign In pages when users access your application.

Choose an option below:

- View the dashboard for Try Googling.
- Use appcfg to upload and deploy your application code.
- Add administrators to collaborate on this application.

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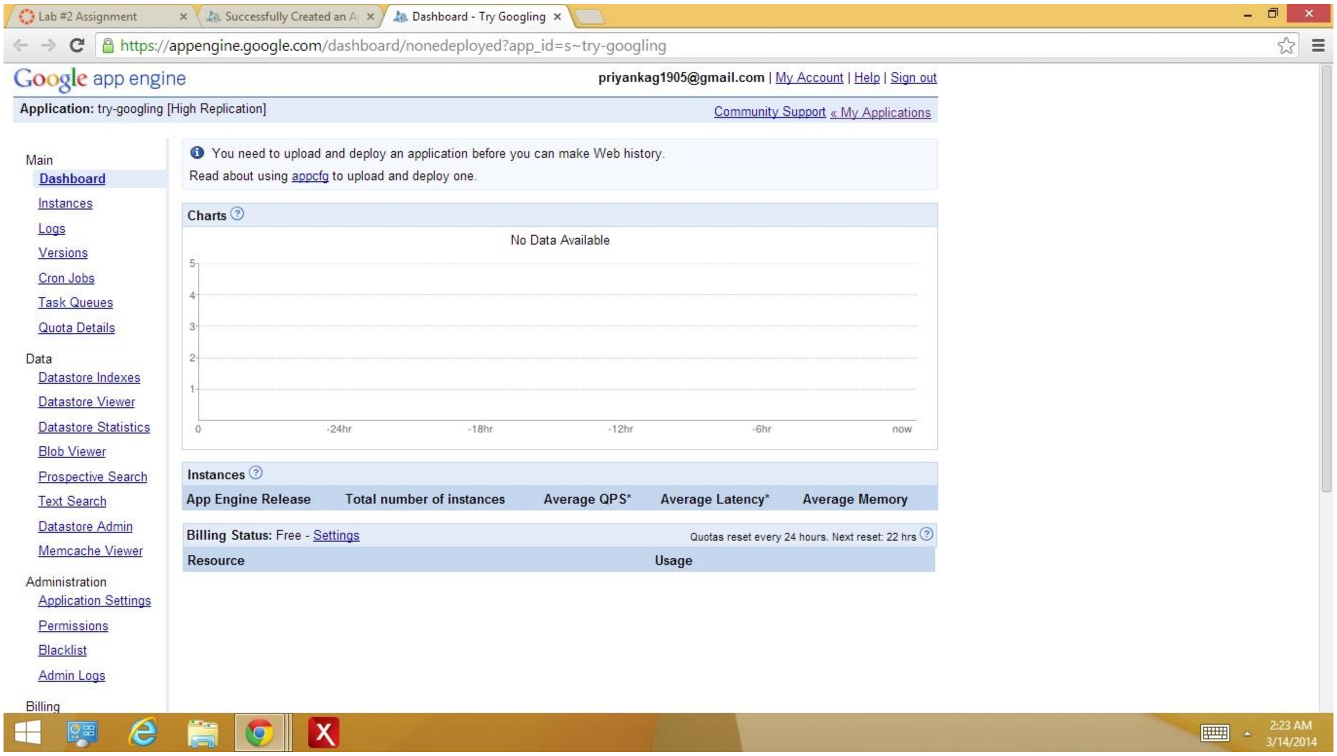
7. All usage parameters are 0, as the application has not been used yet.



Google app engine

priyankag1905@gmail.com | My Account | Help | Sign out

Application: try-googling [High Replication]

Community Support « My Applications

You need to upload and deploy an application before you can make Web history.
Read about using appcfg to upload and deploy one.

Charts

No Data Available

Instances

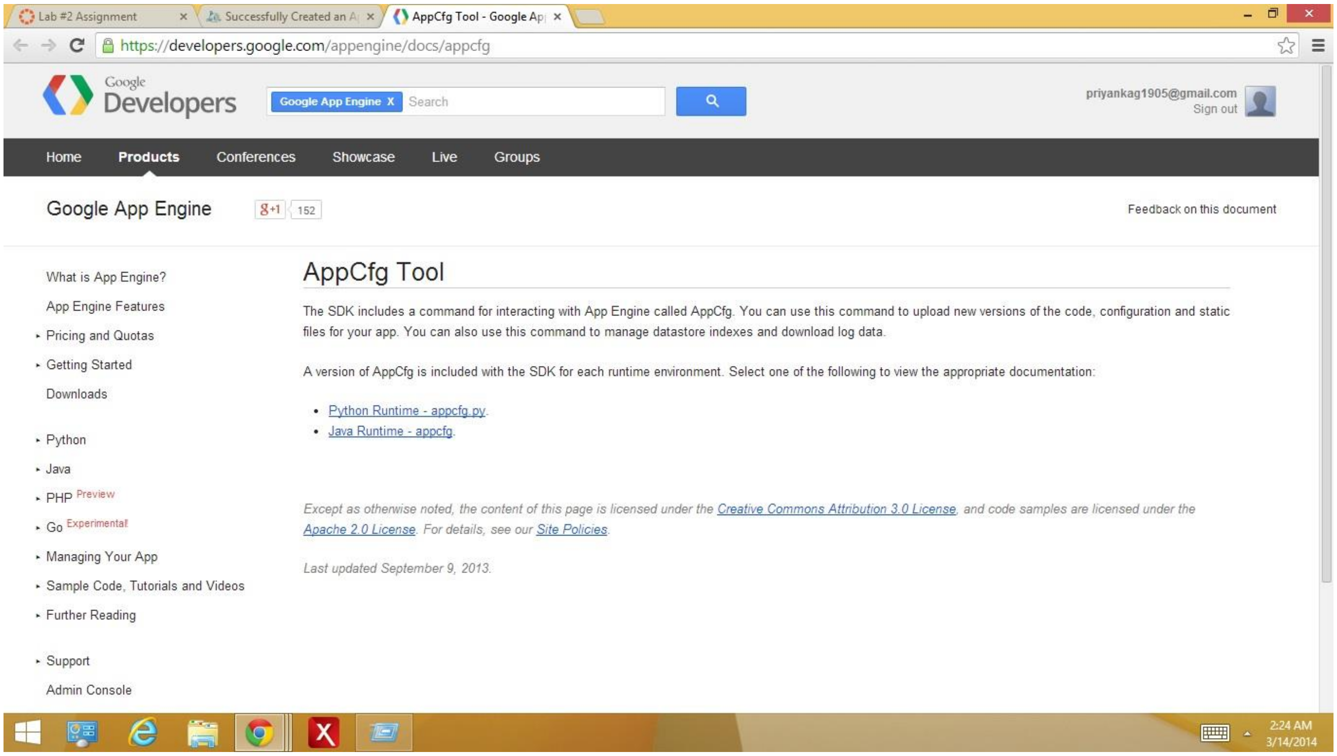
App Engine Release	Total number of instances	Average QPS*	Average Latency*	Average Memory

Billing Status: Free - Settings

Quotas reset every 24 hours. Next reset: 22 hrs

Resource	Usage

8. From the screen in *Step 6*, click on *AppCfg* to use the command line utility for downloading, deploying, managing applications on GAE.



AppCfg Tool

The SDK includes a command for interacting with App Engine called AppCfg. You can use this command to upload new versions of the code, configuration and static files for your app. You can also use this command to manage datastore indexes and download log data.

A version of AppCfg is included with the SDK for each runtime environment. Select one of the following to view the appropriate documentation:

- Python Runtime - appcfg.py.
- Java Runtime - appcfg.

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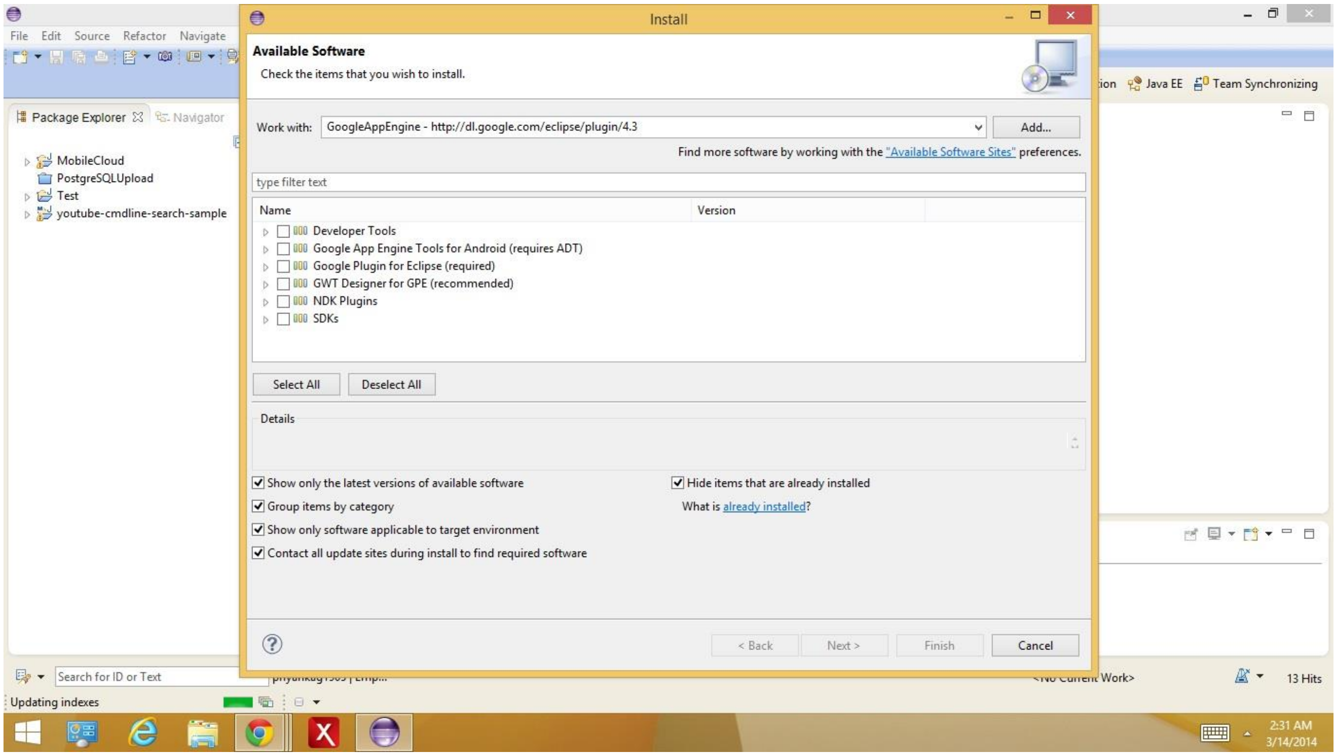
Last updated September 9, 2013.

9. Alternatively, use GAE Eclipse Plugin for managing and deploying applications. The link for the plugin is available at https://developers.google.com/appengine/docs/java/tools/eclipse#Installing_the_Google_Plugin_for_Eclipse. Launch eclipse, go to *Help > Install New Software* and enter the plugin URL: http://dl.google.com/eclipse/plugin/4.3 (current version).



Install

Available Software

Check the items that you wish to install.

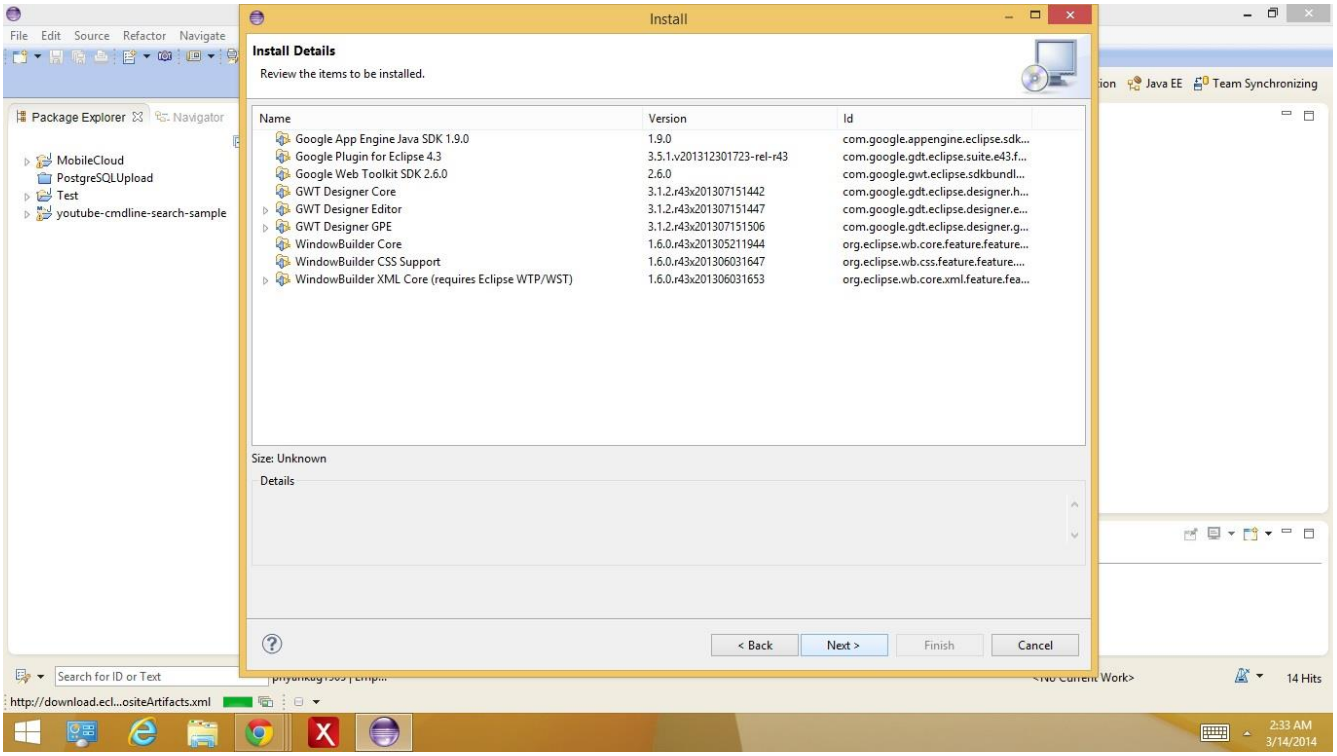
Work with: GoogleAppEngine - http://dl.google.com/eclipse/plugin/4.3

Find more software by working with the "Available Software Sites" preferences.

Name	Version
□ Developer Tools	
□ Google App Engine Tools for Android (requires ADT)	
□ Google Plugin for Eclipse (required)	
□ GWT Designer for GPE (recommended)	
□ NDK Plugins	
□ SDKs	

☑ Show only the latest versions of available software
☑ Hide items that are already installed
☑ Group items by category
What is already installed?
☑ Show only software applicable to target environment
☑ Contact all update sites during install to find required software

10. *Select All* and click *Next.*



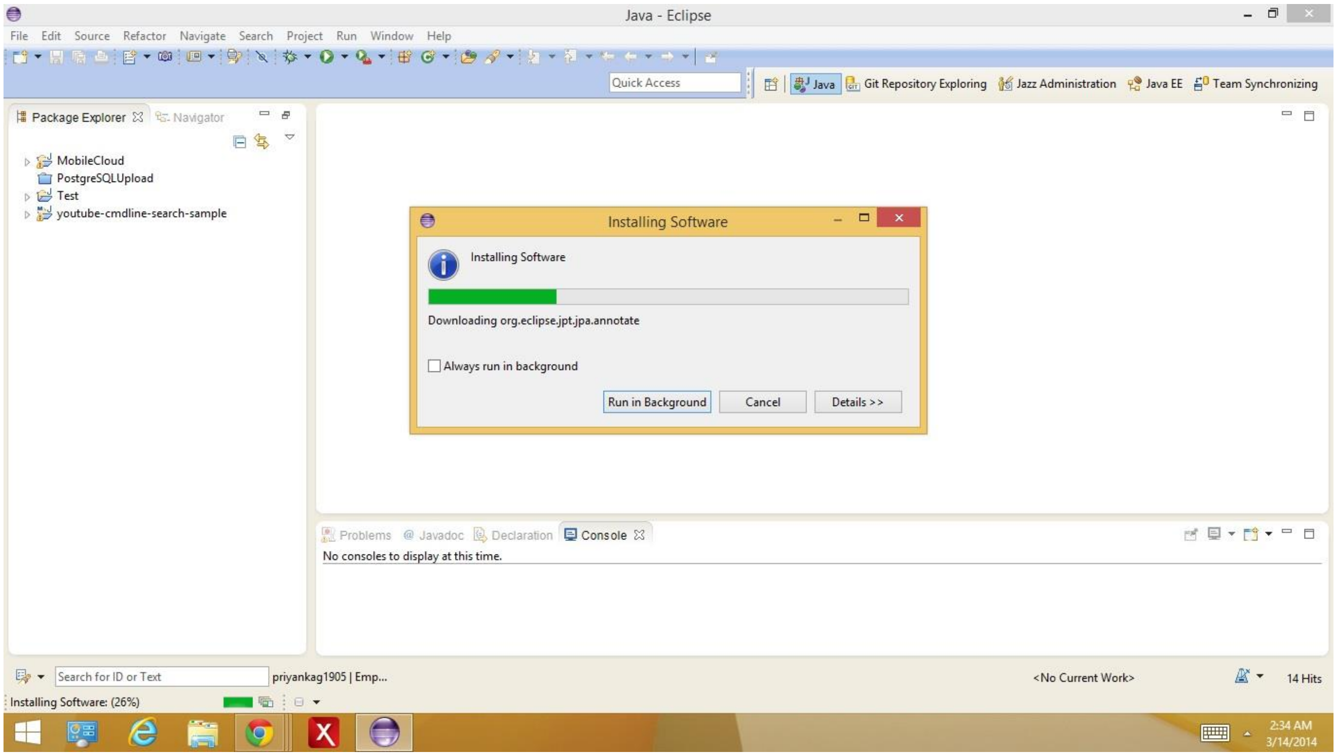
Install

Install Details

Review the items to be installed.

Name	Version	Id
Google App Engine Java SDK 1.9.0	1.9.0	com.google.appengine.eclipse.sdk...
Google Plugin for Eclipse 4.3	3.5.1.v201312301723-rel-r43	com.google.gdt.eclipse.suite.e43.f...
Google Web Toolkit SDK 2.6.0	2.6.0	com.google.gwt.eclipse.sdkbundl...
GWT Designer Core	3.1.2.r43x201307151442	com.google.gdt.eclipse.designer.h...
GWT Designer Editor	3.1.2.r43x201307151447	com.google.gdt.eclipse.designer.e...
GWT Designer GPE	3.1.2.r43x201307151506	com.google.gdt.eclipse.designer.g...
WindowBuilder Core	1.6.0.r43x201305211944	org.eclipse.wb.core.feature.feature...
WindowBuilder CSS Support	1.6.0.r43x201306031647	org.eclipse.wb.css.feature.feature....
WindowBuilder XML Core (requires Eclipse WTP/WST)	1.6.0.r43x201306031653	org.eclipse.wb.core.xml.feature.fea...

Size: Unknown



Installing Software

Installing Software

Downloading org.eclipse.jpt.jpa.annotate

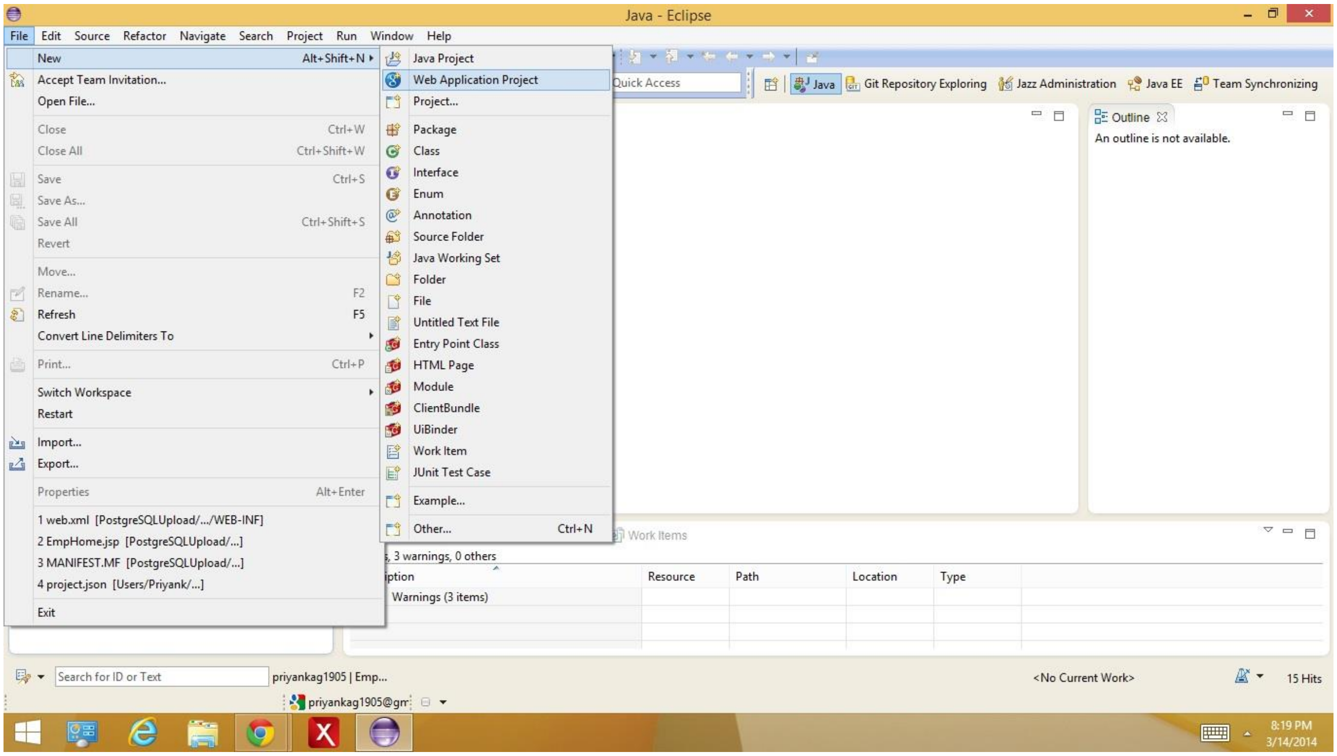
□ Always run in background

Run in Background | Cancel | Details >>

No consoles to display at this time.

Installing Software: (26%)

11. After the plugin is successfully installed, create a new *Web Application Project* from *File > New > Web Application Project.*

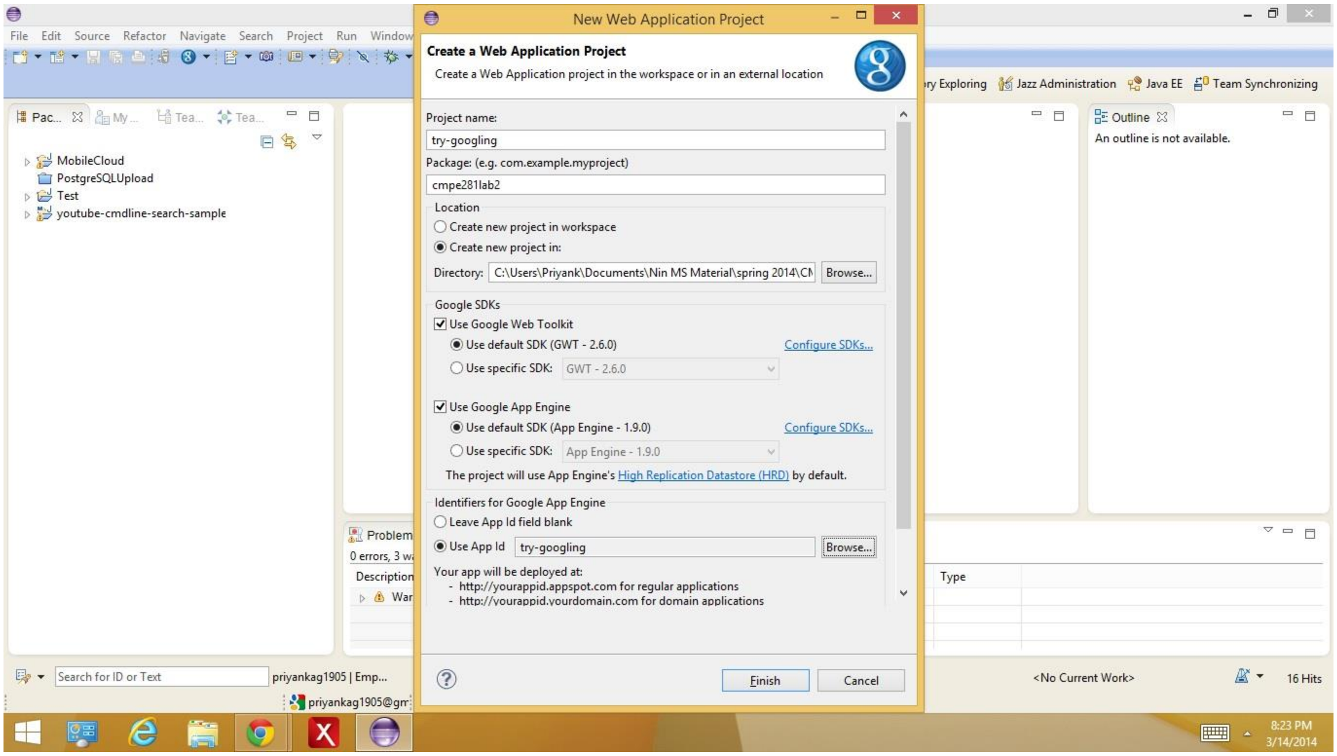


An outline is not available.

, 3 warnings, 0 others

Warnings (3 items)

12. Enter the *Project name, Package name, Location.* Uncheck *Use Google Web Toolkit* and select *Use Google App Engine* for this application. Enter the *App Id* created in Step 5.



New Web Application Project

Create a Web Application Project

Create a Web Application project in the workspace or in an external location

Project name: try-googling

Package: (e.g. com.example.myproject) cmpe281lab2

Location
○ Create new project in workspace
● Create new project in:
Directory: C:\Users\Priyank\Documents\Nin MS Material\spring 2014\CN Browse...

Google SDKs
☑ Use Google Web Toolkit
● Use default SDK (GWT - 2.6.0) Configure SDKs...
○ Use specific SDK: GWT - 2.6.0

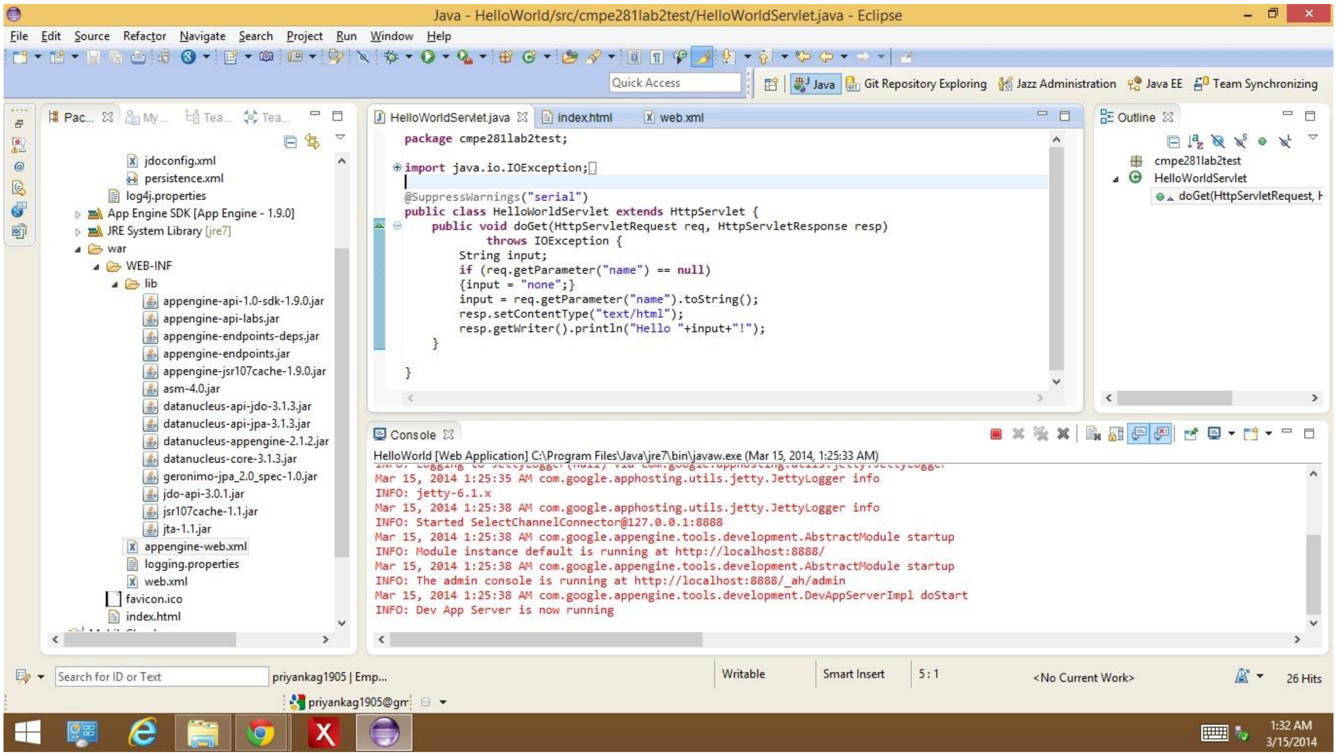
☑ Use Google App Engine
● Use default SDK (App Engine - 1.9.0) Configure SDKs...
○ Use specific SDK: App Engine - 1.9.0
The project will use App Engine's High Replication Datastore (HRD) by default.

Identifiers for Google App Engine
○ Leave App Id field blank
● Use App Id try-googling Browse...

Your app will be deployed at:
- http://yourappid.appspot.com for regular applications
- http://yourappid.yourdomain.com for domain applications

Finish Cancel

13. The application contains *Hello World* java servlet application. Modify the application as per your requirement. I added a textbox and submit button to the *index.html* and corresponding servlet code to the *doget* method in the .java file, to display the text from the textbox.



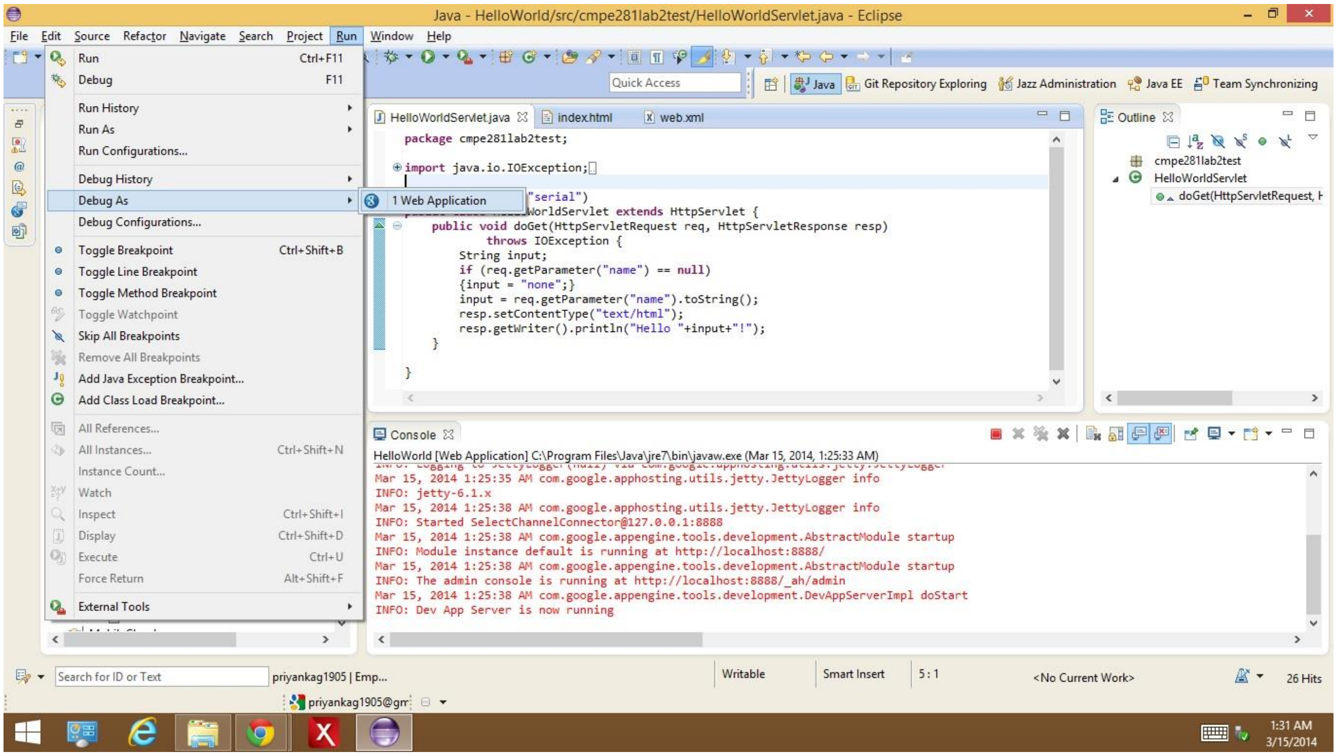
Java - HelloWorld/src/cmpe281lab2test/HelloWorldServlet.java - Eclipse

```java
package cmpe281lab2test;

import java.io.IOException;

@SuppressWarnings("serial")
public class HelloWorldServlet extends HttpServlet {
    public void doGet(HttpServletRequest req, HttpServletResponse resp)
            throws IOException {
        String input;
        if (req.getParameter("name") == null)
        {input = "none";}
        input = req.getParameter("name").toString();
        resp.setContentType("text/html");
        resp.getWriter().println("Hello "+input+"!");
    }

}
```

HelloWorld [Web Application] C:\Program Files\Java\jre7\bin\javaw.exe (Mar 15, 2014, 1:25:33 AM)

```
Mar 15, 2014 1:25:35 AM com.google.apphosting.utils.jetty.JettyLogger info
INFO: jetty-6.1.x
Mar 15, 2014 1:25:38 AM com.google.apphosting.utils.jetty.JettyLogger info
INFO: Started SelectChannelConnector@127.0.0.1:8888
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.AbstractModule startup
INFO: Module instance default is running at http://localhost:8888/
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.AbstractModule startup
INFO: The admin console is running at http://localhost:8888/_ah/admin
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.DevAppServerImpl doStart
INFO: Dev App Server is now running
```

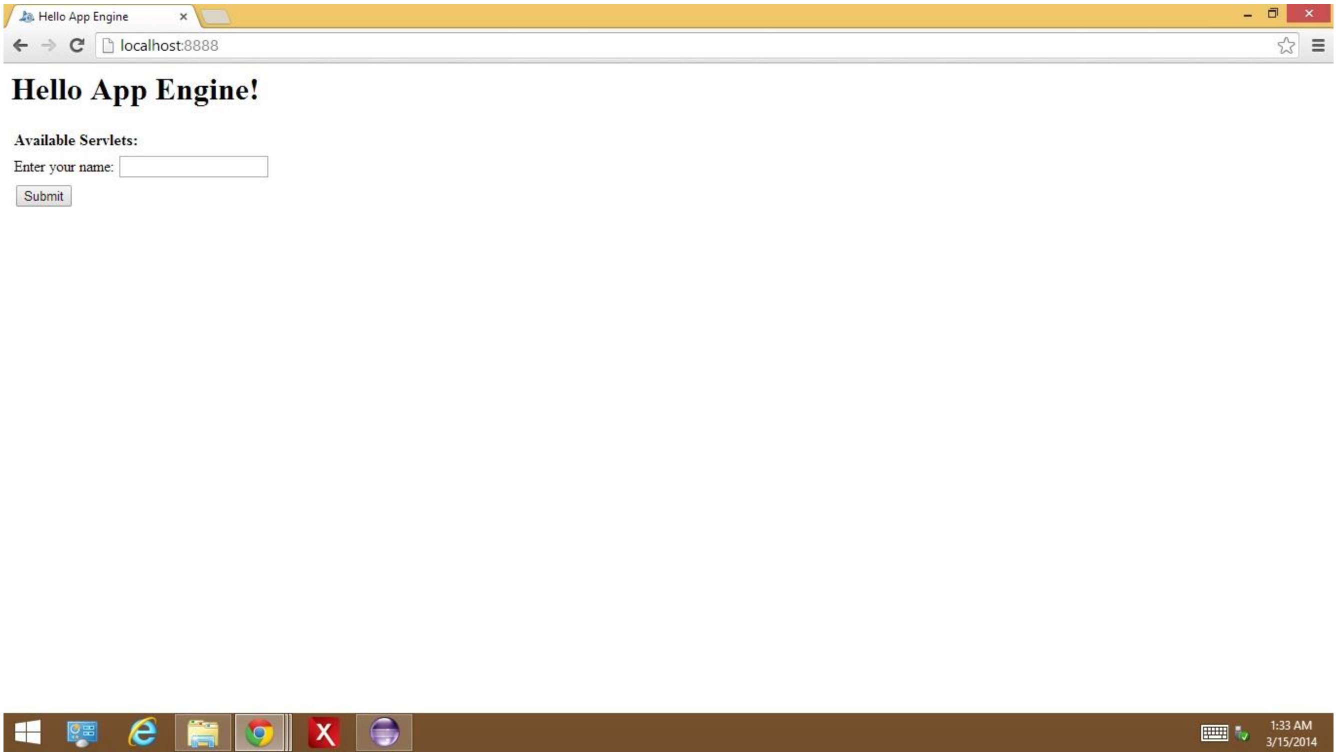
14. To debug the application locally, go to *Run>Debug As>Web Application.*



```
package cmpe281lab2test;

import java.io.IOException;

"serial")
WorldServlet extends HttpServlet {
    public void doGet(HttpServletRequest req, HttpServletResponse resp)
            throws IOException {
        String input;
        if (req.getParameter("name") == null)
        {input = "none";}
        input = req.getParameter("name").toString();
        resp.setContentType("text/html");
        resp.getWriter().println("Hello "+input+"!");
    }

}
```

```
HelloWorld [Web Application] C:\Program Files\Java\jre7\bin\javaw.exe (Mar 15, 2014, 1:25:33 AM)
Mar 15, 2014 1:25:35 AM com.google.apphosting.utils.jetty.JettyLogger info
INFO: jetty-6.1.x
Mar 15, 2014 1:25:38 AM com.google.apphosting.utils.jetty.JettyLogger info
INFO: Started SelectChannelConnector@127.0.0.1:8888
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.AbstractModule startup
INFO: Module instance default is running at http://localhost:8888/
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.AbstractModule startup
INFO: The admin console is running at http://localhost:8888/_ah/admin
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.DevAppServerImpl doStart
INFO: Dev App Server is now running
```

15. When the console displays the message "*Dev App Server is now running*", browse to http://localhost:8888 , to display the start screen.
For this app, enter text 'Priyanka' in the textbox .Click submit.

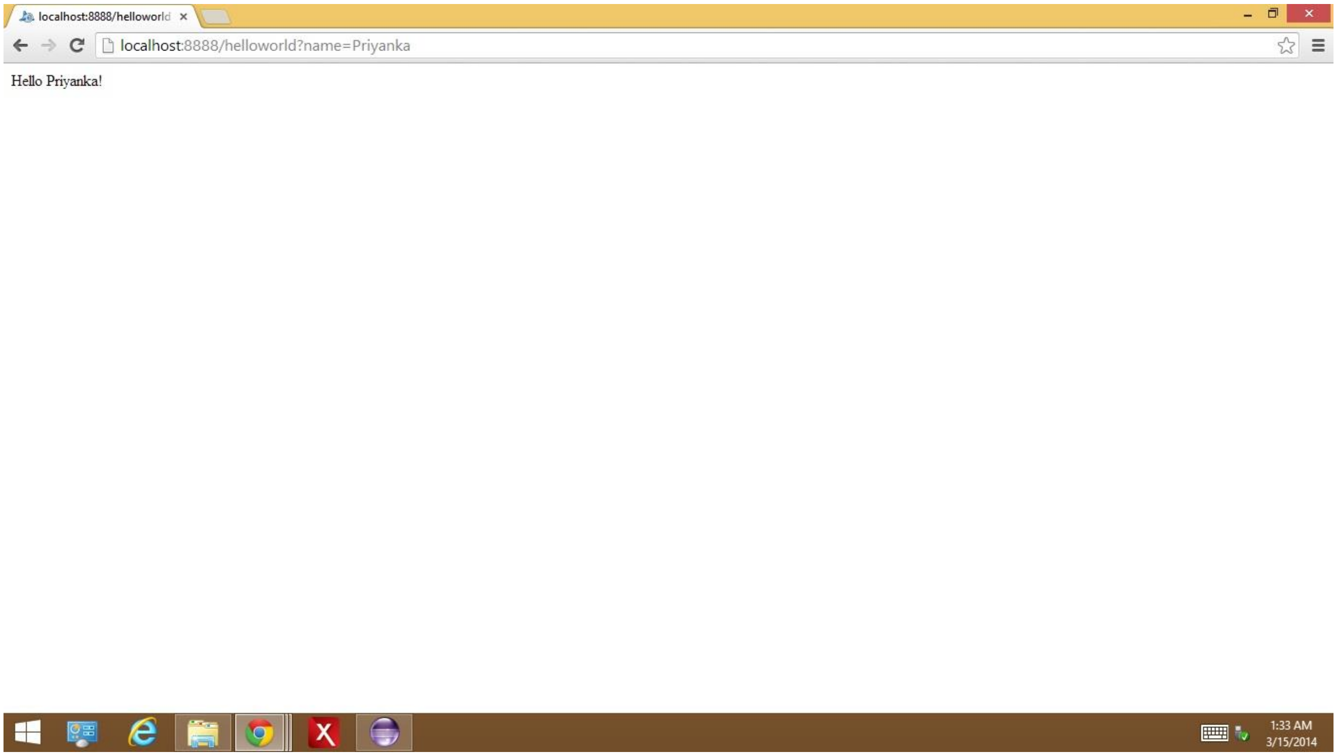


Hello App Engine!

Available Servlets:

Enter your name:

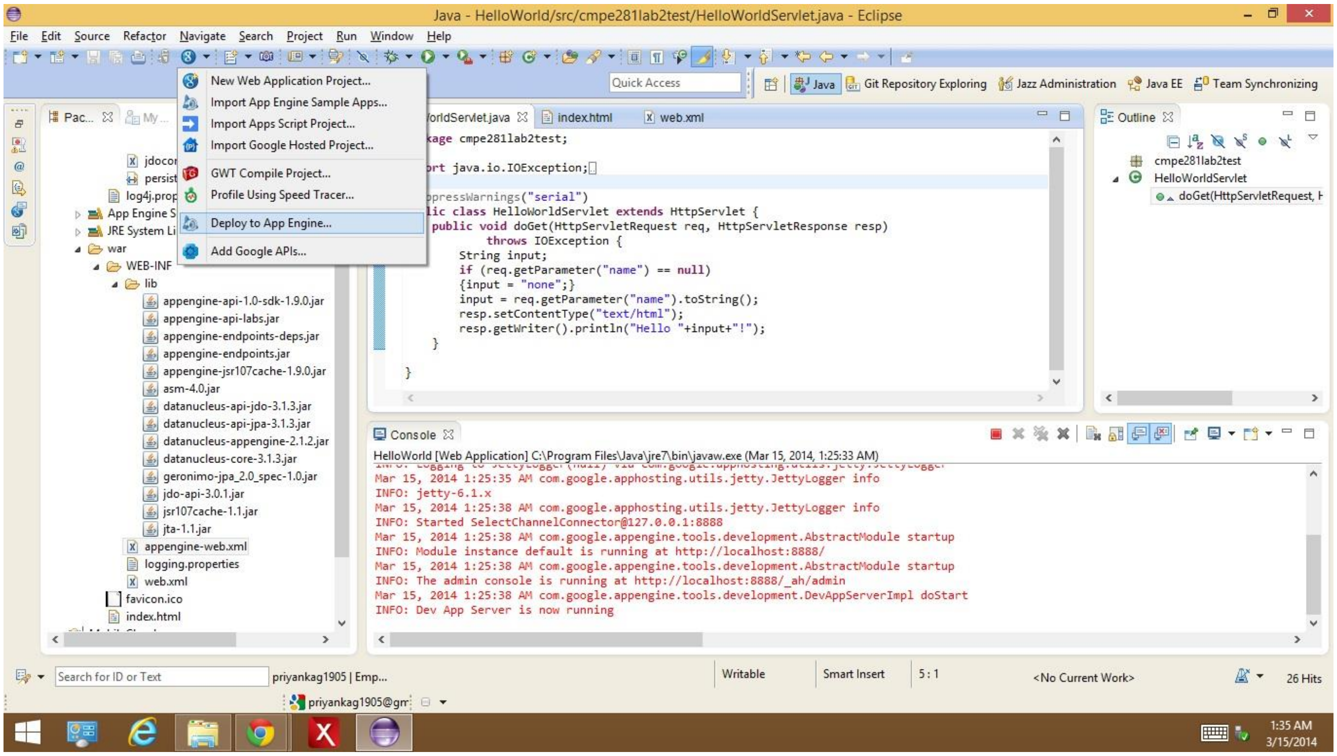
16. The following screen is displayed, which means the application is running.



localhost:8888/helloworld?name=Priyanka

Hello Priyanka!

17. Deploy the application to the App Engine. Scroll to the *google menu* > *Deploy to App Engine.*

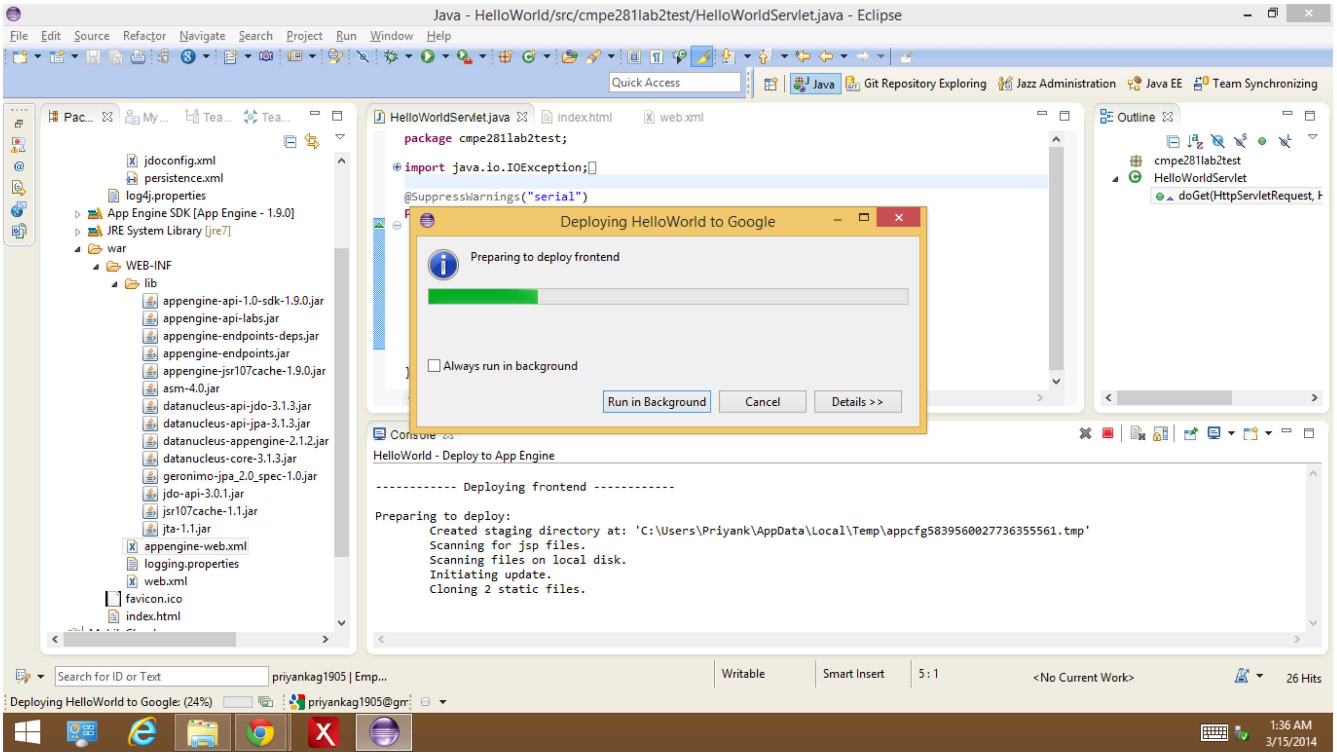


Java - HelloWorld/src/cmpe281lab2test/HelloWorldServlet.java - Eclipse

```
kage cmpe281lab2test;

ort java.io.IOException;

ppressWarnings("serial")
lic class HelloWorldServlet extends HttpServlet {
 public void doGet(HttpServletRequest req, HttpServletResponse resp)
         throws IOException {
     String input;
     if (req.getParameter("name") == null)
     {input = "none";}
     input = req.getParameter("name").toString();
     resp.setContentType("text/html");
     resp.getWriter().println("Hello "+input+"!");
  }

}
```

HelloWorld [Web Application] C:\Program Files\Java\jre7\bin\javaw.exe (Mar 15, 2014, 1:25:33 AM)

```
Mar 15, 2014 1:25:35 AM com.google.apphosting.utils.jetty.JettyLogger info
INFO: jetty-6.1.x
Mar 15, 2014 1:25:38 AM com.google.apphosting.utils.jetty.JettyLogger info
INFO: Started SelectChannelConnector@127.0.0.1:8888
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.AbstractModule startup
INFO: Module instance default is running at http://localhost:8888/
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.AbstractModule startup
INFO: The admin console is running at http://localhost:8888/_ah/admin
Mar 15, 2014 1:25:38 AM com.google.appengine.tools.development.DevAppServerImpl doStart
INFO: Dev App Server is now running
```



Java - HelloWorld/src/cmpe281lab2test/HelloWorldServlet.java - Eclipse

```
package cmpe281lab2test;

import java.io.IOException;

@SuppressWarnings("serial")
```

Deploying HelloWorld to Google

Preparing to deploy frontend

□ Always run in background

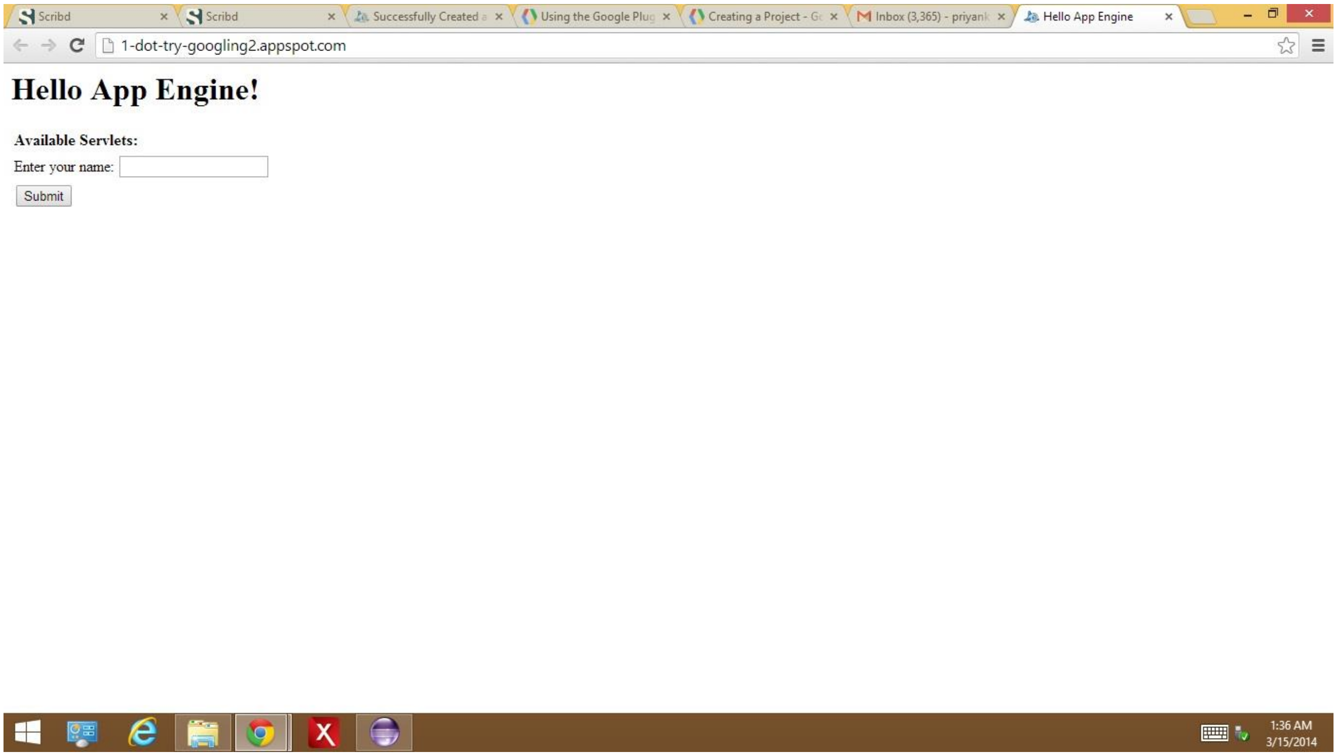
Console

HelloWorld - Deploy to App Engine

```
------------ Deploying frontend ------------

Preparing to deploy:
        Created staging directory at: 'C:\Users\Priyank\AppData\Local\Temp\appcfg5839560027736355561.tmp'
        Scanning for jsp files.
        Scanning files on local disk.
        Initiating update.
        Cloning 2 static files.
```

Deploying HelloWorld to Google: (24%)

18. On successful deployment, eclipse launches the browser and launches the link *[App].appspot.com.*



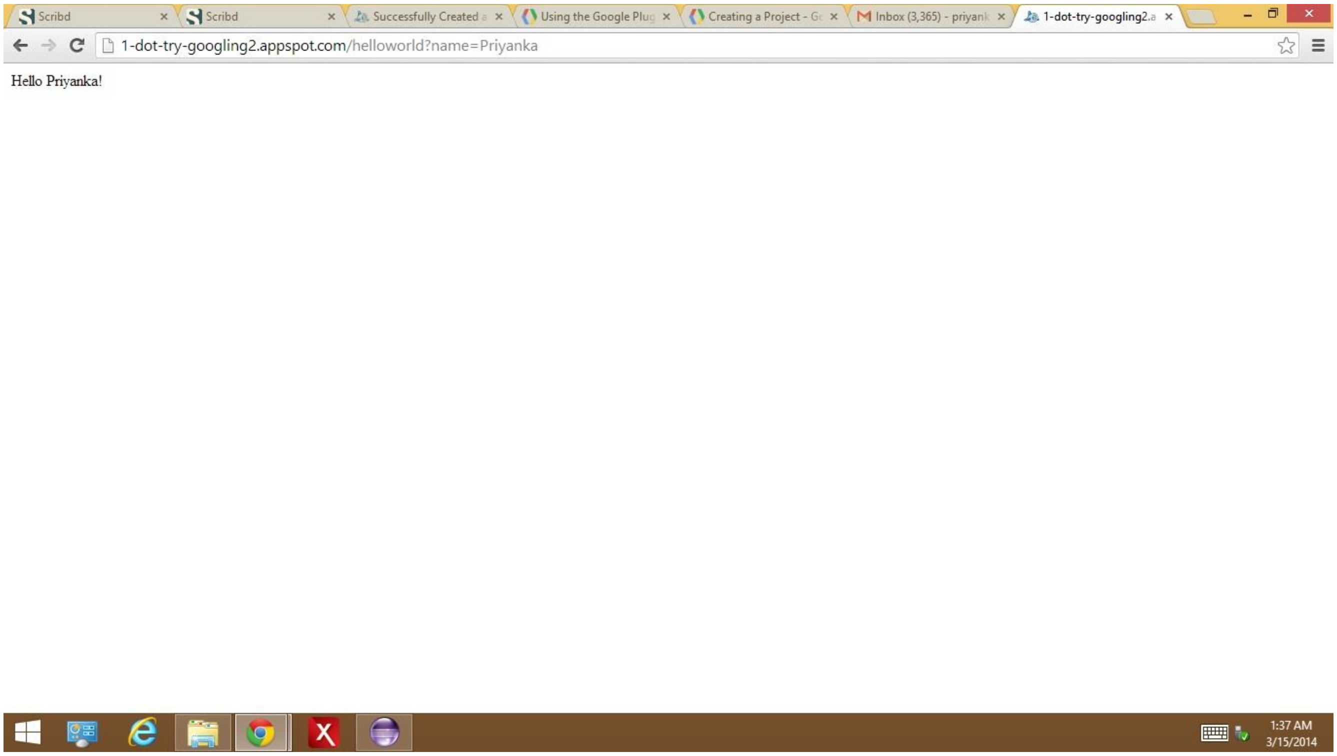
1-dot-try-googling2.appspot.com

Hello App Engine!

Available Servlets:

Enter your name:

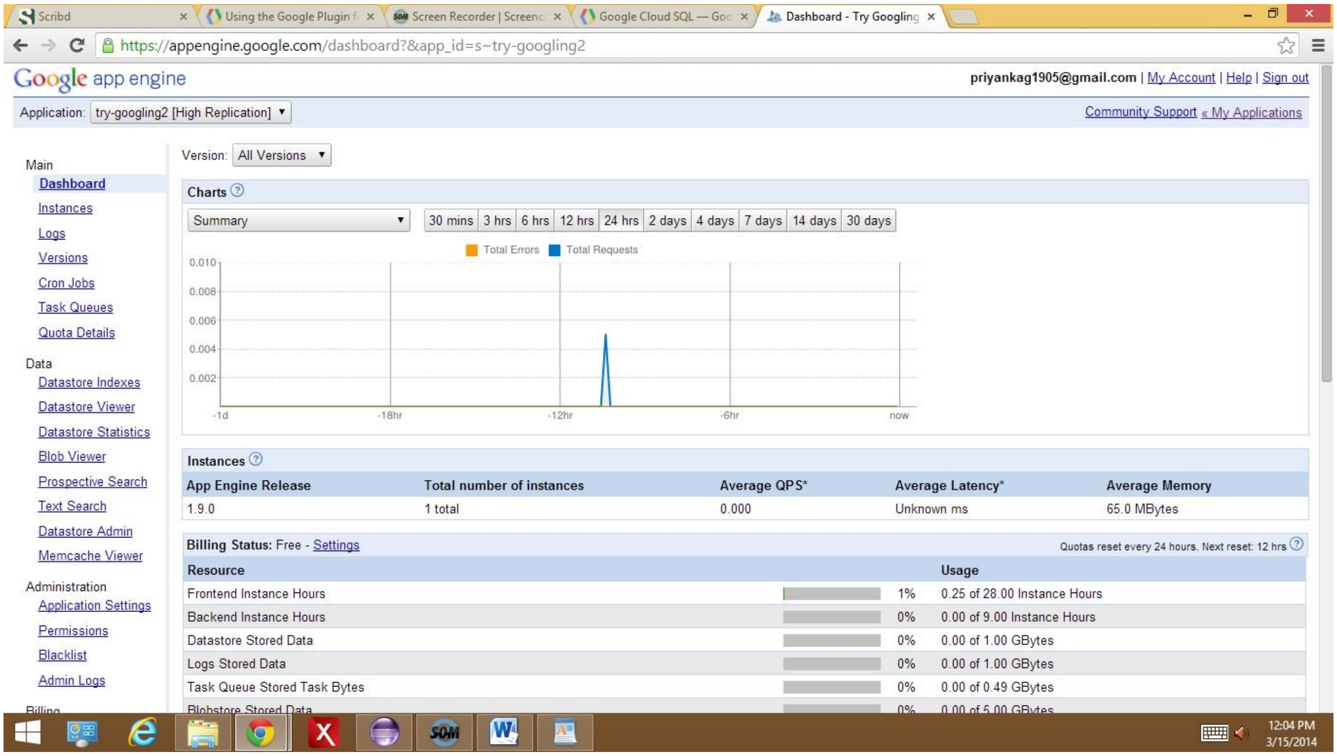
Submit



1-dot-try-googling2.appspot.com/helloworld?name=Priyanka

Hello Priyanka!

19. Check the dashboard from *Step 6*. You will see some activity on the dashboard now.



https://appengine.google.com/dashboard?&app_id=s~try-googling2

Application: try-googling2 [High Replication]

Version: All Versions

Instances

App Engine Release	Total number of instances	Average QPS*	Average Latency*	Average Memory
1.9.0	1 total	0.000	Unknown ms	65.0 MBytes

Billing Status: Free - Settings

Quotas reset every 24 hours. Next reset: 12 hrs

Resource		Usage
Frontend Instance Hours	1%	0.25 of 28.00 Instance Hours
Backend Instance Hours	0%	0.00 of 9.00 Instance Hours
Datastore Stored Data	0%	0.00 of 1.00 GBytes
Logs Stored Data	0%	0.00 of 1.00 GBytes
Task Queue Stored Task Bytes	0%	0.00 of 0.49 GBytes
Blobstore Stored Data	0%	0.00 of 5.00 GBytes

Thus, the application is successfully deployed on GAE.