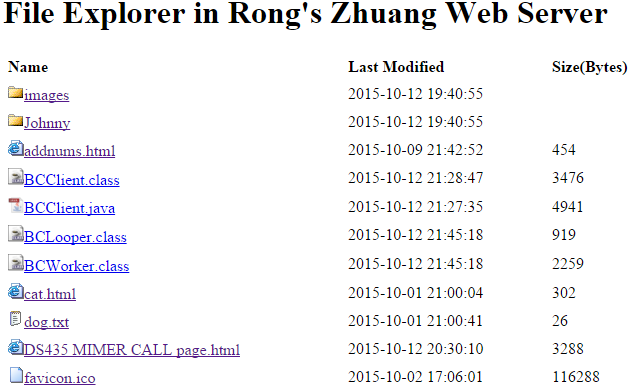
Mimer

1. What is Mimer?

Personal MIME type generation and handler

1. How it works?
   1. Server side

MyWebServer, Handler, shim.bat



* 1. Client side

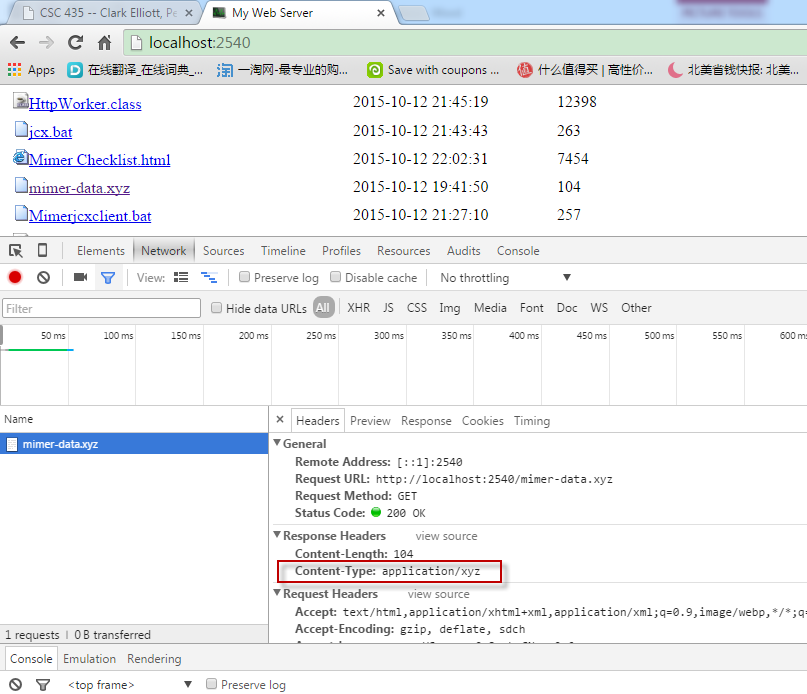
1. Environment

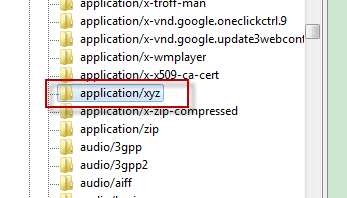
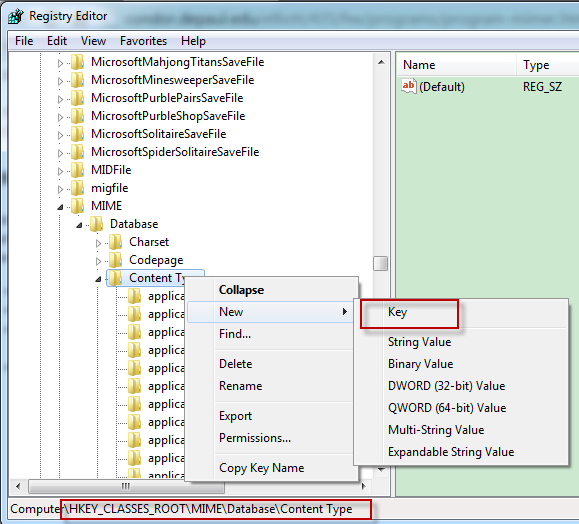
Windows 7 64-bit

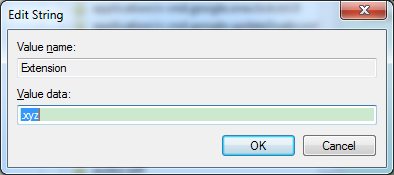
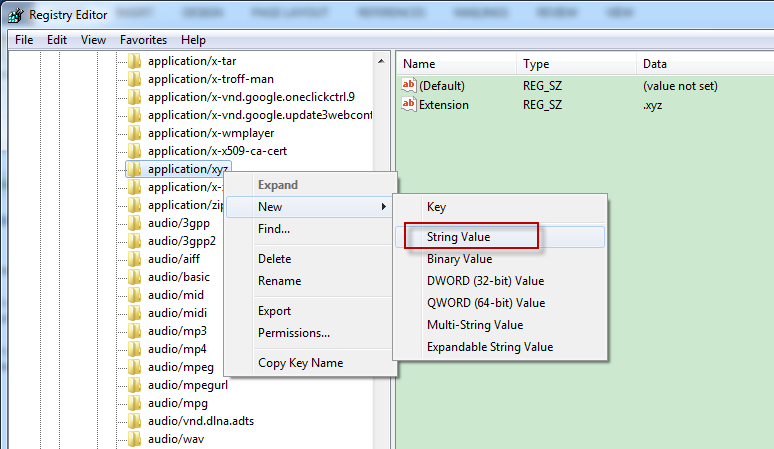
1. Development Steps

Server Side:

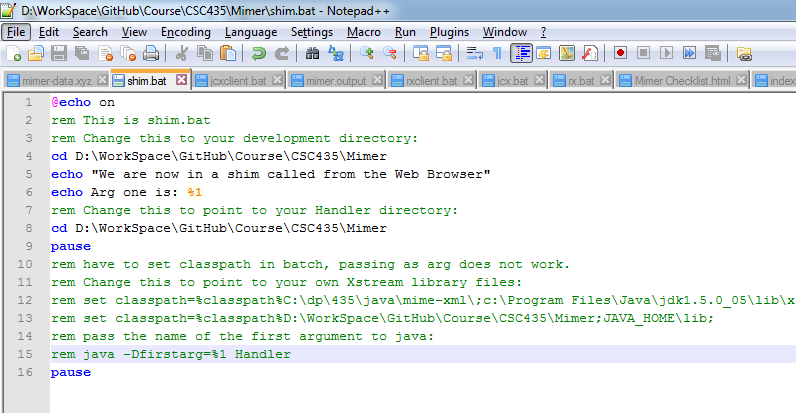
* 1. (Step1) Enhance MyWebServer.java
     1. Update method getContentType, return new MIME type ‘application/xyz’ for files with extension ‘.xyz’.
     2. Open a ‘.xyz’ file to check whether the Content-Type is returned correctly.

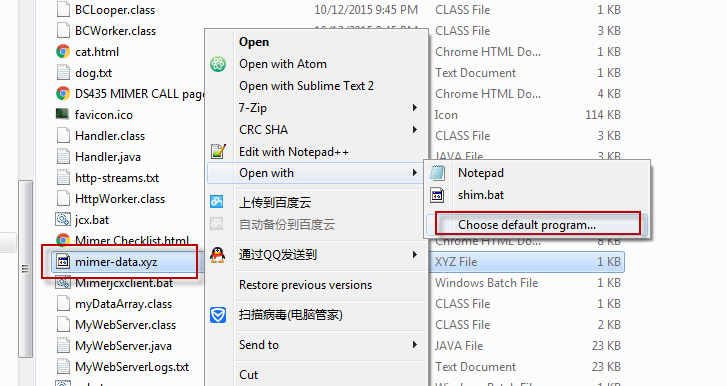


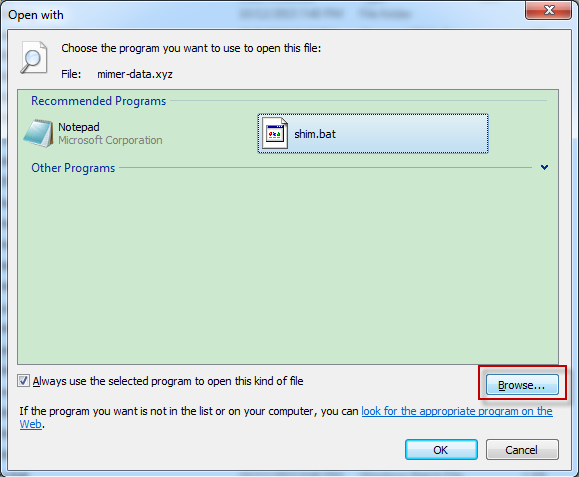
* 1. (Step1) Define new customized MIME type
     1. Win ->Run->‘regedit’
     2. Navigate to HKEY\_CLASSES\_ROOT\MIME\Database\Content Type, create new key ‘application/xyz’.
     3. Create new String Value ‘.xyz’

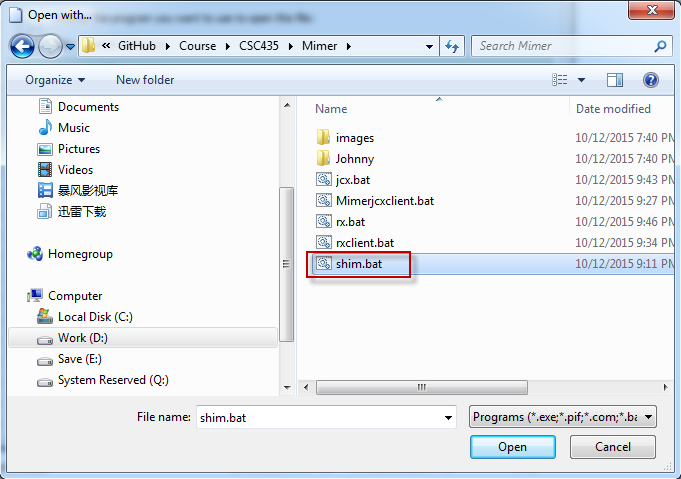
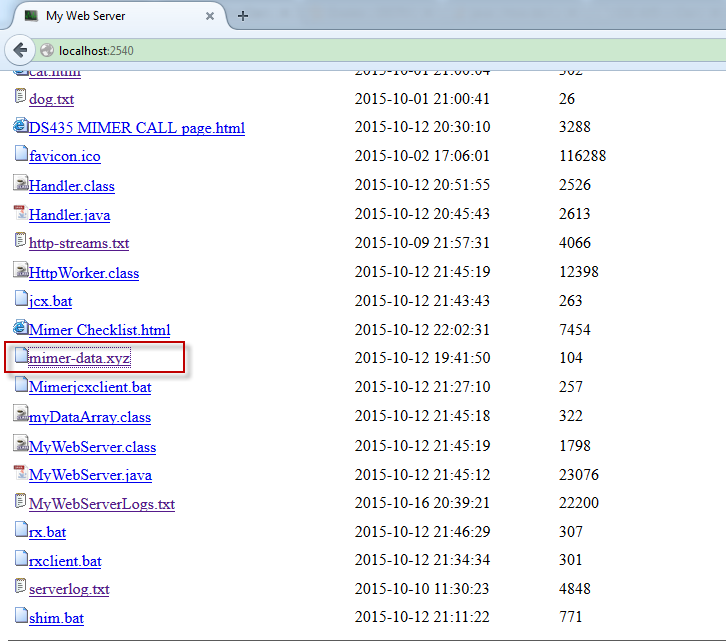


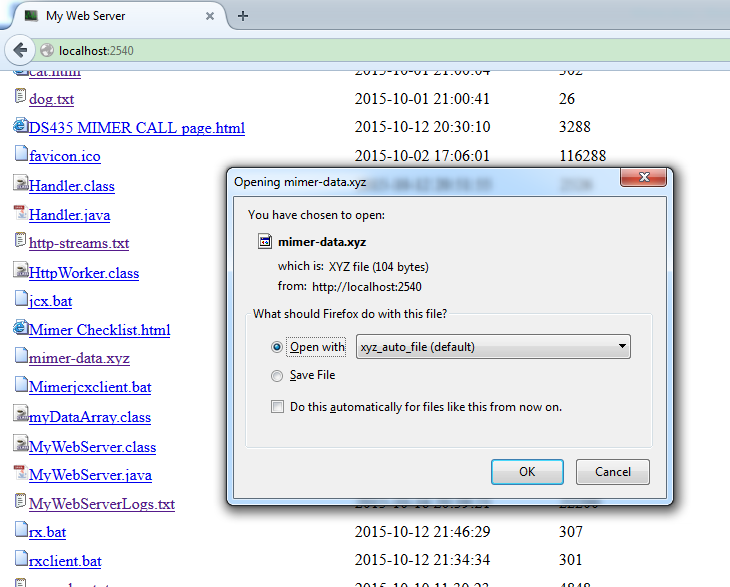
* 1. (Step1) Associating customized MIME type(.xyz) with a handler(shim.bat)
     1. Download and save shim.bat to working folder ‘D:\WorkSpace\GitHub\Course\CSC435\Mimer’.

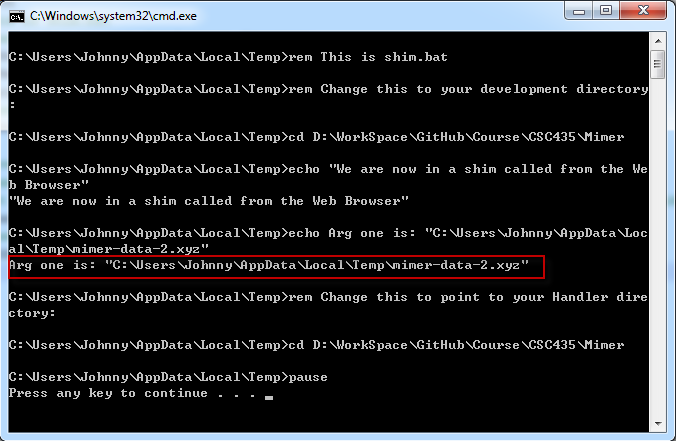


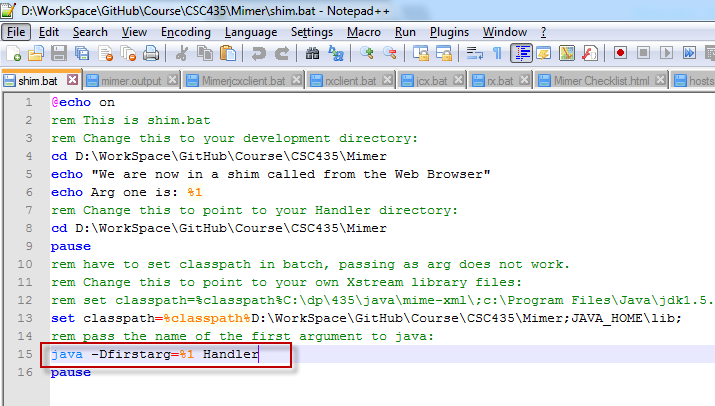
* + 1. Select file mimer-data.xyz, right click ->Open with -> Choose default program.
    2. Click ‘Browse…’ button.

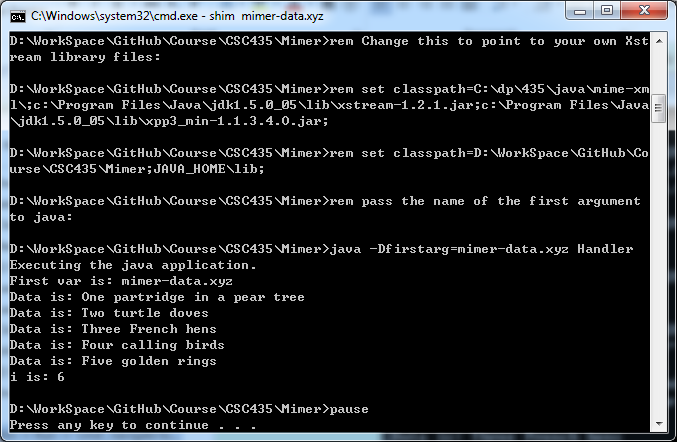


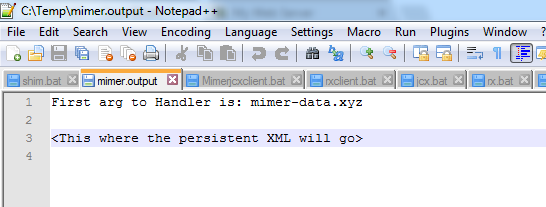
* + 1. Navigate to the folder where contains ‘shim.bat’, click ‘Open’ button.
  1. (Step1) Open a ‘.xyz’ file in browser to see whether the association works.
     1. Launch MyWebServer.
     2. Launch Firefox to access server, open file ‘mimer-data.xyz’, or directly open url ‘localhost:2540/mimer-data.xyz’
     3. Click ‘OK’ button to continue.



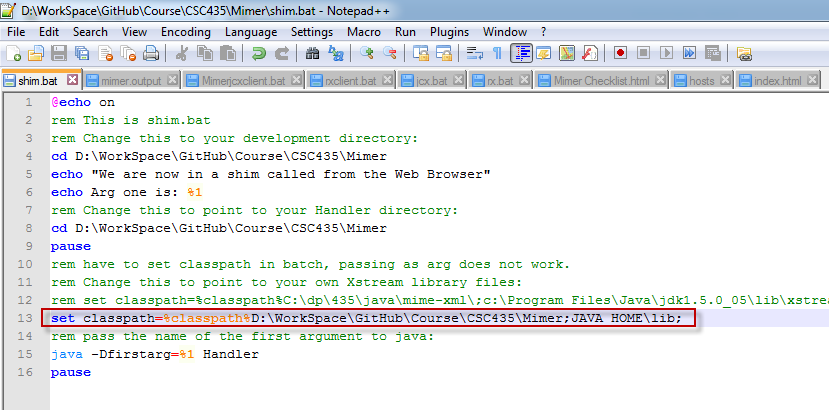
* + 1. ‘shim.bat’ is invoked, and ‘mimer-date.xyz’ is saved to temp folder by the browser automatically.
  1. (Step2) Write a Java program that reads environment variables, and call it from server, through shim.bat
     1. Uncomment(remove the "rem" remark statement from), let handler execute.



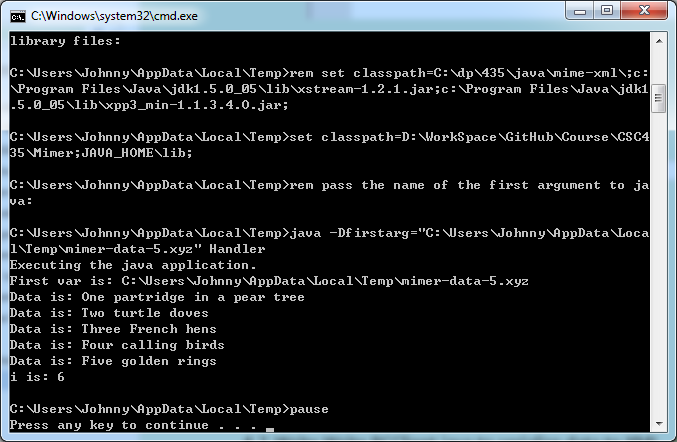
* + 1. Win -> Run -> ‘cmd’, navigate to work folder, run shim mimer-data.xyz 
    2. Open file ‘C:\Temp\mimer.output’. The file is created by Handler.



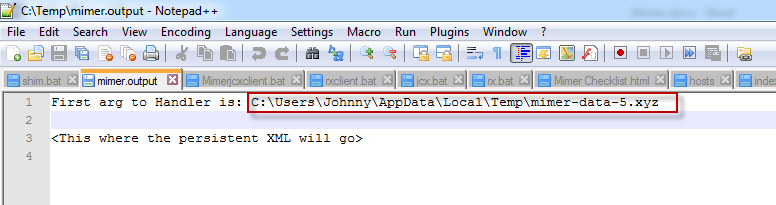
* + 1. Uncomment the line of ‘set classpath’, this ensure java to find the handler in the working folder.



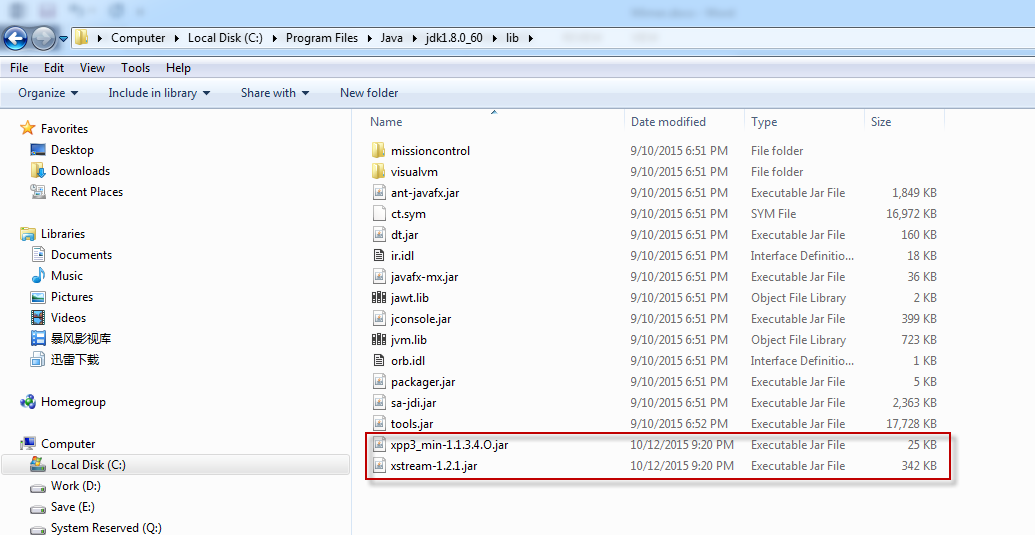
* + 1. Open url ‘localhost:2540/mimer-data.xyz’, shim.bat will be invoked, and Handler will be called.



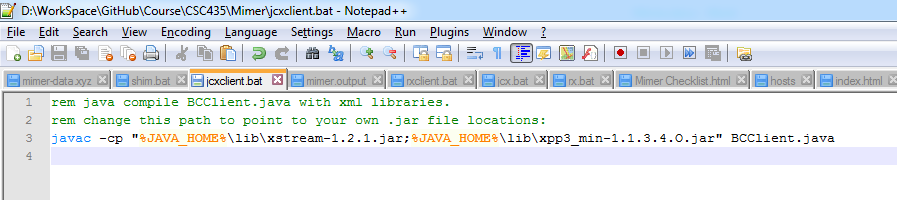
* + 1. Check output, the file is different, which is coming from the browser, the latest access file.



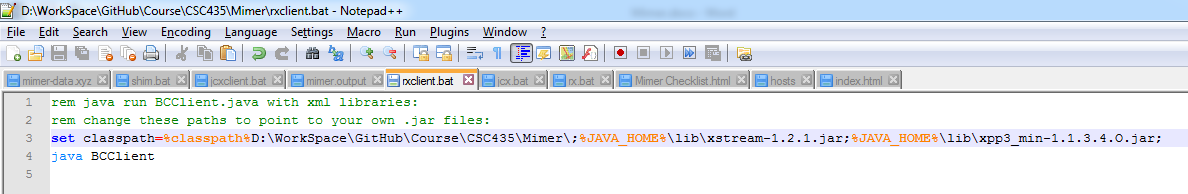
* 1. (Step3) Write BCClient.java to serialize data to XML
     1. Downloand xstream-1.2.1.jar and mimer/xpp3\_min-1.1.3.4.O.jar to JAVA\_HOME.



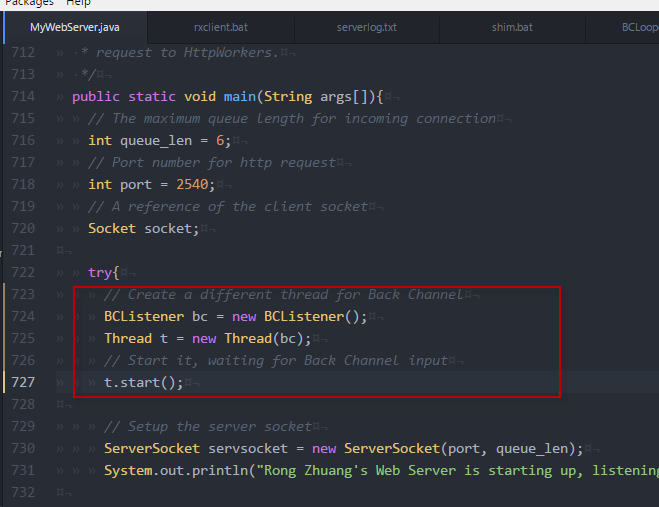
* + 1. Edit jcxclient.bat, set correct path for the above two jar file for compile BCClient.java.



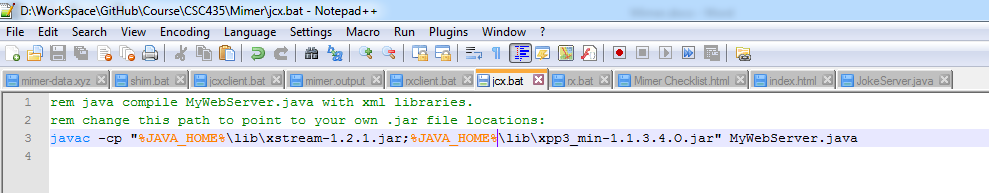
* + 1. Edit rxclient.bat, set correct path running BCClient.class.



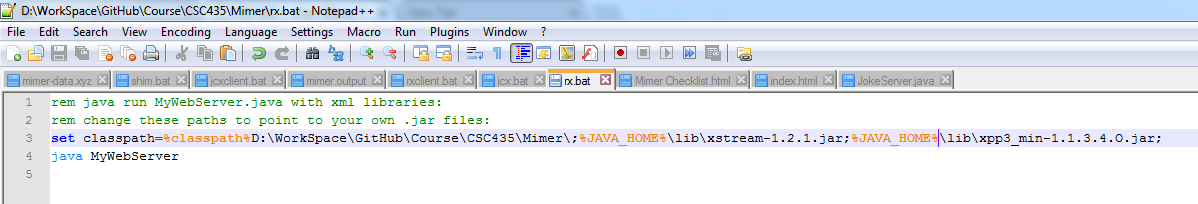
* + 1. Run jcxclient.bat, then run rxclient.bat.
  1. (Setp4) Create the BackChannel communication between your handler and server
     1. Enhance MyWebServer.java, add classes of the MyDataArray, BCWorker, BCListener. And add code snippet into main function of MyWebServer.



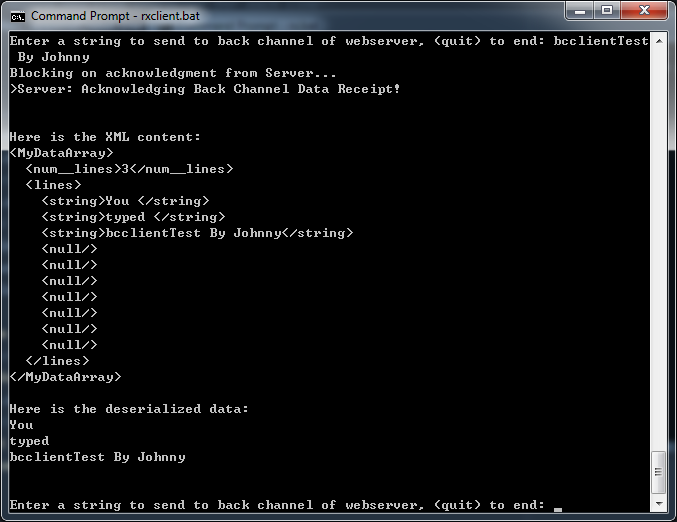
* + 1. Edit jcx.bat, set correct path for compiling MyWebServer.java.



* + 1. Edit rx.bat, set correct path for running MyWebServer.class

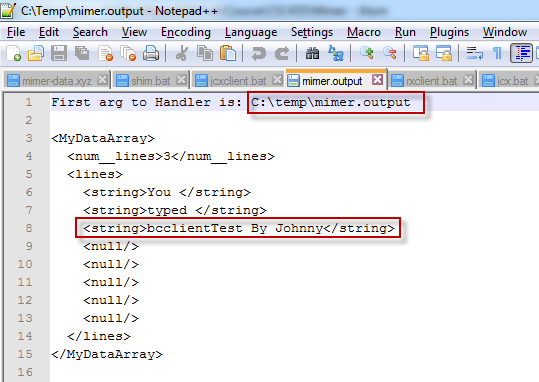


* + 1. Run jcx.bat, then run rx.bat.
    2. In BCClient, input any string, eg. ‘bcclientTest By Johnny’. BCClient will first print the content in xml format, and then print content in plain text.

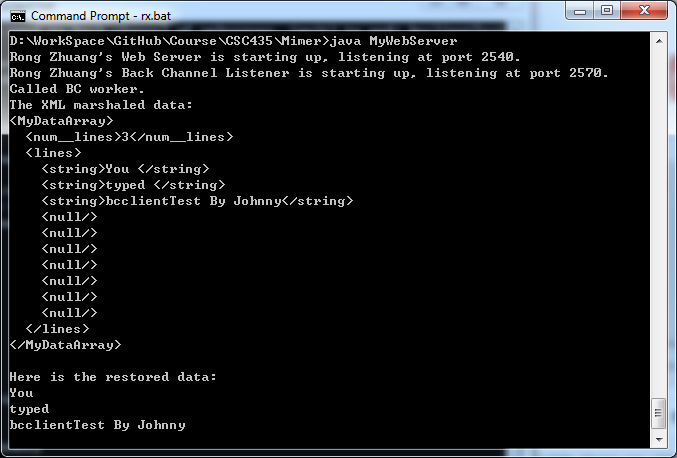


From the above screenshot, we can also see server has acknowledged that it has received data from client.

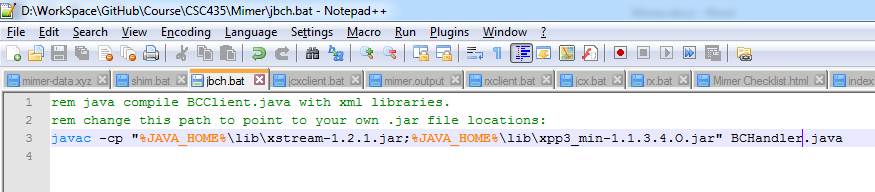
* + 1. Check whether file C:\temp\mimer.output is created, and the content is correct.



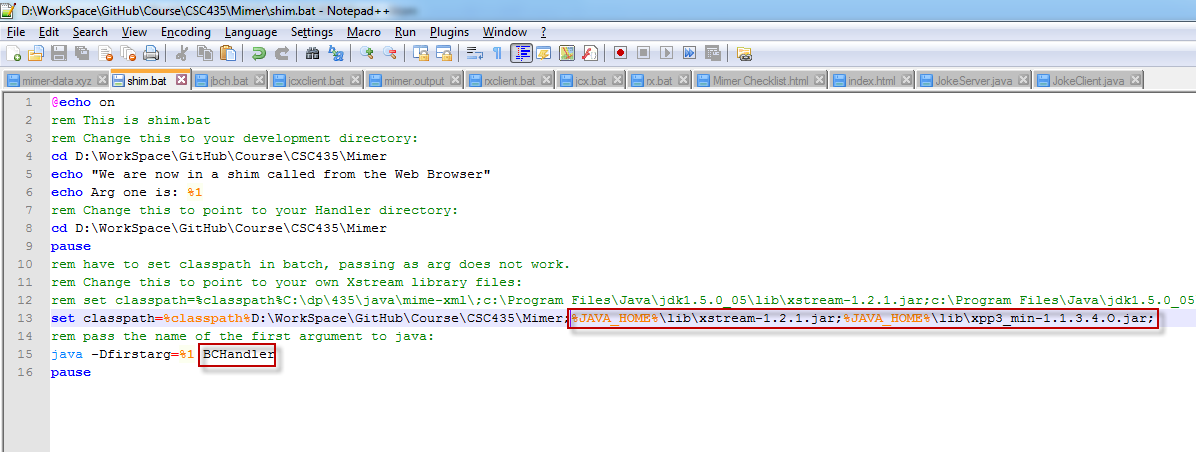
* + 1. In server side, we can see that it received the data from BCClient, and print the xml correctly. Besides, it desterilized the xml to DataArray object and printed the plain content.



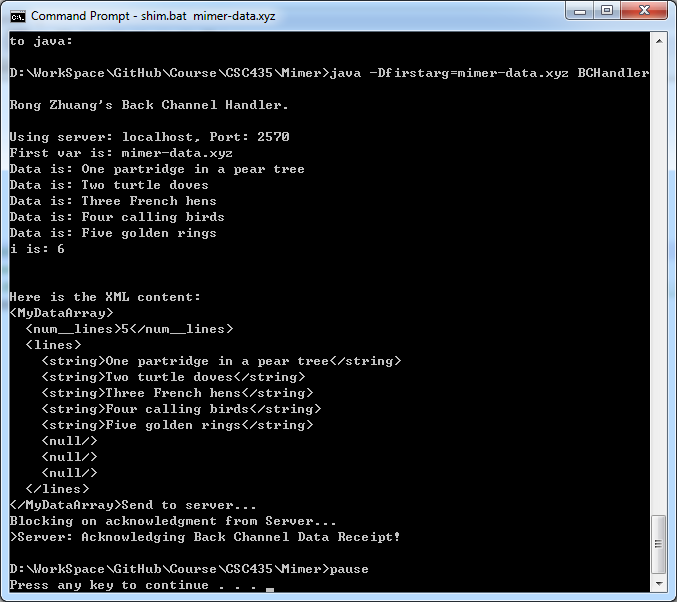
* 1. Combine your two Java programs
     1. Create BCHandler.java, let it read the environment variable to get the file path, open the file, fetch the content, serialize them to xml, send to MyWebServer at port 2570.
     2. Create jbch.bat, set path to compile BCHandler.java



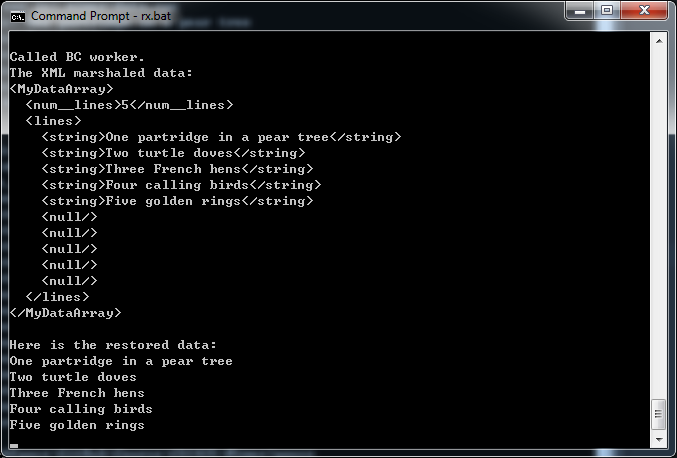
* + 1. Run jbch.bat to generate BCHandler.class.
    2. Edit shim.bat, use BCHandler to handle the xyz file. And add path for xstream.



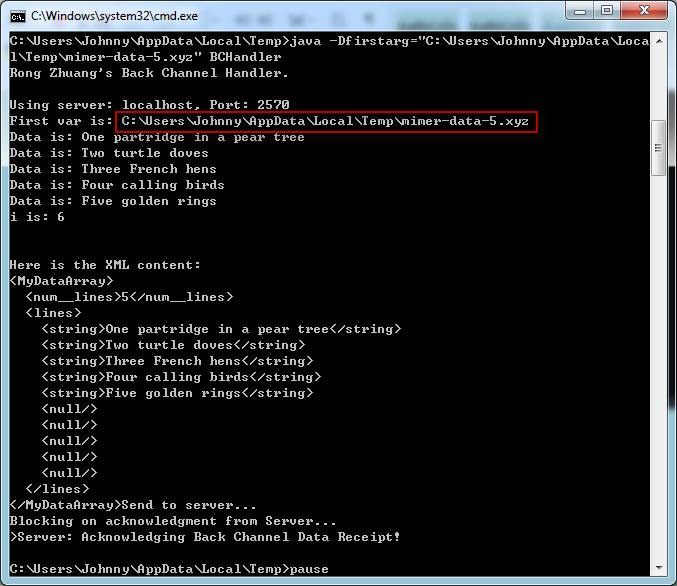
* + 1. Win->Run->cmd, navigate to working fold, run > shim.bat mimer-data.xyz. BCHandler will handle the file correctly, see the screenshot below.



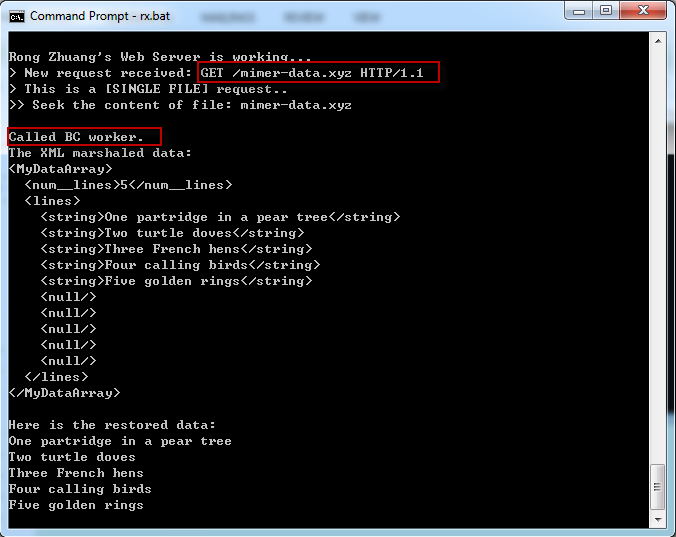
* + 1. In the server side(MyWebServer), the BCWorker is invoked and it processed the data correctly.



* + 1. In FireFox, access url <http://localhost:2540/mimer-data.xyz>
    2. The file is saved to temp file in local disk. BCHandler is invoked automatically.



* + 1. In MyWebServer, it get the http get request first. This request is from the web browser. Then it received a back channel request and the BC worker is invoked to handle it.



1. sdfs