```
3
(ThreadID:1) [2022-12-06 23:44:43.971 CSE3010Client.main():158] # Enter the key you want to write to:
Foo
(ThreadID:1) [2022-12-06 23:44:46.823 CSE3010Client.main():160] # Enter the value you want to write to the key:
Bar
(ThreadID:1) [2022-12-06 23:44:47.965 CSE3010Client.doWrite():90] <=[standalone-CSE3010Client-main]=> # server responds with ACK.
(ThreadID:1) [2022-12-06 23:44:47.965 CSE3010Client.main():166] # Write.. Done
(ThreadID:1) [2022-12-06 23:44:47.965 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] Write[100] Quit

2
(ThreadID:1) [2022-12-06 23:44:49.528 CSE3010Client.main():148] # Enter the key you want to read from:
Foo
(ThreadID:1) [2022-12-06 23:44:50.442 CSE3010Client.doRead():63] <=[standalone-CSE3010Client-main]=> # server responds with ACK.
(ThreadID:1) [2022-12-06 23:44:50.442 CSE3010Client.doRead():66] # Read value from Server: key=Foo value=Bar
(ThreadID:1) [2022-12-06 23:44:50.442 CSE3010Client.main():154] # Read.. Done
(ThreadID:1) [2022-12-06 23:44:50.442 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] Write[100] Quit
```

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Project Explorer

- Week13AssignmentSolution
  - src
    - cse3010.lab.client
      - CSE3010Client.java
    - cse3010.lab.cloudDB
      - CSE3010CloudDBServer.java
    - cse3010.lab.common
      - CSE3010ReceiverXMLRPC.java
      - CSE3010SenderXMLRPC.java
      - Message.java
      - MessageType.java
    - cse3010.lab.edgeDB
      - CSE3010EdgeDBServer.java
    - cse3010.lab.utils
      - DebugLog.java
      - ObjectSerializer.java
      - Timestamper.java
  - JRE System Library [jre]
  - Referenced Libraries
  - lib

CSE3010Clien...   CSE3010Sende...   MessageType....   CSE3010Cloud...   *CSE3010Edge...   »3

```java
31        private static int writeCount;
32        private static CSE3010SenderXMLRPC sender;
33        private String cloudDBPort = "16689";
34        private String cloudDBServerIP = "http://127.0.0.1:" + cloudDBPort + "/xmlrpc";
35        private String cloudDBSrvName = "CSE3010 Cloud DB Server";
36        private String cloudDBServerReqHandler = "CSE3010CloudDBServer.handleClientRequest";
37
38        private static HashMap<String, String> kvStore;
39
40        //2019041094 김정민
41        /**
42         * This constructor is called multiple times. On client's request, WebServer
43         * creates a CSE3010Server instance on the process of creating a
44         * separate worker to handle the request. (out of our control)
45         *
46         * Shared variable instantiation should be done in another constructor that
47         * is used for starting up the WebServer
48         *
49         * NOTE: This should not be called by code that is not WebServer
50         *
51         * @throws Exception
52         */
53        public CSE3010EdgeDBServer() throws Exception {
54            if (loggerID == null) {
55                this.loggerID = serverID + (serverNo++);
56            }
57            DebugLog.log("CSE3010EdgeDBServer constructor for each worker thread");
58        }
```

Outline

- CSE3010EdgeDBServer
  - receiver : CSE3010ReceiverXMLRP
  - port : String
  - loggerID : String
  - serverID : String
  - serverNo : int
  - clientCnt : int
  - clientDevices : ArrayList<String>
  - readCount : int
  - writeCount : int
  - sender : CSE3010SenderXMLRPC
  - cloudDBPort : String
  - cloudDBServerIP : String
  - cloudDBSrvName : String
  - cloudDBServerReqHandler : String
  - kvStore : HashMap<String, String>
  - CSE3010EdgeDBServer()
  - CSE3010EdgeDBServer(String)
  - runServer() : void
  - stopServer() : void
  - handleClientRequest(byte[]) : Obj
  - getUniqueCID() : String
  - handleRegisterClient(Message) : C
  - isRegistered(String) : boolean

Markers   Properties   Servers   Data Source Explorer   Snippets   Terminal   Console   Coverage

CSE3010EdgeDBServer (1) [Java Application] C:\Users\김정민\Downloads\eclipse-jee-2022-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038

```
enter the port number for the Edge DB Server:
17000
port number for this Edge DB server=17000
(ThreadID:1) [2022-12-06 23:29:02.160 CSE3010EdgeDBServer.<init>():74] # cloudDBServer IP=http://127.0.0.1:16689/xmlrpc
(ThreadID:1) [2022-12-06 23:29:02.242 CSE3010ReceiverXMLRPC.<init>():41] <=[CSE3010ReceiverXMLRPC]=> # Started successfully.
(ThreadID:1) [2022-12-06 23:29:02.242 CSE3010ReceiverXMLRPC.<init>():42] <=[CSE3010ReceiverXMLRPC]=> # Accepting requests. (Halt program t
```

Writable   Smart Insert   40 : 21 : 1256

PostgreSQLJDBC - Week13AssignmentSolution/src/cse3010/lab/edgeDB/CSE3010EdgeDBServer.java - Eclipse IDE

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Project Explorer

Week13AssignmentSolution
  src
    cse3010.lab.client
      CSE3010Client.java
    cse3010.lab.cloudDB
      CSE3010CloudDBServer.java
    cse3010.lab.common
      CSE3010ReceiverXMLRPC.java
      CSE3010SenderXMLRPC.java
      Message.java
      MessageType.java
    cse3010.lab.edgeDB
      CSE3010EdgeDBServer.java
    cse3010.lab.utils
      DebugLog.java
      ObjectSerializer.java
      Timestamper.java
  JRE System Library [jre]
  Referenced Libraries
  lib

CSE3010Clien...   CSE3010Sende...   MessageType....   CSE3010Cloud...   CSE3010Edge...

```java
31      private static int writeCount;
32      private static CSE3010SenderXMLRPC sender;
33      private String cloudDBPort = "16689";
34      private String cloudDBServerIP = "http://127.0.0.1:" + cloudDBPort + "/xmlrpc";
35      private String cloudDBSrvName = "CSE3010 Cloud DB Server";
36      private String cloudDBServerReqHandler = "CSE3010CloudDBServer.handleClientRequest";
37
38      private static HashMap<String, String> kvStore;
39
40      //2019041094 김정민
41      /**
42       * This constructor is called multiple times. On client's request, WebServer
43       * creates a CSE3010Server instance on the process of creating a
44       * separate worker to handle the request. (out of our control)
45       *
46       * Shared variable instantiation should be done in another constructor that
47       * is used for starting up the WebServer
48       *
49       * NOTE: This should not be called by code that is not WebServer
50       *
51       * @throws Exception
52       */
53      public CSE3010EdgeDBServer() throws Exception {
54          if (loggerID == null) {
55              this.loggerID = serverID + (serverNo++);
56          }
57          DebugLog.log("CSE3010EdgeDBServer constructor for each worker thread");
58      }
```

Outline

CSE3010EdgeDBServer
  receiver : CSE3010ReceiverXMLRP
  port : String
  loggerID : String
  serverID : String
  serverNo : int
  clientCnt : int
  clientDevices : ArrayList<String>
  readCount : int
  writeCount : int
  sender : CSE3010SenderXMLRPC
  cloudDBPort : String
  cloudDBServerIP : String
  cloudDBSrvName : String
  cloudDBServerReqHandler : String
  kvStore : HashMap<String, String>
  CSE3010EdgeDBServer()
  CSE3010EdgeDBServer(String)
  runServer() : void
  stopServer() : void
  handleClientRequest(byte[]) : Obje
  getUniqueCID() : String
  handleRegisterClient(Message) : C
  isRegistered(String) : boolean

Markers   Properties   Servers   Data Source Explorer   Snippets   Terminal   Console   Coverage

CSE3010EdgeDBServer (1) [Java Application] C:\Users\김정민\Downloads\eclipse-jee-2022-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038
enter the port number for the Edge DB Server:
18000
port number for this Edge DB server=18000
(ThreadID:1) [2022-12-06 23:30:53.224 CSE3010EdgeDBServer.<init>():74] # cloudDBServer IP=http://127.0.0.1:16689/xmlrpc
(ThreadID:1) [2022-12-06 23:30:53.307 CSE3010ReceiverXMLRPC.<init>():41] <=[CSE3010ReceiverXMLRPC]=> # Started successfully.
(ThreadID:1) [2022-12-06 23:30:53.307 CSE3010ReceiverXMLRPC.<init>():42] <=[CSE3010ReceiverXMLRPC]=> # Accepting requests. (Halt program t

-5°C
대체로 맑음

오후 11:30
2022-12-06

File   Edit   Source   Refactor   Navigate   Search   Project   Run   Window   Help

Project Explorer

- Week13AssignmentSolution
  - src
    - cse3010.lab.client
      - CSE3010Client.java
    - cse3010.lab.cloudDB
      - CSE3010CloudDBServer.java
    - cse3010.lab.common
      - CSE3010ReceiverXMLRPC.java
      - CSE3010SenderXMLRPC.java
      - Message.java
      - MessageType.java
    - cse3010.lab.edgeDB
      - CSE3010EdgeDBServer.java
    - cse3010.lab.utils
      - DebugLog.java
      - ObjectSerializer.java
      - Timestamper.java
  - JRE System Library [jre]
  - Referenced Libraries
  - lib

CSE3010Clien...   CSE3010Sende...   MessageType....   CSE3010Cloud...   CSE3010Edge...

```java
1   package cse3010.lab.client;
2
3   import java.io.BufferedReader;
4   import java.io.IOException;
5   import java.io.InputStreamReader;
6
7   import cse3010.lab.common.CSE3010SenderXMLRPC;
8   import cse3010.lab.common.Message;
9   import cse3010.lab.common.MessageType;
10  import cse3010.lab.utils.DebugLog;
11
12  public class CSE3010Client {
13
14      private static String port = "16679";
15      private String srvip = "http://127.0.0.1:" + port + "/xmlrpc";
16      private String srvName = "CSE3010 Edge DB Server";
17      private String reqHandler = "CSE3010EdgeDBServer.handleClientRequest";
18
19
20      private CSE3010SenderXMLRPC sender;
21
22      public String loggerID = "CSE3010Client";
23      public String clientID;
24      private volatile boolean finishFlag;
25
26      public CSE3010Client() throws Exception {
27          DebugLog.log("srvip=" + srvip);
28          sender = new CSE3010SenderXMLRPC(srvip, srvName, reqHandler);
```

Outline

- cse3010.lab.client
  - CSE3010Client
    - port : String
    - srvip : String
    - srvName : String
    - reqHandler : String
    - sender : CSE3010SenderXMLRPC
    - loggerID : String
    - clientID : String
    - finishFlag : boolean
    - CSE3010Client()
    - doRegister() : void
    - doRead(String) : void
    - doWrite(String, String) : void
    - printMainMenu() : void
    - main(String[]) : void

Markers   Properties   Servers   Data Source Explorer   Snippets   Terminal   Console   Coverage

CSE3010Client (2) [Java Application] C:\Users\김정민\Downloads\eclipse-jee-2022-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin
enter the port number for this client's Edge DB Server:
17000
port number for this client's Edge DB server=17000
(ThreadID:1) [2022-12-06 23:31:31.103 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] W

(ThreadID:1) [2022-12-06 23:31:31.104 CSE3010Client.<init>():27] # srvip=http://127.0.0.1:17000/xmlrpc

-5°C
대체로 맑음

오후 11:31
2022-12-06

File Edit Source Refactor Navigate Search Project Run Window Help

```java
package cse3010.lab.client;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

import cse3010.lab.common.CSE3010SenderXMLRPC;
import cse3010.lab.common.Message;
import cse3010.lab.common.MessageType;
import cse3010.lab.utils.DebugLog;
//2019041094 김정민
public class CSE3010Client {

    private static String port = "16679";
    private String srvip = "http://127.0.0.1:" + port + "/xmlrpc";
```

Outline

cse3010.lab.client
CSE3010Client
  port : String
  srvip : String
  srvName : String
  reqHandler : String
  sender : CSE3010SenderXMLRPC
  loggerID : String
  clientID : String
  finishFlag : boolean
  CSE3010Client()
  doRegister() : void
  doRead(String) : void
  doWrite(String, String) : void

Markers Properties Servers Data Source Explorer Snippets Terminal Console Coverage

CSE3010EdgeDBServer (1) [Java Application] C:\Users\김정민\Downloads\eclipse-jee-2022-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (2022. 12.

```
enter the port number for the Edge DB Server:
17000
port number for this Edge DB server=17000
(ThreadID:1) [2022-12-06 23:29:02.160 CSE3010EdgeDBServer.<init>():74] # cloudDBServer IP=http://127.0.0.1:16689/xmlrpc
(ThreadID:1) [2022-12-06 23:29:02.242 CSE3010ReceiverXMLRPC.<init>():41] <=[CSE3010ReceiverXMLRPC]=> Started successfully.
(ThreadID:1) [2022-12-06 23:29:02.242 CSE3010ReceiverXMLRPC.<init>():42] <=[CSE3010ReceiverXMLRPC]=> Accepting requests. (Halt program to stop.)
(ThreadID:26) [2022-12-06 23:32:55.567 CSE3010EdgeDBServer.<init>():57] # CSE3010EdgeDBServer constructor for each worker thread
(ThreadID:26) [2022-12-06 23:32:55.577 CSE3010EdgeDBServer.handleClientRequest():96] <=[CSE3010Server]=> # Server has received request for handleClientRequest
(ThreadID:26) [2022-12-06 23:32:55.577 CSE3010EdgeDBServer.handleClientRequest():108] <=[CSE3010Server]=> # Register Client Request
(ThreadID:26) [2022-12-06 23:32:55.636 CSE3010EdgeDBServer.handleClientRequest():143] <=[CSE3010Server]=> # Server is responding to a client request
(ThreadID:26) [2022-12-06 23:33:08.654 CSE3010EdgeDBServer.<init>():57] # CSE3010EdgeDBServer constructor for each worker thread
(ThreadID:26) [2022-12-06 23:33:08.654 CSE3010EdgeDBServer.handleClientRequest():96] <=[CSE3010Server]=> # Server has received request for handleClientRequest
(ThreadID:26) [2022-12-06 23:33:08.655 CSE3010EdgeDBServer.handleClientRequest():130] <=[CSE3010Server]=> # Write Request
(ThreadID:26) [2022-12-06 23:33:08.655 CSE3010EdgeDBServer.handleClientRequest():143] <=[CSE3010Server]=> # Server is responding to a client request
(ThreadID:26) [2022-12-06 23:33:14.443 CSE3010EdgeDBServer.<init>():57] # CSE3010EdgeDBServer constructor for each worker thread
(ThreadID:26) [2022-12-06 23:33:14.443 CSE3010EdgeDBServer.handleClientRequest():96] <=[CSE3010Server]=> # Server has received request for handleClientRequest
(ThreadID:26) [2022-12-06 23:33:14.443 CSE3010EdgeDBServer.handleClientRequest():130] <=[CSE3010Server]=> # Write Request
(ThreadID:26) [2022-12-06 23:33:14.444 CSE3010EdgeDBServer.handleClientRequest():143] <=[CSE3010Server]=> # Server is responding to a client request
(ThreadID:26) [2022-12-06 23:33:19.742 CSE3010EdgeDBServer.<init>():57] # CSE3010EdgeDBServer constructor for each worker thread
(ThreadID:26) [2022-12-06 23:33:19.742 CSE3010EdgeDBServer.handleClientRequest():96] <=[CSE3010Server]=> # Server has received request for handleClientRequest
(ThreadID:26) [2022-12-06 23:33:19.742 CSE3010EdgeDBServer.handleClientRequest():130] <=[CSE3010Server]=> # Write Request
has key to upload!
(ThreadID:26) [2022-12-06 23:33:19.759 CSE3010EdgeDBServer.handleWriteRequest():243] <=[CSE3010Server]=> # server responds with ACK.
(ThreadID:26) [2022-12-06 23:33:19.760 CSE3010EdgeDBServer.handleClientRequest():143] <=[CSE3010Server]=> # Server is responding to a client request
```

Writable   Smart Insert   11 : 17 : 305

-5°C
대체로 맑음

오후 11:34
2022-12-06

File Edit Source Refactor Navigate Search Project Run Window Help

```java
package cse3010.lab.client;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

import cse3010.lab.common.CSE3010SenderXMLRPC;
import cse3010.lab.common.Message;
import cse3010.lab.common.MessageType;
import cse3010.lab.utils.DebugLog;
//2019041094 김정민
public class CSE3010Client {

    private static String port = "16679";
    private String srvip = "http://127.0.0.1:" + port + "/xmlrpc";
```

Outline

- cse3010.lab.client
- CSE3010Client
  - port : String
  - srvip : String
  - srvName : String
  - reqHandler : String
  - sender : CSE3010SenderXMLRPC
  - loggerID : String
  - clientID : String
  - finishFlag : boolean
  - CSE3010Client()
  - doRegister() : void
  - doRead(String) : void
  - doWrite(String, String) : void

Markers Properties Servers Data Source Explorer Snippets Terminal Console Coverage

CSE3010Client (2) [Java Application] C:\Users\김정민\Downloads\eclipse-jee-2022-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.4.v20220903-1038\jre\bin\javaw.exe (2022. 12. 6. 오후

```
(ThreadID:1) [2022-12-06 23:34:39.864 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] Write[100] Quit

2
(ThreadID:1) [2022-12-06 23:34:49.410 CSE3010Client.main():148] # Enter the key you want to read from:
Hello
(ThreadID:1) [2022-12-06 23:34:53.301 CSE3010Client.doRead():70] <=[standalone-CSE3010Client-main]=> # Server NACK: Key may not exist yet.. Create it first.
(ThreadID:1) [2022-12-06 23:34:53.301 CSE3010Client.main():154] # Read.. Done
(ThreadID:1) [2022-12-06 23:34:53.301 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] Write[100] Quit

2
(ThreadID:1) [2022-12-06 23:35:04.633 CSE3010Client.main():148] # Enter the key you want to read from:
Hello
(ThreadID:1) [2022-12-06 23:35:05.825 CSE3010Client.doRead():70] <=[standalone-CSE3010Client-main]=> # Server NACK: Key may not exist yet.. Create it first.
(ThreadID:1) [2022-12-06 23:35:05.826 CSE3010Client.main():154] # Read.. Done
(ThreadID:1) [2022-12-06 23:35:05.826 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] Write[100] Quit

2
(ThreadID:1) [2022-12-06 23:35:27.584 CSE3010Client.main():148] # Enter the key you want to read from:
Hello
(ThreadID:1) [2022-12-06 23:35:29.835 CSE3010Client.doRead():63] <=[standalone-CSE3010Client-main]=> # server responds with ACK.
(ThreadID:1) [2022-12-06 23:35:29.835 CSE3010Client.doRead():66] # Read value from Server: key=Hello value=World 3
(ThreadID:1) [2022-12-06 23:35:29.835 CSE3010Client.main():154] # Read.. Done
(ThreadID:1) [2022-12-06 23:35:29.836 CSE3010Client.printMainMenu():104] # <main> What do you want to do? [1] Register Client[2] Read[3] Write[100] Quit
```

-5°C
대체로 맑음
2022-12-06

오후 11:35
2022-12-06