

P2P Gossip System

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Hierarchy For All Packages

Package Hierarchies:

- [edu.cse4232.gossip.asn1](#),
- [edu.cse4232.gossip.client](#),
- [edu.cse4232.gossip.context](#),
- [edu.cse4232.gossip.server](#)

Class Hierarchy

- java.lang.Object
 - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◇ net.ddp2p.ASN1.ASNObj
 - edu.cse4232.gossip.asn1.[Gossip](#)
 - edu.cse4232.gossip.asn1.[Leave](#)
 - edu.cse4232.gossip.asn1.[Peer](#)
 - edu.cse4232.gossip.asn1.[PeersAnswer](#)
 - edu.cse4232.gossip.asn1.[PeersQuery](#)
 - ◆ edu.cse4232.gossip.context.[Broadcaster](#)
 - ◆ edu.cse4232.gossip.client.[Client](#) (implements java.lang.Runnable)
 - ◆ edu.cse4232.gossip.context.[Context](#)
 - ◆ edu.cse4232.gossip.context.[ContextBuilder](#)
 - ◆ edu.cse4232.gossip.context.[DataBaseHandler](#) (implements java.lang.AutoCloseable)
 - ◆ edu.cse4232.gossip.client.[GossipClient](#)
 - ◇ edu.cse4232.gossip.client.[TCPClient](#)
 - ◇ edu.cse4232.gossip.client.[UDPClient](#)
 - ◆ edu.cse4232.gossip.client.[GossipClientFactory](#)
 - ◆ edu.cse4232.gossip.context.[Logger](#) (implements java.lang.AutoCloseable)
 - ◆ edu.cse4232.gossip.server.[PeerWitness](#)
 - ◆ edu.cse4232.gossip.server.[Responder](#) (implements java.io.Closeable, java.lang.Runnable)
 - ◇ edu.cse4232.gossip.server.[TCPResponder](#)
 - ◇ edu.cse4232.gossip.server.[UDPResponder](#)
 - ◆ edu.cse4232.gossip.server.[Server](#) (implements java.lang.Runnable)
 - ◆ java.lang.Throwable (implements java.io.Serializable)
 - ◇ java.lang.Exception
 - edu.cse4232.gossip.context.[ContextException](#)

All Classes

- Broadcaster
- Client
- Context
- ContextBuilder
- ContextException
- DataBaseHandler
- Gossip
- GossipClient
- GossipClientFactory
- Leave
- Logger
- Peer
- PeersAnswer
- PeersQuery
- PeerWitness
- Responder
- Server
- TCPClient
- TCPResponder
- UDPClient
- UDPResponder

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Package edu.cse4232.gossip.asn1

ASN1 Encoding Objects

See: [Description](#)

-

Class	Description
<u>Gossip</u>	[APPLICATION 1] EXPLICIT SEQUENCE {sha256hash OCTET STRING, timestamp GeneralizedTime, message UTF8String}
<u>Leave</u>	[APPLICATION 4] EXPLICIT SEQUENCE {name UTF8String}
<u>Peer</u>	[APPLICATION 2] IMPLICIT SEQUENCE {name UTF8String, port INTEGER, ip PrintableString}
<u>PeersAnswer</u>	[1] EXPLICIT SEQUENCE OF Peer
<u>PeersQuery</u>	[APPLICATION 3] IMPLICIT NULL

Package edu.cse4232.gossip.asn1 Description

ASN1 Encoding Objects

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Hierarchy For Package edu.cse4232.gossip.asn1

Package Hierarchies:

- All Packages

Class Hierarchy

- java.lang.Object
 - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◇ net.ddp2p.ASN1.ASNObj
 - edu.cse4232.gossip.asn1.Gossip
 - edu.cse4232.gossip.asn1.Leave
 - edu.cse4232.gossip.asn1.Peer
 - edu.cse4232.gossip.asn1.PeersAnswer
 - edu.cse4232.gossip.asn1.PeersQuery

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edu.cse4232.gossip.asn1

Class Gossip

- java.lang.Object
- - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◆
 - ◆ net.ddp2p.ASN1.ASNObj
 - ◆
 - edu.cse4232.gossip.asn1.Gossip

```
public class
extends net.ddp2p.ASN1.ASNObj
```

[APPLICATION 1] EXPLICIT SEQUENCE {sha256hash OCTET STRING, timestamp GeneralizedTime, message UTF8String}

Field Summary

Modifier and Type	Field and Description
private static java.text.SimpleDateFormat	<u>formatter</u>
private java.lang.String	<u>message</u>
private byte[]	<u>sha256hash</u>
static byte	<u>TAG</u>
private java.util.Calendar	<u>timestamp</u>

◆

Fields inherited from class net.ddp2p.ASN1.ASNObj

DEPENDANTS_ALL, DEPENDANTS_NONE

Constructor Summary

Constructor and Description

[Gossip\(\)](#)

[Gossip](#)(byte[] sha256hash, java.util.Calendar timestamp, java.lang.String message)

Method Summary

P2P Gossip System

Modifier and Type	Method and Description
java.lang.Object	<u>decode</u> (net.ddp2p.ASN1.Decoder decoder)
net.ddp2p.ASN1.Encoder	<u>getEncoder</u> ()
java.lang.String	<u>getMessage</u> ()
java.lang.String	<u>getSha256hash</u> ()
java.lang.String	<u>getTimestamp</u> ()
static java.lang.String	<u>timestampToString</u> (java.util.Calendar timestamp) Utility Function for Timestamp Display
java.lang.String	<u>toString</u> ()

◇

Methods inherited from class net.ddp2p.ASN1.ASNObj

instance

◇

Methods inherited from class net.ddp2p.ASN1.ASNObjArrayable

encode, getEncoder, getEncoder

◇

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

•

◆

Field Detail

◇ formatter

private static final java.text.SimpleDateFormat formatter

◇ message

private java.lang.String message

◇ sha256hash

private byte[] sha256hash

◇ TAG

public static final byte TAG

◇ timestamp

private java.util.Calendar timestamp

◆

Constructor Detail

P2P Gossip System

◇ Gossip

```
public Gossip()
```

◇ Gossip

```
public Gossip(byte[] sha256hash,  
              java.util.Calendar timestamp,  
              java.lang.String message)
```



Method Detail

◇ decode

```
public java.lang.Object decode(net.ddp2p.ASN1.Decoder decoder)  
    throws net.ddp2p.ASN1.ASN1DecoderFail
```

Specified by:

decode in class net.ddp2p.ASN1.ASNObjArrayable

Parameters:

decoder -

Returns:

Gossip Object

Throws:

net.ddp2p.ASN1.ASN1DecoderFail

◇ getEncoder

```
public net.ddp2p.ASN1.Encoder getEncoder()
```

Specified by:

getEncoder in class net.ddp2p.ASN1.ASNObjArrayable

Returns:

Gossip Encoder

◇ getMessage

```
public java.lang.String getMessage()
```

◇ getSha256hash

```
public java.lang.String getSha256hash()
```

◇ getTimestamp

```
public java.lang.String getTimestamp()
```

◇ timestampToString

```
public static java.lang.String timestampToString(java.util.Calendar timestamp)
```

Utility Function for Timestamp Display

Parameters:

timestamp -

Returns:

Formatted String

P2P Gossip System

◇ toString

```
public java.lang.String toString()
```

Overrides:

toString in class java.lang.Object

Returns:

GOSSIP:mBHL7lKilvdcOFKR03ASvBNX//ypQkTRUvilYmB1/OY=:2017-01-09-16-18-20
eats Jerry%

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edu.cse4232.gossip.asn1

Class Peer

- java.lang.Object
- - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◆
 - ◆ net.ddp2p.ASN1.ASNObj
 - ◆
 - edu.cse4232.gossip.asn1.Peer

```
public class
extends net.ddp2p.ASN1.ASNObj
```

[APPLICATION 2] IMPLICIT SEQUENCE {name UTF8String, port INTEGER, ip PrintableString}

Field Summary

Modifier and Type	Field and Description
private java.lang.String	<u>ip</u>
private java.lang.String	<u>name</u>
private int	<u>port</u>
static byte	<u>TAG</u>

◆

Fields inherited from class net.ddp2p.ASN1.ASNObj

DEPENDANTS_ALL, DEPENDANTS_NONE

Constructor Summary

Constructor and Description

Peer()

Peer(java.lang.String name, int port, java.lang.String ip)

Method Summary

Modifier and Type	Method and Description
java.lang.Object	<u>decode</u> (net.ddp2p.ASN1.Decoder decoder)

P2P Gossip System

```
net.ddp2p.ASN1.Encoder getEncoder()
java.lang.String       getIp()
java.lang.String       getName()
int                    getPort()
net.ddp2p.ASN1.ASNObj  instance()
                        Used for creating sequences of type Peer
java.lang.String       toFancyString()
                        Used for Client GUI
java.lang.String       toString()
```

◇

Methods inherited from class net.ddp2p.ASN1.ASNObjArrayable

```
encode, getEncoder, getEncoder
```

◇

Methods inherited from class java.lang.Object

```
clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait,
wait, wait
```

• ◇

Field Detail

◇ **ip**

```
private java.lang.String ip
```

◇ **name**

```
private java.lang.String name
```

◇ **port**

```
private int port
```

◇ **TAG**

```
public static final byte TAG
```

◇

Constructor Detail

◇ **Peer**

```
public Peer()
```

◇ **Peer**

```
public Peer(java.lang.String name,
            int port,
            java.lang.String ip)
```

Method Detail

◊ **decode**

```
public java.lang.Object decode(net.ddp2p.ASN1.Decoder decoder)
    throws net.ddp2p.ASN1.ASN1DecoderFail
```

Specified by:

decode in class net.ddp2p.ASN1.ASNObjArrayable

Parameters:

decoder -

Returns:

Peer Object

Throws:

net.ddp2p.ASN1.ASN1DecoderFail

◊ **getEncoder**

```
public net.ddp2p.ASN1.Encoder getEncoder()
```

Specified by:

getEncoder in class net.ddp2p.ASN1.ASNObjArrayable

Returns:

Peer Encoder

◊ **getIp**

```
public java.lang.String getIp()
```

◊ **getName**

```
public java.lang.String getName()
```

◊ **getPort**

```
public int getPort()
```

◊ **instance**

```
public net.ddp2p.ASN1.ASNObj instance()
    throws java.lang.CloneNotSupportedException
```

Used for creating sequences of type Peer

Overrides:

instance in class net.ddp2p.ASN1.ASNObj

Returns:

new Peer Object

Throws:

java.lang.CloneNotSupportedException

◊ **toFancyString**

```
public java.lang.String toFancyString()
```

Used for Client GUI

Returns:

P2P Gossip System

◆ Peer List formatted String

◆ **toString**

```
public java.lang.String toString()
```

Overrides:

`toString` in class `java.lang.Object`

Returns:

PEER:John:PORT=2356:IP=163.118.239.68%

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edu.cse4232.gossip.asn1

Class PeersQuery

- java.lang.Object
- - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◆
 - ◇ net.ddp2p.ASN1.ASNObj
 - ◇
 - edu.cse4232.gossip.asn1.PeersQuery

```
public class
extends net.ddp2p.ASN1.ASNObj
```

[APPLICATION 3] IMPLICIT NULL

- - ◆ **Field Summary**

Modifier and Type Field and Description

```
static byte        TAG
    ◇
```

Fields inherited from class net.ddp2p.ASN1.ASNObj

```
DEPENDANTS_ALL, DEPENDANTS_NONE
```

- ◆ **Constructor Summary**

Constructor and Description

```
PeersQuery()
```

- ◆ **Method Summary**

Modifier and Type

Method and Description

```
java.lang.Object        decode(net.ddp2p.ASN1.Decoder decoder)
net.ddp2p.ASN1.Encoder getEncoder()
java.lang.String        toString()
```

◇ **Methods inherited from class net.ddp2p.ASN1.ASNObj**

instance

◇

Methods inherited from class net.ddp2p.ASN1.ASNObjArrayable

encode, getEncoder, getEncoder

◇

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

•

◆

Field Detail

◇ **TAG**

public static final byte TAG

◆

Constructor Detail

◇ **PeersQuery**

public PeersQuery()

◆

Method Detail

◇ **decode**

```
public java.lang.Object decode(net.ddp2p.ASN1.Decoder decoder)
    throws net.ddp2p.ASN1.ASN1DecoderFail
```

Specified by:

decode in class net.ddp2p.ASN1.ASNObjArrayable

Parameters:

decoder -

Returns:

PeersQuery Object

Throws:

net.ddp2p.ASN1.ASN1DecoderFail

◇ **getEncoder**

```
public net.ddp2p.ASN1.Encoder getEncoder()
```

Specified by:

getEncoder in class net.ddp2p.ASN1.ASNObjArrayable

P2P Gossip System

Returns:

PeersQuery Encoder

◇ **toString**

```
public java.lang.String toString()
```

Overrides:

toString in class java.lang.Object

Returns:

PEERS?\n

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edu.cse4232.gossip.asn1

Class PeersAnswer

- java.lang.Object
- - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◆
 - ◇ net.ddp2p.ASN1.ASNObj
 - ◇
 - edu.cse4232.gossip.asn1.PeersAnswer

```
public class
extends net.ddp2p.ASN1.ASNObj
```

[1] EXPLICIT SEQUENCE OF Peer

- - ◆ **Field Summary**

Modifier and Type	Field and Description
-------------------	-----------------------

private <u>Peer</u> []	<u>peers</u>
------------------------	--------------

private static byte	<u>TAG</u>
---------------------	------------

◇

Fields inherited from class net.ddp2p.ASN1.ASNObj

DEPENDANTS_ALL, DEPENDANTS_NONE

- ◆ **Constructor Summary**

Constructor and Description

<u>PeersAnswer</u> ()

<u>PeersAnswer</u> (<u>Peer</u> [] peers)
--

- ◆ **Method Summary**

Modifier and Type	Method and Description
-------------------	------------------------

java.lang.Object	<u>decode</u> (net.ddp2p.ASN1.Decoder decoder)
------------------	--

net.ddp2p.ASN1.Encoder	<u>getEncoder</u> ()
------------------------	----------------------

<u>Peer</u> []	<u>getPeers</u> ()
----------------	--------------------

P2P Gossip System

```
java.lang.String toString()
```

◇

Methods inherited from class net.ddp2p.ASN1.ASNObj

```
instance
```

◇

Methods inherited from class net.ddp2p.ASN1.ASNObjArrayable

```
encode, getEncoder, getEncoder
```

◇

Methods inherited from class java.lang.Object

```
clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait,  
wait, wait
```

•

◆

Field Detail

◇ **peers**

```
private Peer[] peers
```

◇ **TAG**

```
private static final byte TAG
```

◆

Constructor Detail

◇ **PeersAnswer**

```
public PeersAnswer()
```

◇ **PeersAnswer**

```
public PeersAnswer(Peer[] peers)
```

◆

Method Detail

◇ **decode**

```
public java.lang.Object decode(net.ddp2p.ASN1.Decoder decoder)  
throws net.ddp2p.ASN1.ASN1DecoderFail
```

Specified by:

decode in class net.ddp2p.ASN1.ASNObjArrayable

Parameters:

decoder -

Returns:

P2P Gossip System

PeersAnswer Object

Throws:

`net.ddp2p.ASN1.ASN1DecoderFail`

◇ **getEncoder**

`public net.ddp2p.ASN1.Encoder getEncoder()`

Specified by:

`getEncoder` in class `net.ddp2p.ASN1.ASNObjArrayable`

Returns:

PeersAnswer Encoder

◇ **getPeers**

`public Peer[] getPeers()`

◇ **toString**

`public java.lang.String toString()`

Overrides:

`toString` in class `java.lang.Object`

Returns:

PEERS|2|John:PORT=2356:IP=163.118.239.68|Mary:PORT=2355:IP=163.118.237.60|%

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edu.cse4232.gossip.asn1

Class Leave

- java.lang.Object
- - ◆ net.ddp2p.ASN1.ASNObjArrayable
 - ◆
 - ◇ net.ddp2p.ASN1.ASNObj
 - ◇
 - edu.cse4232.gossip.asn1.Leave

```
public class
extends net.ddp2p.ASN1.ASNObj
```

[APPLICATION 4] EXPLICIT SEQUENCE {name UTF8String}

- - ◆ **Field Summary**

Modifier and Type	Field and Description
private java.lang.String	<u>name</u>
static byte	<u>TAG</u>
◇	
Fields inherited from class net.ddp2p.ASN1.ASNObj	
DEPENDANTS_ALL, DEPENDANTS_NONE	

- ◆ **Constructor Summary**

Constructor and Description

Leave()

- ◆ **Method Summary**

Modifier and Type	Method and Description
java.lang.Object	<u>decode</u> (net.ddp2p.ASN1.Decoder decoder)
net.ddp2p.ASN1.Encoder	<u>getEncoder</u> ()
java.lang.String	<u>getName</u> ()
java.lang.String	<u>toString</u> ()

◇ **Methods inherited from class net.ddp2p.ASN1.ASNObj**

`instance`



Methods inherited from class net.ddp2p.ASN1.ASNObjArrayable

`encode, getEncoder, getEncoder`



Methods inherited from class java.lang.Object

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait`



Field Detail

◇ **name**

`private java.lang.String name`

◇ **TAG**

`public static final byte TAG`



Constructor Detail

◇ **Leave**

`public Leave()`



Method Detail

◇ **decode**

`public java.lang.Object decode(net.ddp2p.ASN1.Decoder decoder)
throws net.ddp2p.ASN1.ASN1DecoderFail`

Specified by:

`decode` in class `net.ddp2p.ASN1.ASNObjArrayable`

Parameters:

`decoder` -

Returns:

Leave Object

Throws:

`net.ddp2p.ASN1.ASN1DecoderFail`

P2P Gossip System

◇ **getEncoder**

```
public net.ddp2p.ASN1.Encoder getEncoder()
```

Specified by:

`getEncoder` in class `net.ddp2p.ASN1.ASNObjArrayable`

Returns:

Leave Encoder

◇ **getName**

```
public java.lang.String getName()
```

◇ **toString**

```
public java.lang.String toString()
```

Overrides:

`toString` in class `java.lang.Object`

Returns:

LEAVE:John%

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Package edu.cse4232.gossip.context

Server Context Classes

See: [Description](#)

-

Class	Description
<u>Broadcaster</u>	Used by Server for One-Way Communication with Peers
<u>Context</u>	Holder for Server Assets
<u>ContextBuilder</u>	Builder for Server Context
<u>DataBaseHandler</u>	Handles Server Database Connection
<u>Logger</u>	Handles Server Logging

-

Exception	Description
<u>ContextException</u>	Exception for Server Context

Package edu.cse4232.gossip.context Description

Server Context Classes

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Hierarchy For Package edu.cse4232.gossip.context

Package Hierarchies:

- [All Packages](#)

Class Hierarchy

- java.lang.Object
 - ◆ edu.cse4232.gossip.context.[Broadcaster](#)
 - ◆ edu.cse4232.gossip.context.[Context](#)
 - ◆ edu.cse4232.gossip.context.[ContextBuilder](#)
 - ◆ edu.cse4232.gossip.context.[DataBaseHandler](#) (implements java.lang.AutoCloseable)
 - ◆ edu.cse4232.gossip.context.[Logger](#) (implements java.lang.AutoCloseable)
 - ◆ java.lang.Throwable (implements java.io.Serializable)
 - ◇ java.lang.Exception
 - edu.cse4232.gossip.context.[ContextException](#)

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edu.cse4232.gossip.context

Class Context

- java.lang.Object
- ♦ edu.cse4232.gossip.context.Context

```
public class
extends java.lang.Object
```

Holder for Server Assets

- ♦ **Field Summary**

Modifier and Type	Field and Description
private <u>Broadcaster</u>	<u>broadcaster</u>
private <u>DataBaseHandler</u>	<u>dataBaseHandler</u>
private <u>Logger</u>	<u>logger</u>

- ♦ **Constructor Summary**

Constructor and Description

```
Context(DataBaseHandler dataBaseHandler, Broadcaster broadcaster,
Logger logger)
```

- ♦ **Method Summary**

Modifier and Type	Method and Description
<u>Broadcaster</u>	<u>getBroadcaster()</u>
<u>DataBaseHandler</u>	<u>getDataBaseHandler()</u>
<u>Logger</u>	<u>getLogger()</u>

♦

Methods inherited from class java.lang.Object

```
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString,
wait, wait, wait
```

- ◆ **Field Detail**

- ◆ **broadcaster**

- ```
private final Broadcaster broadcaster
```

- ◆ **dataBaseHandler**

- ```
private final DataBaseHandler dataBaseHandler
```

- ◆ **logger**

- ```
private final Logger logger
```



- Constructor Detail**

- ◆ **Context**

- ```
Context(DataBaseHandler dataBaseHandler,  
        Broadcaster broadcaster,  
        Logger logger)
```



- Method Detail**

- ◆ **getBroadcaster**

- ```
public Broadcaster getBroadcaster()
 throws ContextException
```

- Throws:

- ContextException

- ◆ **getDataBaseHandler**

- ```
public DataBaseHandler getDataBaseHandler()  
                        throws ContextException
```

- Throws:

- ContextException

- ◆ **getLogger**

- ```
public Logger getLogger()
 throws ContextException
```

- Throws:

- ContextException

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edu.cse4232.gossip.context

## Class ContextBuilder

- java.lang.Object
- ◆ edu.cse4232.gossip.context.ContextBuilder

•

---

```
public class
extends java.lang.Object
```

Builder for Server Context

• ◆

### Field Summary

| Modifier and Type              | Field and Description  |
|--------------------------------|------------------------|
| private <u>Broadcaster</u>     | <u>broadcaster</u>     |
| private <u>DataBaseHandler</u> | <u>dataBaseHandler</u> |
| private <u>Logger</u>          | <u>logger</u>          |

◆

### Constructor Summary

#### Constructor and Description

ContextBuilder()

◆

### Method Summary

| Modifier and Type     | Method and Description                                              |
|-----------------------|---------------------------------------------------------------------|
| <u>Context</u>        | <u>createContext</u> ()                                             |
| <u>ContextBuilder</u> | <u>setBroadcaster</u> ( <u>Broadcaster</u> broadcaster)             |
| <u>ContextBuilder</u> | <u>setDataBaseHandler</u> ( <u>DataBaseHandler</u> dataBaseHandler) |
| <u>ContextBuilder</u> | <u>setLogger</u> ( <u>Logger</u> logger)                            |

◆

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

- ◆ **Field Detail**

- ◆ **broadcaster**

- ```
private Broadcaster broadcaster
```

- ◆ **dataBaseHandler**

- ```
private DataBaseHandler dataBaseHandler
```

- ◆ **logger**

- ```
private Logger logger
```



- Constructor Detail**

- ◆ **ContextBuilder**

- ```
public ContextBuilder()
```



- Method Detail**

- ◆ **createContext**

- ```
public Context createContext()
```

- Returns:

- New Context

- ◆ **setBroadcaster**

- ```
public ContextBuilder setBroadcaster(Broadcaster broadcaster)
```

- ◆ **setDataBaseHandler**

- ```
public ContextBuilder setDataBaseHandler(DataBaseHandler dataBaseHandler)
```

- ◆ **setLogger**

- ```
public ContextBuilder setLogger(Logger logger)
```

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## Serialized Form

- **Package edu.cse4232.gossip.context**
  - ♦ **Class edu.cse4232.gossip.context.ContextException extends java.lang.Exception implements Serializable**

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edu.cse4232.gossip.context

## Class ContextException

- java.lang.Object
    - ♦ java.lang.Throwable
      - ♦ java.lang.Exception
        - ♦ edu.cse4232.gossip.context.ContextException
  - All Implemented Interfaces:
    - java.io.Serializable
- 

```
public class
extends java.lang.Exception
```

Exception for Server Context  
See Also:

[Serialized Form](#)

- ♦ **Constructor Summary**

### Constructor and Description

[ContextException](#)(java.lang.String message)

- ♦ **Method Summary**

♦

### Methods inherited from class java.lang.Throwable

addSuppressed, fillInStackTrace, getCause, getLocalizedMessage, getMessage, getStackTrace, getSuppressed, initCause, printStackTrace, printStackTrace, printStackTrace, setStackTrace, toString

♦

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

- ♦ **Constructor Detail**

## P2P Gossip System

### ◇ **ContextException**

```
public ContextException(java.lang.String message)
```

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## Class DataBaseHandler

- java.lang.Object
  - ◆ edu.cse4232.gossip.context.DataBaseHandler
  - All Implemented Interfaces:  
java.lang.AutoCloseable
- 

```
public class
extends java.lang.Object
implements java.lang.AutoCloseable
```

Handles Server Database Connection

- ◆ **Field Summary**

| Modifier and Type                      | Field and Description |
|----------------------------------------|-----------------------|
| private java.sql.Connection            | <u>connection</u>     |
| private int                            | <u>inRoom</u>         |
| private java.util.concurrent.Semaphore | <u>leavestile</u>     |
| private java.util.concurrent.Semaphore | <u>room</u>           |
| private java.util.concurrent.Semaphore | <u>turnstile</u>      |

- ◆ **Constructor Summary**

### Constructor and Description

DataBaseHandler(java.lang.String connectionString)

- ◆ **Method Summary**

| Modifier and Type | Method and Description                                                                  |
|-------------------|-----------------------------------------------------------------------------------------|
| void              | <u>close</u> ()<br>Closes Database Connection                                           |
| private void      | <u>enterRoom</u> (boolean writer)<br>First Writer Locks Room First Reader Locks Writers |



## P2P Gossip System

|              |                                                                                              |
|--------------|----------------------------------------------------------------------------------------------|
| boolean      | <u>exists</u> (java.lang.String sha)<br>Tests for Duplicate Gossip Message                   |
| void         | <u>insertGossip</u> (java.lang.String sha, java.lang.String dt,<br>java.lang.String message) |
| void         | <u>insertPeer</u> (java.lang.String name, java.lang.String port,<br>java.lang.String ip)     |
| private void | <u>leaveRoom</u> (boolean writer)<br>Writer Unlocks Room Last Reader Unlocks Room            |
| void         | <u>recreate</u> ()<br>Drops All Tables Creates All Tables                                    |
| void         | <u>removeUser</u> (java.lang.String name)<br>Deletes Peer on LEAVE Message                   |
| Peer[]       | <u>selectPeers</u> ()                                                                        |

◇

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString,  
wait, wait, wait

•

◆

### Field Detail

#### ◇ connection

private java.sql.Connection connection

#### ◇ inRoom

private int inRoom

#### ◇ leavestile

private final java.util.concurrent.Semaphore leavestile

#### ◇ room

private final java.util.concurrent.Semaphore room

#### ◇ turnstile

private final java.util.concurrent.Semaphore turnstile

◆

### Constructor Detail

#### ◇ DataBaseHandler

public DataBaseHandler(java.lang.String connectionString)  
throws java.sql.SQLException

Throws:

## P2P Gossip System

`java.sql.SQLException`



### Method Detail

#### ◇ **close**

```
public void close()
 throws java.sql.SQLException
```

Closes Database Connection

Specified by:

close in interface `java.lang.AutoCloseable`

Throws:

`java.sql.SQLException` - `Connection.close()`

#### ◇ **enterRoom**

```
private void enterRoom(boolean writer)
```

First Writer Locks Room First Reader Locks Writers

Parameters:

writer -

#### ◇ **exists**

```
public boolean exists(java.lang.String sha)
 throws java.sql.SQLException
```

Tests for Duplicate Gossip Message

Parameters:

sha -

Returns:

True if SHA-256 Hash already exists

Throws:

`java.sql.SQLException` - `PreparedStatement.executeQuery()`

#### ◇ **insertGossip**

```
public void insertGossip(java.lang.String sha,
 java.lang.String dt,
 java.lang.String message)
 throws java.sql.SQLException
```

Parameters:

sha -

dt -

message -

Throws:

`java.sql.SQLException` - `PreparedStatement.executeUpdate()`

## P2P Gossip System

### ◇ insertPeer

```
public void insertPeer(java.lang.String name,
 java.lang.String port,
 java.lang.String ip)
 throws java.sql.SQLException
```

#### Parameters:

name -  
port -  
ip -

#### Throws:

java.sql.SQLException - PreparedStatement.executeUpdate()

### ◇ leaveRoom

```
private void leaveRoom(boolean writer)
```

Writer Unlocks Room Last Reader Unlocks Room

#### Parameters:

writer -

### ◇ recreate

```
public void recreate()
 throws java.sql.SQLException
```

Drops All Tables Creates All Tables

#### Throws:

java.sql.SQLException - Statement.executeUpdate()

### ◇ removeUser

```
public void removeUser(java.lang.String name)
 throws java.sql.SQLException
```

Deletes Peer on LEAVE Message

#### Parameters:

name -

#### Throws:

java.sql.SQLException - PreparedStatement.executeUpdate()

### ◇ selectPeers

```
public Peer[] selectPeers()
 throws java.sql.SQLException
```

#### Returns:

Sequence of Peers Known to Server

#### Throws:

java.sql.SQLException - Statement.executeQuery()

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## Class Logger

- java.lang.Object
    - ◆ edu.cse4232.gossip.context.Logger
  - All Implemented Interfaces:
    - java.lang.AutoCloseable
- 

```
public class
extends java.lang.Object
implements java.lang.AutoCloseable
```

Handles Server Logging

- ◆ **Field Summary**

| Modifier and Type                | Field and Description          |
|----------------------------------|--------------------------------|
| private boolean                  | <u><a>debugMode</a></u>        |
| static java.lang.String          | <u><a>DRIVER</a></u>           |
| private java.io.FileOutputStream | <u><a>fileOutputStream</a></u> |
| static java.lang.String          | <u><a>NOP</a></u>              |
| static java.lang.String          | <u><a>RECV</a></u>             |
| static java.lang.String          | <u><a>SENT</a></u>             |
| static java.lang.String          | <u><a>SERVER</a></u>           |
| static java.lang.String          | <u><a>TCP</a></u>              |
| static java.lang.String          | <u><a>UDP</a></u>              |
| static java.lang.String          | <u><a>WARN</a></u>             |

- ◆ **Constructor Summary**

### Constructor and Description

Logger(java.lang.String path, boolean append, boolean debug)

## ♦ Method Summary

| Modifier and Type | Method and Description                                                                                                          |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------|
| void              | <a href="#"><u>close()</u></a><br>Closes File Output Stream                                                                     |
| void              | <a href="#"><u>log</u></a> (java.lang.Exception ex)                                                                             |
| void              | <a href="#"><u>log</u></a> (java.lang.String str)                                                                               |
| void              | <a href="#"><u>log</u></a> (java.lang.String protocol, java.lang.String unit, java.lang.String direction, java.lang.String str) |

◇

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

•

♦

## Field Detail

### ◇ debugMode

```
private final boolean debugMode
```

### ◇ DRIVER

```
public static final java.lang.String DRIVER
```

See Also:

[Constant Field Values](#)

### ◇ fileOutputStream

```
private java.io.FileOutputStream fileOutputStream
```

### ◇ NOP

```
public static final java.lang.String NOP
```

See Also:

[Constant Field Values](#)

### ◇ RECV

```
public static final java.lang.String RECV
```

See Also:

[Constant Field Values](#)

## P2P Gossip System

### ◇ SENT

```
public static final java.lang.String SENT
```

See Also:

[Constant Field Values](#)

### ◇ SERVER

```
public static final java.lang.String SERVER
```

See Also:

[Constant Field Values](#)

### ◇ TCP

```
public static final java.lang.String TCP
```

See Also:

[Constant Field Values](#)

### ◇ UDP

```
public static final java.lang.String UDP
```

See Also:

[Constant Field Values](#)

### ◇ WARN

```
public static final java.lang.String WARN
```

See Also:

[Constant Field Values](#)



## Constructor Detail

### ◇ Logger

```
public Logger(java.lang.String path,
 boolean append,
 boolean debug)
 throws java.io.IOException
```

Parameters:

path - Path to Log File  
append - Append to Log File  
debug - Debug Mode

Throws:

java.io.IOException - Cannot Create Log File

## ◆ Method Detail

### ◆ **close**

```
public void close()
 throws java.io.IOException
```

Closes File Output Stream

Specified by:

close in interface `java.lang.AutoCloseable`

Throws:

`java.io.IOException` - File Stream Error

### ◆ **log**

```
public void log(java.lang.Exception ex)
```

### ◆ **log**

```
public void log(java.lang.String str)
```

### ◆ **log**

```
public void log(java.lang.String protocol,
 java.lang.String unit,
 java.lang.String direction,
 java.lang.String str)
```

Parameters:

protocol - UDP/TCP

unit - Server/Client

direction - Send/Recv

str - Message

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## Class Broadcaster

- java.lang.Object
- ◆ edu.cse4232.gossip.context.Broadcaster

---

```
public class
extends java.lang.Object
```

Used by Server for One-Way Communication with Peers

- ◆ **Field Summary**

| Modifier and Type               | Field and Description |
|---------------------------------|-----------------------|
| private java.net.DatagramSocket | <u>socket</u>         |

- ◆ **Constructor Summary**

### Constructor and Description

Broadcaster()

- ◆ **Method Summary**

| Modifier and Type | Method and Description                                                                              |
|-------------------|-----------------------------------------------------------------------------------------------------|
| void              | <u>broadcast</u> ( <u>Peer</u> [] peers, <u>Gossip</u> gossip)<br>Updates Known Peers of New Gossip |

◆

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

- ◆ **Field Detail**



## P2P Gossip System

### ◇ **socket**

```
private final java.net.DatagramSocket socket
```



## Constructor Detail

### ◇ **Broadcaster**

```
public Broadcaster()
 throws java.net.SocketException
```

Throws:

java.net.SocketException



## Method Detail

### ◇ **broadcast**

```
public void broadcast(Peer[] peers,
 Gossip gossip)
 throws java.io.IOException
```

Updates Known Peers of New Gossip

Parameters:

peers -

gossip -

Throws:

java.io.IOException - Socket Send DatagramPacket

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## Package edu.cse4232.gossip.server

Gossip Server Classes

See: [Description](#)

- 

| Class                               | Description                                            |
|-------------------------------------|--------------------------------------------------------|
| <a href="#"><u>PeerWitness</u></a>  | Notifies Server of Itself Receives New Gossip Messages |
| <a href="#"><u>Responder</u></a>    | Base Class for UTP/TCP Responders                      |
| <a href="#"><u>Server</u></a>       | Gossip Server                                          |
| <a href="#"><u>TCPResponder</u></a> | Handles TCP Clients                                    |
| <a href="#"><u>UDPResponder</u></a> | Handles UDP Clients                                    |

## Package edu.cse4232.gossip.server Description

Gossip Server Classes

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## Hierarchy For Package edu.cse4232.gossip.server

Package Hierarchies:

- All Packages

### Class Hierarchy

- java.lang.Object
  - ◆ edu.cse4232.gossip.server.PeerWitness
  - ◆ edu.cse4232.gossip.server.Responder (implements java.io.Closeable, java.lang.Runnable)
    - ◇ edu.cse4232.gossip.server.TCPResponder
    - ◇ edu.cse4232.gossip.server.UDPResponder
  - ◆ edu.cse4232.gossip.server.Server (implements java.lang.Runnable)

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## Class PeerWitness

- java.lang.Object
- ◆ edu.cse4232.gossip.server.PeerWitness

---

```
class
extends java.lang.Object
```

Notifies Server of Itself Receives New Gossip Messages

- ◆ **Field Summary**

| Modifier and Type | Field and Description |
|-------------------|-----------------------|
|-------------------|-----------------------|

|                    |                    |
|--------------------|--------------------|
| private static int | <u>PACKET_SIZE</u> |
|--------------------|--------------------|

- ◆ **Constructor Summary**

| Constructor and Description |
|-----------------------------|
|-----------------------------|

|                       |
|-----------------------|
| <u>PeerWitness</u> () |
|-----------------------|

- ◆ **Method Summary**

| Modifier and Type | Method and Description |
|-------------------|------------------------|
|-------------------|------------------------|

|             |                                        |
|-------------|----------------------------------------|
| static void | <u>main</u> (java.lang.String... args) |
|-------------|----------------------------------------|

◆

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

- ◆ **Field Detail**

## P2P Gossip System

### ◇ **PACKET\_SIZE**

```
private static final int PACKET_SIZE
```

See Also:

[Constant Field Values](#)



## **Constructor Detail**

### ◇ **PeerWitness**

```
PeerWitness()
```



## **Method Detail**

### ◇ **main**

```
public static void main(java.lang.String... args)
```

Parameters:

args - -h [server ip] -p [server port]

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## Class Server

- java.lang.Object
    - ◆ edu.cse4232.gossip.server.Server
  - All Implemented Interfaces:  
java.lang.Runnable
- 

```
class
extends java.lang.Object
implements java.lang.Runnable
```

Gossip Server

- ◆ **Field Summary**

| Modifier and Type               | Field and Description |
|---------------------------------|-----------------------|
| private static boolean          | <u>APPEND</u>         |
| private <u>Context</u>          | <u>context</u>        |
| private static boolean          | <u>DEBUG_MODE</u>     |
| private static java.lang.String | <u>LOG_PATH</u>       |
| static int                      | <u>PACKET_SIZE</u>    |
| private int                     | <u>port</u>           |
| static int                      | <u>TIME_OUT</u>       |

- ◆ **Constructor Summary**

| Modifier | Constructor and Description                      |
|----------|--------------------------------------------------|
| private  | <u>Server</u> (int port, <u>Context</u> context) |

- ◆ **Method Summary**

| Modifier and Type | Method and Description                 |
|-------------------|----------------------------------------|
| static void       | <u>main</u> (java.lang.String... args) |

## P2P Gossip System

`void`      [run\(\)](#)  
Creates 2 Server Threads (UDP, TCP) Listens for Clients Creates New Responder Thread for each Client

◇

### Methods inherited from class `java.lang.Object`

`clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait`

•

◆

### Field Detail

#### ◇ APPEND

`private static final boolean APPEND`

See Also:

[Constant Field Values](#)

#### ◇ context

`private final Context context`

#### ◇ DEBUG\_MODE

`private static final boolean DEBUG_MODE`

See Also:

[Constant Field Values](#)

#### ◇ LOG\_PATH

`private static final java.lang.String LOG_PATH`

See Also:

[Constant Field Values](#)

#### ◇ PACKET\_SIZE

`public static final int PACKET_SIZE`

See Also:

[Constant Field Values](#)

#### ◇ port

`private final int port`

#### ◇ TIME\_OUT

`public static final int TIME_OUT`

See Also:

[Constant Field Values](#)

## ◆ Constructor Detail

### ◆ Server

```
private Server(int port,
 Context context)
```



## Method Detail

### ◆ main

```
public static void main(java.lang.String... args)
```

Parameters:

args - -p [port] -d [database file]

### ◆ run

```
public void run()
```

Creates 2 Server Threads (UDP, TCP) Listens for Clients Creates New Responder Thread for each Client

Specified by:

run in interface `java.lang.Runnable`



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## Class Responder

- java.lang.Object
    - ◆ edu.cse4232.gossip.server.Responder
  - All Implemented Interfaces:
    - java.io.Closeable, java.lang.AutoCloseable, java.lang.Runnable
  - Direct Known Subclasses:
    - [TCPResponder](#), [UDPResponder](#)
- 

```
abstract class
extends java.lang.Object
implements java.lang.Runnable, java.io.Closeable
```

Base Class for UTP/TCP Responders

- ◆ 

### Field Summary

| Modifier and Type                       | Field and Description           |
|-----------------------------------------|---------------------------------|
| private <a href="#">Broadcaster</a>     | <a href="#">broadcaster</a>     |
| private <a href="#">DataBaseHandler</a> | <a href="#">dataBaseHandler</a> |
| private <a href="#">Logger</a>          | <a href="#">logger</a>          |

- ◆ 

### Constructor Summary

| Constructor and Description                                  |
|--------------------------------------------------------------|
| <a href="#">Responder</a> ( <a href="#">Context</a> context) |

- ◆ 

### Method Summary

| Modifier and Type                                 | Method and Description                                                         |
|---------------------------------------------------|--------------------------------------------------------------------------------|
| <a href="#">Broadcaster</a>                       | <a href="#">getBroadcaster()</a>                                               |
| (package private) <a href="#">DataBaseHandler</a> | <a href="#">getDataBaseHandler()</a>                                           |
| <a href="#">Logger</a>                            | <a href="#">getLogger()</a>                                                    |
|                                                   | <a href="#">handleGossip</a> ( <a href="#">net.ddp2p.ASN1.Decoder</a> decoder) |

## P2P Gossip System

|                           |                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------|
| (package private)<br>void | Decodes Gossip Messages Inserts New Messages into Database<br>Broadcasts New Gossip to Known Peers       |
| (package private)<br>void | <u>handleLeave</u> (net.ddp2p.ASN1.Decoder decoder)<br>Decodes Leave Messages Deletes Peer from Database |
| (package private)<br>void | <u>handlePeer</u> (net.ddp2p.ASN1.Decoder decoder)<br>Decodes Peer Messages Upserts Peer into Database   |
| abstract void             | <u>handlePeersQuery</u> ()<br>Depends on Socket Type of Responder                                        |



### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait



### Methods inherited from interface java.lang.Runnable

run



### Methods inherited from interface java.io.Closeable

close



## Field Detail

### ◇ broadcaster

private Broadcaster broadcaster

### ◇ dataBaseHandler

private DataBaseHandler dataBaseHandler

### ◇ logger

private Logger logger



## Constructor Detail

### ◇ Responder

Responder(Context context)  
throws ContextException

Parameters:

context - Server Assets

Throws:

ContextException - Uninitialized Object

## ◆ Method Detail

### ◇ **getBroadcaster**

```
public Broadcaster getBroadcaster()
```

### ◇ **getDataBaseHandler**

```
DataBaseHandler getDataBaseHandler()
```

### ◇ **getLogger**

```
public Logger getLogger()
```

### ◇ **handleGossip**

```
void handleGossip(net.ddp2p.ASN1.Decoder decoder)
```

Decodes Gossip Messages Inserts New Messages into Database Broadcasts New Gossip to Known Peers

Parameters:

decoder - Gossip Decoder

### ◇ **handleLeave**

```
void handleLeave(net.ddp2p.ASN1.Decoder decoder)
```

Decodes Leave Messages Deletes Peer from Database

Parameters:

decoder -

### ◇ **handlePeer**

```
void handlePeer(net.ddp2p.ASN1.Decoder decoder)
```

Decodes Peer Messages Upserts Peer into Database

Parameters:

decoder - Peer Decoder

### ◇ **handlePeersQuery**

```
public abstract void handlePeersQuery()
```

Depends on Socket Type of Responder

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## Class UDPResponder

- java.lang.Object
  - - ◆ [edu.cse4232.gossip.server.Responder](#)
    - ◆ [edu.cse4232.gossip.server.UDPResponder](#)
  - All Implemented Interfaces:  
java.io.Closeable, java.lang.AutoCloseable, java.lang.Runnable
- 

```
public class
 extends Responder
```

Handles UDP Clients

### Field Summary

| Modifier and Type               | Field and Description  |
|---------------------------------|------------------------|
| private java.net.DatagramPacket | <a href="#">packet</a> |
| private java.net.DatagramSocket | <a href="#">socket</a> |

### Constructor Summary

#### Constructor and Description

[UDPResponder](#)(java.net.DatagramPacket packet, [Context](#) context)

### Method Summary

| Modifier and Type | Method and Description                                                                                                           |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------|
| void              | <a href="#">close()</a><br>Closes UDP Socket                                                                                     |
| void              | <a href="#">handlePeersQuery()</a><br>Selects Known Peers from Database Encodes New PeerAnswer Sends PeerAnswer Packet to Client |
| void              | <a href="#">run()</a><br>Serves Individual UDP Packets                                                                           |

◇ **Methods inherited from  
class edu.cse4232.gossip.server.Responder**

[getBroadcaster](#), [getDatabaseHandler](#), [getLogger](#), [handleGossip](#), [handleLeave](#),  
[handlePeer](#)

◇ **Methods inherited from class java.lang.Object**

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString,  
wait, wait, wait

• ◇ **Field Detail**

◇ **packet**

private java.net.DatagramPacket packet

◇ **socket**

private java.net.DatagramSocket socket

◇ **Constructor Detail**

◇ **UDPResponder**

```
public UDPResponder(java.net.DatagramPacket packet,
 Context context)
 throws ContextException,
 java.net.SocketException
```

Parameters:

packet - Received UDP Packet  
context - Server Context

Throws:

[ContextException](#) - Server Assets Uninitialized  
java.net.SocketException - I/O Unavailable

◇ **Method Detail**

◇ **close**

```
public void close()
```

Closes UDP Socket

## P2P Gossip System

### ◇ **handlePeersQuery**

```
public void handlePeersQuery()
```

Selects Known Peers from Database Encodes New PeerAnswer Sends PeerAnswer Packet to Client

Specified by:

handlePeersQuery in class Responder

### ◇ **run**

```
public void run()
```

Serves Individual UDP Packets

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## Class TCPResponder

- java.lang.Object
  - - ◆ edu.cse4232.gossip.server.Responder
    - ◆ edu.cse4232.gossip.server.TCPResponder
  - All Implemented Interfaces:  
java.io.Closeable, java.lang.AutoCloseable, java.lang.Runnable
- 

```
public class
 extends Responder
```

Handles TCP Clients

### Field Summary

| Modifier and Type            | Field and Description |
|------------------------------|-----------------------|
| private java.io.InputStream  | <u>inputStream</u>    |
| private java.io.OutputStream | <u>outputStream</u>   |
| private java.net.Socket      | <u>socket</u>         |

### Constructor Summary

#### Constructor and Description

TCPResponder(java.net.Socket client, Context context)

### Method Summary

| Modifier and Type | Method and Description                                                                                                 |
|-------------------|------------------------------------------------------------------------------------------------------------------------|
| void              | <u>close</u> ()<br>Closes I/O Streams Closes TCP Socket                                                                |
| void              | <u>handlePeersQuery</u> ()<br>Selects Known Peers from Database Encodes New PeerAnswer Streams<br>PeerAnswer to Client |
| void              | <u>run</u> ()                                                                                                          |

## P2P Gossip System

Serves Requests while Client Connection Open



### Methods inherited from class `edu.cse4232.gossip.server.Responder`

`getBroadcaster`, `getDataBaseHandler`, `getLogger`, `handleGossip`, `handleLeave`,  
`handlePeer`



### Methods inherited from class `java.lang.Object`

`clone`, `equals`, `finalize`, `getClass`, `hashCode`, `notify`, `notifyAll`, `toString`,  
`wait`, `wait`, `wait`



## Field Detail

### ◇ `inputStream`

```
private java.io.InputStream inputStream
```

### ◇ `outputStream`

```
private java.io.OutputStream outputStream
```

### ◇ `socket`

```
private java.net.Socket socket
```



## Constructor Detail

### ◇ `TCPResponder`

```
public TCPResponder(java.net.Socket client,
 Context context)
 throws ContextException,
 java.io.IOException
```

Parameters:

`client` - TCP Socket

`context` - Server Context

Throws:

`ContextException` - Server Assets Uninitialized

`java.io.IOException` - I/O Unavailable



## Method Detail



## P2P Gossip System

### ◇ **close**

```
public void close()
 throws java.io.IOException
```

Closes I/O Streams Closes TCP Socket

Throws:

`java.io.IOException` - I/O Socket Exception

### ◇ **handlePeersQuery**

```
public void handlePeersQuery()
```

Selects Known Peers from Database Encodes New PeerAnswer Streams PeerAnswer to Client

Specified by:

`handlePeersQuery` in class `Responder`

### ◇ **run**

```
public void run()
```

Serves Requests while Client Connection Open

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## Package edu.cse4232.gossip.client

Gossip Client Classes

See: [Description](#)

- 

| Class                                      | Description                            |
|--------------------------------------------|----------------------------------------|
| <a href="#"><u>Client</u></a>              |                                        |
| <a href="#"><u>GossipClient</u></a>        | All Clients extend this abstract class |
| <a href="#"><u>GossipClientFactory</u></a> | Factory for Creating Clients           |
| <a href="#"><u>TCPClient</u></a>           | TCP Client                             |
| <a href="#"><u>UDPClient</u></a>           | UDP Client                             |

## Package edu.cse4232.gossip.client Description

Gossip Client Classes

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## Hierarchy For Package edu.cse4232.gossip.client

Package Hierarchies:

- All Packages

### Class Hierarchy

- java.lang.Object
  - ◆ edu.cse4232.gossip.client.Client (implements java.lang.Runnable)
  - ◆ edu.cse4232.gossip.client.GossipClient
    - ◇ edu.cse4232.gossip.client.TCPClient
    - ◇ edu.cse4232.gossip.client.UDPClient
  - ◆ edu.cse4232.gossip.client.GossipClientFactory

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edu.cse4232.gossip.client

## Class GossipClient

- java.lang.Object
    - ◆ edu.cse4232.gossip.client.GossipClient
  - Direct Known Subclasses:  
TCPClient, UDPClient
- 

```
abstract class
extends java.lang.Object
```

All Clients extend this abstract class

### ◆ Field Summary

| Modifier and Type            | Field and Description |
|------------------------------|-----------------------|
| (package private) static int | <u>PACKET_SIZE</u>    |
| (package private) static int | <u>TCP</u>            |
| (package private) static int | <u>UDP</u>            |

### ◆ Constructor Summary

#### Constructor and Description

GossipClient()

### ◆ Method Summary

| Modifier and Type                           | Method and Description |
|---------------------------------------------|------------------------|
| (package private) abstract void             | <u>close</u> ()        |
| (package private) abstract java.lang.String | <u>getHost</u> ()      |
| (package private) abstract <u>Peer</u> []   | <u>getPeers</u> ()     |
| (package private) abstract int              | <u>getPort</u> ()      |

## P2P Gossip System

```
(package private) abstract java.lang.String getType\(\)

(package private) abstract void sendGossip(java.lang.String message)

(package private) abstract void sendPeer(java.lang.String name,
java.lang.String ip, java.lang.String port)
```



### Methods inherited from class java.lang.Object

[clone](#), [equals](#), [finalize](#), [getClass](#), [hashCode](#), [notify](#), [notifyAll](#), [toString](#),  
[wait](#), [wait](#), [wait](#)



### Field Detail

#### ◆ **PACKET\_SIZE**

```
static final int PACKET_SIZE
```

See Also:

[Constant Field Values](#)

#### ◆ **TCP**

```
static final int TCP
```

See Also:

[Constant Field Values](#)

#### ◆ **UDP**

```
static final int UDP
```

See Also:

[Constant Field Values](#)



### Constructor Detail

#### ◆ **GossipClient**

```
GossipClient()
```



### Method Detail

## P2P Gossip System

### ◇ **close**

```
abstract void close()
```

### ◇ **getHost**

```
abstract java.lang.String getHost()
```

### ◇ **getPeers**

```
abstract Peer[] getPeers()
 throws java.lang.Exception
```

Throws:

java.lang.Exception

### ◇ **getPort**

```
abstract int getPort()
```

### ◇ **getType**

```
abstract java.lang.String getType()
```

### ◇ **sendGossip**

```
abstract void sendGossip(java.lang.String message)
 throws java.lang.Exception
```

Throws:

java.lang.Exception

### ◇ **sendPeer**

```
abstract void sendPeer(java.lang.String name,
 java.lang.String ip,
 java.lang.String port)
 throws java.lang.Exception
```

Throws:

java.lang.Exception

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edu.cse4232.gossip.client

## Class GossipClientFactory

- java.lang.Object
- ◆ edu.cse4232.gossip.client.GossipClientFactory

---

```
abstract class
extends java.lang.Object
```

Factory for Creating Clients

- ◆ **Constructor Summary**

### Constructor and Description

[GossipClientFactory\(\)](#)

- ◆ **Method Summary**

#### Modifier and Type

(package private) static  
[GossipClient](#)

◆

#### Method and Description

[makeClient](#)(java.lang.String host, int port,  
int type)

Generates a new Client based on runtime information

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString,  
wait, wait, wait

- ◆ **Constructor Detail**

#### ◆ GossipClientFactory

[GossipClientFactory\(\)](#)

- ◆ **Method Detail**

## P2P Gossip System

### ◇ **makeClient**

```
static GossipClient makeClient(java.lang.String host,
 int port,
 int type)
 throws java.lang.Exception
```

Generates a new Client based on runtime information

Parameters:

- host - Server IP
- port - Server Port
- type - UDP or TCP Connection

Returns:

GossipClient of type UDP/TCP

Throws:

java.lang.Exception - type in range [UDP, TCP]



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edu.cse4232.gossip.client

## Class UDPClient

- java.lang.Object
- - ◆ [edu.cse4232.gossip.client.GossipClient](#)
  - ◆
    - ◇ edu.cse4232.gossip.client.UDPClient

```
class
extends GossipClient
```

UDP Client

- - ◆ **Field Summary**

| Modifier and Type                                                                                   | Field and Description                                                                        |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| private java.net.SocketAddress                                                                      | <a href="#"><u>address</u></a>                                                               |
| private java.lang.String                                                                            | <a href="#"><u>host</u></a>                                                                  |
| private int                                                                                         | <a href="#"><u>port</u></a>                                                                  |
| private java.net.DatagramSocket                                                                     | <a href="#"><u>udpSocket</u></a>                                                             |
| ◇                                                                                                   |                                                                                              |
| <b>Fields inherited from</b><br><b>class <a href="#">edu.cse4232.gossip.client.GossipClient</a></b> |                                                                                              |
|                                                                                                     | <a href="#"><u>PACKET_SIZE</u></a> , <a href="#"><u>TCP</u></a> , <a href="#"><u>UDP</u></a> |

- ◆ **Constructor Summary**

| Constructor and Description                                        |
|--------------------------------------------------------------------|
| <a href="#"><u>UDPClient</u></a> (java.lang.String host, int port) |

- ◆ **Method Summary**

| Modifier and Type | Method and Description                               |
|-------------------|------------------------------------------------------|
| void              | <a href="#"><u>close</u></a> ()<br>Closes UDP Socket |
| java.lang.String  | <a href="#"><u>getHost</u></a> ()                    |

## P2P Gossip System

```
Peer[] getPeers()
 Sends PeersQuery Request Receives PeersAnswer Response

int getPort()

java.lang.String getType()

void sendGossip(java.lang.String message)

void sendPeer(java.lang.String name, java.lang.String ip,
 java.lang.String port)
```

◇

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

•

◆

### Field Detail

#### ◇ address

```
private java.net.SocketAddress address
```

#### ◇ host

```
private java.lang.String host
```

#### ◇ port

```
private int port
```

#### ◇ udpSocket

```
private java.net.DatagramSocket udpSocket
```

◆

### Constructor Detail

#### ◇ UDPClient

```
public UDPClient(java.lang.String host,
 int port)
 throws java.lang.Exception
```

Throws:

```
java.lang.Exception
```

◆

### Method Detail

## P2P Gossip System

### ◇ **close**

```
public void close()
```

Closes UDP Socket

Specified by:

close in class GossipClient

### ◇ **getHost**

```
public java.lang.String getHost()
```

Specified by:

getHost in class GossipClient

### ◇ **getPeers**

```
public Peer[] getPeers()
 throws java.io.IOException,
 net.ddp2p.ASN1.ASN1DecoderFail
```

Sends PeersQuery Request Receives PeersAnswer Response

Specified by:

getPeers in class GossipClient

Returns:

Known Peers

Throws:

java.io.IOException - Socket Send/Receive DatagramPacket  
net.ddp2p.ASN1.ASN1DecoderFail - PeersAnswer Decoder

### ◇ **getPort**

```
public int getPort()
```

Specified by:

getPort in class GossipClient

### ◇ **getType**

```
public java.lang.String getType()
```

Specified by:

getType in class GossipClient

### ◇ **sendGossip**

```
public void sendGossip(java.lang.String message)
 throws java.security.NoSuchAlgorithmException,
 java.io.IOException
```

Specified by:

sendGossip in class GossipClient

Parameters:

message -

Throws:

java.security.NoSuchAlgorithmException - SHA-256

## P2P Gossip System

`java.io.IOException` - Socket Send DatagramPacket

### ◇ **sendPeer**

```
public void sendPeer(java.lang.String name,
 java.lang.String ip,
 java.lang.String port)
 throws java.io.IOException
```

Specified by:

[sendPeer](#) in class [GossipClient](#)

Parameters:

name -

ip -

port -

Throws:

`java.io.IOException` - Socket Send DatagramPacket

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edu.cse4232.gossip.client

## Class TCPClient

- java.lang.Object
- - ◆ [edu.cse4232.gossip.client.GossipClient](#)
  - ◆
    - ◇ edu.cse4232.gossip.client.TCPClient

```
class
extends GossipClient
```

TCP Client

- - ◆ **Field Summary**

| Modifier and Type            | Field and Description       |
|------------------------------|-----------------------------|
| private java.lang.String     | <a href="#"><u>host</u></a> |
| private java.io.InputStream  | <a href="#"><u>is</u></a>   |
| private java.io.OutputStream | <a href="#"><u>os</u></a>   |
| private int                  | <a href="#"><u>port</u></a> |
| private java.net.Socket      | <a href="#"><u>sock</u></a> |

◇

**Fields inherited from  
class edu.cse4232.gossip.client.[GossipClient](#)**

[PACKET SIZE](#), [TCP](#), [UDP](#)

- ◆ **Constructor Summary**

### Constructor and Description

[TCPClient](#)(java.lang.String host, int port)

- ◆ **Method Summary**

| Modifier and Type | Method and Description                                                      |
|-------------------|-----------------------------------------------------------------------------|
| void              | <a href="#"><u>close</u></a> ()<br>Closes I/O Streams and Socket Connection |

## P2P Gossip System

```
java.lang.String getHost()
Peer[] getPeers()
 Sends PeersQuery Request Receives PeersAnswer Response
int getPort()
java.lang.String getType()
void sendGossip(java.lang.String message)
void sendPeer(java.lang.String name, java.lang.String ip,
 java.lang.String port)
```

◇

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

• ◇

### Field Detail

#### ◇ host

```
private java.lang.String host
```

#### ◇ is

```
private java.io.InputStream is
```

#### ◇ os

```
private java.io.OutputStream os
```

#### ◇ port

```
private int port
```

#### ◇ sock

```
private java.net.Socket sock
```

◇

### Constructor Detail

#### ◇ TCPClient

```
public TCPClient(java.lang.String host,
 int port)
 throws java.io.IOException
```

Throws:

java.io.IOException

## Method Detail

### ◇ **close**

```
public void close()
```

Closes I/O Streams and Socket Connection

Specified by:

close in class GossipClient

### ◇ **getHost**

```
public java.lang.String getHost()
```

Specified by:

getHost in class GossipClient

### ◇ **getPeers**

```
public Peer[] getPeers()
 throws java.io.IOException,
 net.ddp2p.ASN1.ASN1DecoderFail
```

Sends PeersQuery Request Receives PeersAnswer Response

Specified by:

getPeers in class GossipClient

Returns:

Known Peers

Throws:

java.io.IOException - Socket Write  
net.ddp2p.ASN1.ASN1DecoderFail - PeersAnswer Decoder

### ◇ **getPort**

```
public int getPort()
```

Specified by:

getPort in class GossipClient

### ◇ **getType**

```
public java.lang.String getType()
```

Specified by:

getType in class GossipClient

### ◇ **sendGossip**

```
public void sendGossip(java.lang.String message)
 throws java.security.NoSuchAlgorithmException,
 java.io.IOException
```

Specified by:

sendGossip in class GossipClient

Parameters:

## P2P Gossip System



message -

Throws:

java.security.NoSuchAlgorithmException - SHA-256

java.io.IOException - Socket Write

◇ **sendPeer**

```
public void sendPeer(java.lang.String name,
 java.lang.String ip,
 java.lang.String port)
 throws java.io.IOException
```

Specified by:

sendPeer in class GossipClient

Parameters:

name -

ip -

port -

Throws:

java.io.IOException - Socket Write



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edu.cse4232.gossip.client

## Class Client

- java.lang.Object
    - ◆ edu.cse4232.gossip.client.Client
  - All Implemented Interfaces:
    - java.lang.Runnable
- 

```
class
extends java.lang.Object
implements java.lang.Runnable
```

- ◆ **Field Summary**

| Modifier and Type                       | Field and Description    |
|-----------------------------------------|--------------------------|
| private <u>GossipClient</u>             | <u>client</u>            |
| private javax.swing.JLabel              | <u>connectionMessage</u> |
| private javax.swing.JButton             | <u>gossipButton</u>      |
| private javax.swing.JLabel              | <u>gossipLabel</u>       |
| private javax.swing.JPanel              | <u>gossipPanel</u>       |
| private javax.swing.JTextField          | <u>gossipTextField</u>   |
| private javax.swing.JPanel              | <u>innerGossipPanel</u>  |
| private javax.swing.JSplitPane          | <u>innerSplitPane</u>    |
| private javax.swing.JFormattedTextField | <u>ipTextField</u>       |
| private javax.swing.JPanel              | <u>mainPanel</u>         |
| private javax.swing.JTextField          | <u>nameTextField</u>     |
| private javax.swing.JSplitPane          | <u>outerSplitPane</u>    |
| private javax.swing.JButton             | <u>peerButton</u>        |
| private javax.swing.JLabel              | <u>peerLabel</u>         |
| private javax.swing.JPanel              | <u>peerPanel</u>         |
| private javax.swing.JList               | <u>peersList</u>         |
| private javax.swing.JPanel              | <u>peersPanel</u>        |
| private javax.swing.JScrollPane         | <u>peersScrollPane</u>   |
| private javax.swing.JFormattedTextField | <u>portTextField</u>     |

## P2P Gossip System

```
private javax.swing.JButton resetButton
private static int STATUS_TIMER
private javax.swing.JLabel statusMessage
private javax.swing.JPanel statusPanel
private static java.lang.String TITLE_ICON
```

### ◆ Constructor Summary

#### Modifier    Constructor and Description

```
private Client(GossipClient client)
```

### ◆ Method Summary

| Modifier and Type      | Method and Description                 |
|------------------------|----------------------------------------|
| javax.swing.JComponent | <u>\$\$\$getRootComponent\$\$\$()</u>  |
| private void           | <u>\$\$\$setupUI\$\$\$()</u>           |
| static void            | <u>main</u> (java.lang.String[] args)  |
| void                   | <u>run</u> ()<br>Client GUI            |
| private void           | <u>shutdown</u> ()<br>Used for logging |

◇

### Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

### • ◆ Field Detail

#### ◇ client

```
private final GossipClient client
```

#### ◇ connectionMessage

```
private javax.swing.JLabel connectionMessage
```

#### ◇ gossipButton

```
private javax.swing.JButton gossipButton
```

## P2P Gossip System

### ◇ gossipLabel

```
private javax.swing.JLabel gossipLabel
```

### ◇ gossipPanel

```
private javax.swing.JPanel gossipPanel
```

### ◇ gossipTextField

```
private javax.swing.JTextField gossipTextField
```

### ◇ innerGossipPanel

```
private javax.swing.JPanel innerGossipPanel
```

### ◇ innerSplitPane

```
private javax.swing.JSplitPane innerSplitPane
```

### ◇ ipTextField

```
private javax.swing.JFormattedTextField ipTextField
```

### ◇ mainPanel

```
private javax.swing.JPanel mainPanel
```

### ◇ nameTextField

```
private javax.swing.JTextField nameTextField
```

### ◇ outerSplitPane

```
private javax.swing.JSplitPane outerSplitPane
```

### ◇ peerButton

```
private javax.swing.JButton peerButton
```

### ◇ peerLabel

```
private javax.swing.JLabel peerLabel
```

### ◇ peerPanel

```
private javax.swing.JPanel peerPanel
```

### ◇ peersList

```
private javax.swing.JList peersList
```

### ◇ peersPanel

```
private javax.swing.JPanel peersPanel
```

### ◇ peersScrollPane

```
private javax.swing.JScrollPane peersScrollPane
```

### ◇ portTextField

```
private javax.swing.JFormattedTextField portTextField
```

## P2P Gossip System

### ◇ **resetButton**

```
private javax.swing.JButton resetButton
```

### ◇ **STATUS\_TIMER**

```
private static final int STATUS_TIMER
```

See Also:

[Constant Field Values](#)

### ◇ **statusMessage**

```
private javax.swing.JLabel statusMessage
```

### ◇ **statusPanel**

```
private javax.swing.JPanel statusPanel
```

### ◇ **TITLE\_ICON**

```
private static final java.lang.String TITLE_ICON
```

See Also:

[Constant Field Values](#)



## Constructor Detail

### ◇ **Client**

```
private Client(GossipClient client)
```

Parameters:

client - GossipClient



## Method Detail

### ◇ **\$\$\$getRootComponent\$\$\$**

```
public javax.swing.JComponent $$$getRootComponent$$$()
```

### ◇ **\$\$\$setupUI\$\$\$**

```
private void $$$setupUI$$$()
```

### ◇ **main**

```
public static void main(java.lang.String[] args)
```

Parameters:

args - -s [server ip] -p [server port] -T [TCP] -U [UDP] -I [Interactive]

## P2P Gossip System

### ◇ **run**

```
public void run()
```

Client GUI

Specified by:

run in interface `java.lang.Runnable`

### ◇ **shutdown**

```
private void shutdown()
```

Used for logging

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## Constant Field Values

### Contents

- [edu.cse4232.\\*](#)

### edu.cse4232.\*

- 

| Modifier and Type                     | Constant Field                      | Value           |
|---------------------------------------|-------------------------------------|-----------------|
| private static final int              | <a href="#"><u>STATUS_TIMER</u></a> | 20000           |
| private static final java.lang.String | <a href="#"><u>TITLE_ICON</u></a>   | "img/title.png" |

- 

#### Modifier and Type    Constant Field    Value

|                  |                                    |     |
|------------------|------------------------------------|-----|
| static final int | <a href="#"><u>PACKET_SIZE</u></a> | 512 |
| static final int | <a href="#"><u>TCP</u></a>         | 1   |
| static final int | <a href="#"><u>UDP</u></a>         | 0   |

- 

| Modifier and Type                    | Constant Field                | Value    |
|--------------------------------------|-------------------------------|----------|
| public static final java.lang.String | <a href="#"><u>DRIVER</u></a> | "driver" |
| public static final java.lang.String | <a href="#"><u>NOP</u></a>    | "nop"    |
| public static final java.lang.String | <a href="#"><u>RECV</u></a>   | "recv"   |
| public static final java.lang.String | <a href="#"><u>SENT</u></a>   | "sent"   |
| public static final java.lang.String | <a href="#"><u>SERVER</u></a> | "server" |
| public static final java.lang.String | <a href="#"><u>TCP</u></a>    | "tcp"    |
| public static final java.lang.String | <a href="#"><u>UDP</u></a>    | "udp"    |
| public static final java.lang.String | <a href="#"><u>WARN</u></a>   | "warn"   |

- 

#### Modifier and Type    Constant Field    Value

|                          |                                    |     |
|--------------------------|------------------------------------|-----|
| private static final int | <a href="#"><u>PACKET_SIZE</u></a> | 512 |
|--------------------------|------------------------------------|-----|

- 

| Modifier and Type            | Constant Field                    | Value |
|------------------------------|-----------------------------------|-------|
| private static final boolean | <a href="#"><u>APPEND</u></a>     | false |
| private static final boolean | <a href="#"><u>DEBUG_MODE</u></a> | true  |

## P2P Gossip System

```
private static final java.lang.String LOG_PATH "server.log"
public static final int PACKET_SIZE 512
public static final int TIME_OUT 20000
```

## P2P Gossip System

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\$ A B C D E F G H I L M N O P R S T U W

### \$

\$\$\$getRootComponent\$\$\$() - Method in class edu.cse4232.gossip.client.Client

\$\$\$setUpUI\$\$\$() - Method in class edu.cse4232.gossip.client.Client

### A

address - Variable in class edu.cse4232.gossip.client.UDPCClient

APPEND - Static variable in class edu.cse4232.gossip.server.Server

### B

broadcast(Peer[], Gossip) - Method in class edu.cse4232.gossip.context.Broadcaster

Updates Known Peers of New Gossip

Broadcaster - Class in edu.cse4232.gossip.context

Used by Server for One-Way Communication with Peers

Broadcaster() - Constructor for class edu.cse4232.gossip.context.Broadcaster

broadcaster - Variable in class edu.cse4232.gossip.context.Context

broadcaster - Variable in class edu.cse4232.gossip.context.ContextBuilder

broadcaster - Variable in class edu.cse4232.gossip.server.Responder

### C

Client - Class in edu.cse4232.gossip.client

Client(GossipClient) - Constructor for class edu.cse4232.gossip.client.Client

client - Variable in class edu.cse4232.gossip.client.Client

close() - Method in class edu.cse4232.gossip.client.GossipClient

close() - Method in class edu.cse4232.gossip.client.TCPClient

Closes I/O Streams and Socket Connection

close() - Method in class edu.cse4232.gossip.client.UDPCClient



## P2P Gossip System

Closes UDP Socket

close() - Method in class edu.cse4232.gossip.context.DataBaseHandler

Closes Database Connection

close() - Method in class edu.cse4232.gossip.context.Logger

Closes File Output Stream

close() - Method in class edu.cse4232.gossip.server.TCPResponder

Closes I/O Streams Closes TCP Socket

close() - Method in class edu.cse4232.gossip.server.UDPResponder

Closes UDP Socket

connection - Variable in class edu.cse4232.gossip.context.DataBaseHandler

connectionMessage - Variable in class edu.cse4232.gossip.client.Client

Context - Class in edu.cse4232.gossip.context

Holder for Server Assets

Context(DataBaseHandler, Broadcaster, Logger) - Constructor for class edu.cse4232.gossip.context.Context

context - Variable in class edu.cse4232.gossip.server.Server

ContextBuilder - Class in edu.cse4232.gossip.context

Builder for Server Context

ContextBuilder() - Constructor for class edu.cse4232.gossip.context.ContextBuilder

ContextException - Exception in edu.cse4232.gossip.context

Exception for Server Context

ContextException(String) - Constructor for exception edu.cse4232.gossip.context.ContextException

createContext() - Method in class edu.cse4232.gossip.context.ContextBuilder

## D

dataBaseHandler - Variable in class edu.cse4232.gossip.context.Context

dataBaseHandler - Variable in class edu.cse4232.gossip.context.ContextBuilder

DataBaseHandler - Class in edu.cse4232.gossip.context

Handles Server Database Connection

DataBaseHandler(String) - Constructor for class edu.cse4232.gossip.context.DataBaseHandler

dataBaseHandler - Variable in class edu.cse4232.gossip.server.Responder

DEBUG\_MODE - Static variable in class edu.cse4232.gossip.server.Server

debugMode - Variable in class edu.cse4232.gossip.context.Logger

decode(Decoder) - Method in class edu.cse4232.gossip.asn1.Gossip

## P2P Gossip System

decode(Decoder) - Method in class edu.cse4232.gossip.asn1.Leave

decode(Decoder) - Method in class edu.cse4232.gossip.asn1.Peer

decode(Decoder) - Method in class edu.cse4232.gossip.asn1.PeersAnswer

decode(Decoder) - Method in class edu.cse4232.gossip.asn1.PeersQuery

DRIVER - Static variable in class edu.cse4232.gossip.context.Logger

## E

edu.cse4232.gossip.asn1 - package edu.cse4232.gossip.asn1

ASN1 Encoding Objects

edu.cse4232.gossip.client - package edu.cse4232.gossip.client

Gossip Client Classes

edu.cse4232.gossip.context - package edu.cse4232.gossip.context

Server Context Classes

edu.cse4232.gossip.server - package edu.cse4232.gossip.server

Gossip Server Classes

enterRoom(boolean) - Method in class edu.cse4232.gossip.context.DataBaseHandler

First Writer Locks Room First Reader Locks Writers

exists(String) - Method in class edu.cse4232.gossip.context.DataBaseHandler

Tests for Duplicate Gossip Message

## F

fileOutputStream - Variable in class edu.cse4232.gossip.context.Logger

formatter - Static variable in class edu.cse4232.gossip.asn1.Gossip

## G

getBroadcaster() - Method in class edu.cse4232.gossip.context.Context

getBroadcaster() - Method in class edu.cse4232.gossip.server.Responder

getDataBaseHandler() - Method in class edu.cse4232.gossip.context.Context

getDataBaseHandler() - Method in class edu.cse4232.gossip.server.Responder

getEncoder() - Method in class edu.cse4232.gossip.asn1.Gossip

## P2P Gossip System

getEncoder() - Method in class edu.cse4232.gossip.asn1.Leave

getEncoder() - Method in class edu.cse4232.gossip.asn1.Peer

getEncoder() - Method in class edu.cse4232.gossip.asn1.PeersAnswer

getEncoder() - Method in class edu.cse4232.gossip.asn1.PeersQuery

getHost() - Method in class edu.cse4232.gossip.client.GossipClient

getHost() - Method in class edu.cse4232.gossip.client.TCPClient

getHost() - Method in class edu.cse4232.gossip.client.UDPClient

getIp() - Method in class edu.cse4232.gossip.asn1.Peer

getLogger() - Method in class edu.cse4232.gossip.context.Context

getLogger() - Method in class edu.cse4232.gossip.server.Responder

getMessage() - Method in class edu.cse4232.gossip.asn1.Gossip

getName() - Method in class edu.cse4232.gossip.asn1.Leave

getName() - Method in class edu.cse4232.gossip.asn1.Peer

getPeers() - Method in class edu.cse4232.gossip.asn1.PeersAnswer

getPeers() - Method in class edu.cse4232.gossip.client.GossipClient

getPeers() - Method in class edu.cse4232.gossip.client.TCPClient  
Sends PeersQuery Request Receives PeersAnswer Response

getPeers() - Method in class edu.cse4232.gossip.client.UDPClient  
Sends PeersQuery Request Receives PeersAnswer Response

getPort() - Method in class edu.cse4232.gossip.asn1.Peer

getPort() - Method in class edu.cse4232.gossip.client.GossipClient

getPort() - Method in class edu.cse4232.gossip.client.TCPClient

getPort() - Method in class edu.cse4232.gossip.client.UDPClient

getSha256hash() - Method in class edu.cse4232.gossip.asn1.Gossip

getTimestamp() - Method in class edu.cse4232.gossip.asn1.Gossip

getType() - Method in class edu.cse4232.gossip.client.GossipClient

getType() - Method in class edu.cse4232.gossip.client.TCPClient

## P2P Gossip System

getType() - Method in class edu.cse4232.gossip.client.UDPClient

Gossip - Class in edu.cse4232.gossip.asn1

[APPLICATION 1] EXPLICIT SEQUENCE {sha256hash OCTET STRING, timestamp GeneralizedTime, message UTF8String}

Gossip() - Constructor for class edu.cse4232.gossip.asn1.Gossip

Gossip(byte[], Calendar, String) - Constructor for class edu.cse4232.gossip.asn1.Gossip

gossipButton - Variable in class edu.cse4232.gossip.client.Client

GossipClient - Class in edu.cse4232.gossip.client

All Clients extend this abstract class

GossipClient() - Constructor for class edu.cse4232.gossip.client.GossipClient

GossipClientFactory - Class in edu.cse4232.gossip.client

Factory for Creating Clients

GossipClientFactory() - Constructor for class edu.cse4232.gossip.client.GossipClientFactory

gossipLabel - Variable in class edu.cse4232.gossip.client.Client

gossipPanel - Variable in class edu.cse4232.gossip.client.Client

gossipTextField - Variable in class edu.cse4232.gossip.client.Client

## H

handleGossip(Decoder) - Method in class edu.cse4232.gossip.server.Responder

Decodes Gossip Messages Inserts New Messages into Database Broadcasts New Gossip to Known Peers

handleLeave(Decoder) - Method in class edu.cse4232.gossip.server.Responder

Decodes Leave Messages Deletes Peer from Database

handlePeer(Decoder) - Method in class edu.cse4232.gossip.server.Responder

Decodes Peer Messages Upserts Peer into Database

handlePeersQuery() - Method in class edu.cse4232.gossip.server.Responder

Depends on Socket Type of Responder

handlePeersQuery() - Method in class edu.cse4232.gossip.server.TCPResponder

Selects Known Peers from Database Encodes New PeerAnswer Streams PeerAnswer to Client

handlePeersQuery() - Method in class edu.cse4232.gossip.server.UDPResponder

Selects Known Peers from Database Encodes New PeerAnswer Sends PeerAnswer Packet to Client

host - Variable in class edu.cse4232.gossip.client.TCPClient

host - Variable in class edu.cse4232.gossip.client.UDPClient

## P2P Gossip System

### I

innerGossipPanel - Variable in class edu.cse4232.gossip.client.Client

innerSplitPane - Variable in class edu.cse4232.gossip.client.Client

inputStream - Variable in class edu.cse4232.gossip.server.TCPResponder

inRoom - Variable in class edu.cse4232.gossip.context.DataBaseHandler

insertGossip(String, String, String) - Method in class edu.cse4232.gossip.context.DataBaseHandler

insertPeer(String, String, String) - Method in class edu.cse4232.gossip.context.DataBaseHandler

instance() - Method in class edu.cse4232.gossip.asn1.Peer

Used for creating sequences of type Peer

ip - Variable in class edu.cse4232.gossip.asn1.Peer

ipTextField - Variable in class edu.cse4232.gossip.client.Client

is - Variable in class edu.cse4232.gossip.client.TCPClient

### L

Leave - Class in edu.cse4232.gossip.asn1

[APPLICATION 4] EXPLICIT SEQUENCE {name UTF8String}

Leave() - Constructor for class edu.cse4232.gossip.asn1.Leave

leaveRoom(boolean) - Method in class edu.cse4232.gossip.context.DataBaseHandler

Writer Unlocks Room Last Reader Unlocks Room

leavestile - Variable in class edu.cse4232.gossip.context.DataBaseHandler

log(Exception) - Method in class edu.cse4232.gossip.context.Logger

log(String) - Method in class edu.cse4232.gossip.context.Logger

log(String, String, String, String) - Method in class edu.cse4232.gossip.context.Logger

LOG\_PATH - Static variable in class edu.cse4232.gossip.server.Server

logger - Variable in class edu.cse4232.gossip.context.Context

logger - Variable in class edu.cse4232.gossip.context.ContextBuilder

Logger - Class in edu.cse4232.gossip.context

Handles Server Logging

## P2P Gossip System

Logger(String, boolean, boolean) - Constructor for class edu.cse4232.gossip.context.Logger

logger - Variable in class edu.cse4232.gossip.server.Responder

## M

main(String[]) - Static method in class edu.cse4232.gossip.client.Client

main(String...) - Static method in class edu.cse4232.gossip.server.PeerWitness

main(String...) - Static method in class edu.cse4232.gossip.server.Server

mainPanel - Variable in class edu.cse4232.gossip.client.Client

makeClient(String, int, int) - Static method in class edu.cse4232.gossip.client.GossipClientFactory

Generates a new Client based on runtime information

message - Variable in class edu.cse4232.gossip.asn1.Gossip

## N

name - Variable in class edu.cse4232.gossip.asn1.Leave

name - Variable in class edu.cse4232.gossip.asn1.Peer

nameTextField - Variable in class edu.cse4232.gossip.client.Client

NOP - Static variable in class edu.cse4232.gossip.context.Logger

## O

os - Variable in class edu.cse4232.gossip.client.TCPClient

outerSplitPane - Variable in class edu.cse4232.gossip.client.Client

outputStream - Variable in class edu.cse4232.gossip.server.TCPResponder

## P

packet - Variable in class edu.cse4232.gossip.server.UDPResponder

## P2P Gossip System

PACKET\_SIZE - Static variable in class edu.cse4232.gossip.client.GossipClient

PACKET\_SIZE - Static variable in class edu.cse4232.gossip.server.PeerWitness

PACKET\_SIZE - Static variable in class edu.cse4232.gossip.server.Server

Peer - Class in edu.cse4232.gossip.asn1

[APPLICATION 2] IMPLICIT SEQUENCE {name UTF8String, port INTEGER, ip PrintableString}

Peer() - Constructor for class edu.cse4232.gossip.asn1.Peer

Peer(String, int, String) - Constructor for class edu.cse4232.gossip.asn1.Peer

peerButton - Variable in class edu.cse4232.gossip.client.Client

peerLabel - Variable in class edu.cse4232.gossip.client.Client

peerPanel - Variable in class edu.cse4232.gossip.client.Client

peers - Variable in class edu.cse4232.gossip.asn1.PeersAnswer

PeersAnswer - Class in edu.cse4232.gossip.asn1

[1] EXPLICIT SEQUENCE OF Peer

PeersAnswer() - Constructor for class edu.cse4232.gossip.asn1.PeersAnswer

PeersAnswer(Peer[]) - Constructor for class edu.cse4232.gossip.asn1.PeersAnswer

peersList - Variable in class edu.cse4232.gossip.client.Client

peersPanel - Variable in class edu.cse4232.gossip.client.Client

PeersQuery - Class in edu.cse4232.gossip.asn1

[APPLICATION 3] IMPLICIT NULL

PeersQuery() - Constructor for class edu.cse4232.gossip.asn1.PeersQuery

peersScrollPane - Variable in class edu.cse4232.gossip.client.Client

PeerWitness - Class in edu.cse4232.gossip.server

Notifies Server of Itself Receives New Gossip Messages

PeerWitness() - Constructor for class edu.cse4232.gossip.server.PeerWitness

port - Variable in class edu.cse4232.gossip.asn1.Peer

port - Variable in class edu.cse4232.gossip.client.TCPClient

port - Variable in class edu.cse4232.gossip.client.UDPClient

port - Variable in class edu.cse4232.gossip.server.Server

portTextField - Variable in class edu.cse4232.gossip.client.Client

## P2P Gossip System

### R

recreate() - Method in class edu.cse4232.gossip.context.DataBaseHandler

Drops All Tables Creates All Tables

RECV - Static variable in class edu.cse4232.gossip.context.Logger

removeUser(String) - Method in class edu.cse4232.gossip.context.DataBaseHandler

Deletes Peer on LEAVE Message

resetButton - Variable in class edu.cse4232.gossip.client.Client

Responder - Class in edu.cse4232.gossip.server

Base Class for UTP/TCP Responders

Responder(Context) - Constructor for class edu.cse4232.gossip.server.Responder

room - Variable in class edu.cse4232.gossip.context.DataBaseHandler

run() - Method in class edu.cse4232.gossip.client.Client

Client GUI

run() - Method in class edu.cse4232.gossip.server.Server

Creates 2 Server Threads (UDP, TCP) Listens for Clients Creates New Responder Thread for each Client

run() - Method in class edu.cse4232.gossip.server.TCPResponder

Serves Requests while Client Connection Open

run() - Method in class edu.cse4232.gossip.server.UDPResponder

Serves Individual UDP Packets

### S

selectPeers() - Method in class edu.cse4232.gossip.context.DataBaseHandler

sendGossip(String) - Method in class edu.cse4232.gossip.client.GossipClient

sendGossip(String) - Method in class edu.cse4232.gossip.client.TCPClient

sendGossip(String) - Method in class edu.cse4232.gossip.client.UDPClient

sendPeer(String, String, String) - Method in class edu.cse4232.gossip.client.GossipClient

sendPeer(String, String, String) - Method in class edu.cse4232.gossip.client.TCPClient

sendPeer(String, String, String) - Method in class edu.cse4232.gossip.client.UDPClient

SENT - Static variable in class edu.cse4232.gossip.context.Logger

SERVER - Static variable in class edu.cse4232.gossip.context.Logger



## P2P Gossip System

Server - Class in edu.cse4232.gossip.server

Gossip Server

Server(int, Context) - Constructor for class edu.cse4232.gossip.server.Server

setBroadcaster(Broadcaster) - Method in class edu.cse4232.gossip.context.ContextBuilder

setDataBaseHandler(DataBaseHandler) - Method in class edu.cse4232.gossip.context.ContextBuilder

setLogger(Logger) - Method in class edu.cse4232.gossip.context.ContextBuilder

sha256hash - Variable in class edu.cse4232.gossip.asn1.Gossip

shutdown() - Method in class edu.cse4232.gossip.client.Client

Used for logging

sock - Variable in class edu.cse4232.gossip.client.TCPClient

socket - Variable in class edu.cse4232.gossip.context.Broadcaster

socket - Variable in class edu.cse4232.gossip.server.TCPResponder

socket - Variable in class edu.cse4232.gossip.server.UDPResponder

STATUS\_TIMER - Static variable in class edu.cse4232.gossip.client.Client

statusMessage - Variable in class edu.cse4232.gossip.client.Client

statusPanel - Variable in class edu.cse4232.gossip.client.Client

## T

TAG - Static variable in class edu.cse4232.gossip.asn1.Gossip

TAG - Static variable in class edu.cse4232.gossip.asn1.Leave

TAG - Static variable in class edu.cse4232.gossip.asn1.Peer

TAG - Static variable in class edu.cse4232.gossip.asn1.PeersAnswer

TAG - Static variable in class edu.cse4232.gossip.asn1.PeersQuery

TCP - Static variable in class edu.cse4232.gossip.client.GossipClient

TCP - Static variable in class edu.cse4232.gossip.context.Logger

TCPClient - Class in edu.cse4232.gossip.client

TCP Client

## S

## P2P Gossip System

TCPClient(String, int) - Constructor for class edu.cse4232.gossip.client.TCPClient

TCPResponder - Class in edu.cse4232.gossip.server

Handles TCP Clients

TCPResponder(Socket, Context) - Constructor for class edu.cse4232.gossip.server.TCPResponder

TIME\_OUT - Static variable in class edu.cse4232.gossip.server.Server

timestamp - Variable in class edu.cse4232.gossip.asn1.Gossip

timestampToString(Calendar) - Static method in class edu.cse4232.gossip.asn1.Gossip

Utility Function for Timestamp Display

TITLE\_ICON - Static variable in class edu.cse4232.gossip.client.Client

toFancyString() - Method in class edu.cse4232.gossip.asn1.Peer

Used for Client GUI

toString() - Method in class edu.cse4232.gossip.asn1.Gossip

toString() - Method in class edu.cse4232.gossip.asn1.Leave

toString() - Method in class edu.cse4232.gossip.asn1.Peer

toString() - Method in class edu.cse4232.gossip.asn1.PeersAnswer

toString() - Method in class edu.cse4232.gossip.asn1.PeersQuery

turnstile - Variable in class edu.cse4232.gossip.context.DataBaseHandler

## U

UDP - Static variable in class edu.cse4232.gossip.client.GossipClient

UDP - Static variable in class edu.cse4232.gossip.context.Logger

UDPClient - Class in edu.cse4232.gossip.client

UDP Client

UDPClient(String, int) - Constructor for class edu.cse4232.gossip.client.UDPClient

UDPResponder - Class in edu.cse4232.gossip.server

Handles UDP Clients

UDPResponder(DatagramPacket, Context) - Constructor for class edu.cse4232.gossip.server.UDPResponder

udpSocket - Variable in class edu.cse4232.gossip.client.UDPClient

## W

WARN - Static variable in class edu.cse4232.gossip.context.Logger

\$ A B C D E F G H I L M N O P R S T U W