

Table1 The original class Database in ApacheHSQLDB

Original Class Database	
Attributes	Methods
sqlEnforceStrictSize	checkColumnIsInView(String, String)
urlProperties	classLoader
userManager	clearStructures()
CLOSEMODE_COMPACT	close(int)
CLOSEMODE_IMMEDIATELY	connect(String, String)
CLOSEMODE_NORMAL	dropIndex(Session, String, String, boolean)
CLOSEMODE_SCRIPT	dropTrigger(Session, String)
DATABASE_CLOSING	finalize()
DATABASE_ONLINE	findUserTableForIndex(Session, String)
DATABASE_OPENING	firstIdentity
DATABASE_SHUTDOWN	getAliasMap()
bIgnoreCase	getJavaName(String)
bReferentialIntegrity	getPath()
databaseID	getProperties()
databaseProperties	getSessionManager()
databaseReadOnly	getState()
dbState	getStateString()
filesInJar	getTable(Session, String)
filesReadOnly	getTableIndex(Table)
compiledStatementManager	getType()
hAlias	getURI()
logger	getUserManager()
sName	getUserTable(Session, String)
sPath	getViewsWithSequence(NumberSequence)
sType	getViewsWithTable(String, String)
sessionManager	getViewsWithView(View)
	isFilesInJar()
	isFilesReadOnly()
	isIgnoreCase()
	isReferentialIntegrity()
	isShutdown()
	linkTable(Table)
	nameManager
	open()
	recompileViews(String)
	removeExportedKeys(Table)
	reopen()
	setFilesReadOnly()
	setIgnoreCase(boolean)
	setMetaDirty(boolean)
	setReadOnly()

	setReferentialIntegrity(boolean) setState(int)
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Table2 The new classes extracted by developers

Class Extracted by the Developers - 1	
Attributes	Methods
firstIdentity bIgnoreCase bReferentialIntegrity databaseProperties hAlias userManager nameManager sessionManager compiledStatementManager DATABASE_ONLINE DATABASE_OPENING DATABASE_CLOSING DATABASE_SHUTDOWN CLOSEMODE_IMMEDIATELY CLOSEMODE_NORMAL CLOSEMODE_COMPACT CLOSEMODE_SCRIPT databaseID sType sName urlProperties sPath classLoader dbState logger databaseReadOnly filesReadOnly filesInJar sqlEnforceStrictSize	open() reopen() clearStructures() getType() getPath() getProperties() getSessionManager() isShutdown() connect(String username, String password) setReadOnly() setFilesReadOnly() isFilesReadOnly() isFilesInJar() getUserManager() setReferentialIntegrity(ref) isReferentialIntegrity() getAliasMap() getJavaName(String s) setIgnoreCase(b) isIgnoreCase() finalize() close(closemode) setMetaDirty(resetPrepared) setState(state) getState() getStateString() getURI()
Class Extracted by the Developers - 2	
Attributes	Methods
Variables	getTable(Session, String) getUserTable(Session, String) linkTable(Table t) findUserTableForIndex(Session, String) getTableIndex(Table) dropIndex(Session, String, StringName, boolean) checkColumnIsInView(String, String) getViewsWithView(View)

	getViewsWithTable(String, String) getViewsWithSequence(NumberSequence) recompileViews(String) removeExportedKeys(Table) dropTrigger(Session, String)
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Table3 The new classes extracted by our approach

Class Extracted our approach - 1	
Attributes	Methods
	checkColumnIsInView(String, String) recompileViews(String) getTableIndex(Table) getViewsWithTable(String, String) getViewsWithSequence(NumberSequence) getViewsWithView(View) linkTable(Table) removeExportedKeys(Table)
Class Extracted our approach - 2	
Attributes	Methods
firstIdentity sqlEnforceStrictSize nameManager dbState logger filesInJar filesReadOnly classLoader bReferentialIntegrity compiledStatementManager databaseProperties urlProperties sName sPath databaseID sType sessionManager userManager hAlias CLOSEMODE_COMPACT CLOSEMODE_IMMEDIATELY CLOSEMODE_NORMAL CLOSEMODE_SCRIPT DATABASE_CLOSING DATABASE_ONLINE DATABASE_OPENING	setMetaDirty(boolean) isFilesReadOnly() setFilesReadOnly() setReadOnly() connect(String, String) isFilesInJar() close(int) open() dropTrigger(Session, String) getState() isShutdown() clearStructures() reopen() setState(int) getURI() getPath() getType() getSessionManager() getUserManager() getAliasMap() getJavaName(String)

DATABASE_SHUTDOWN	
Class Extracted our approach - 3	
Attributes	Methods
	getTable(Session, String) getUserTable(Session, String) dropIndex(Session, String, String, boolean) findUserTableForIndex(Session, String)