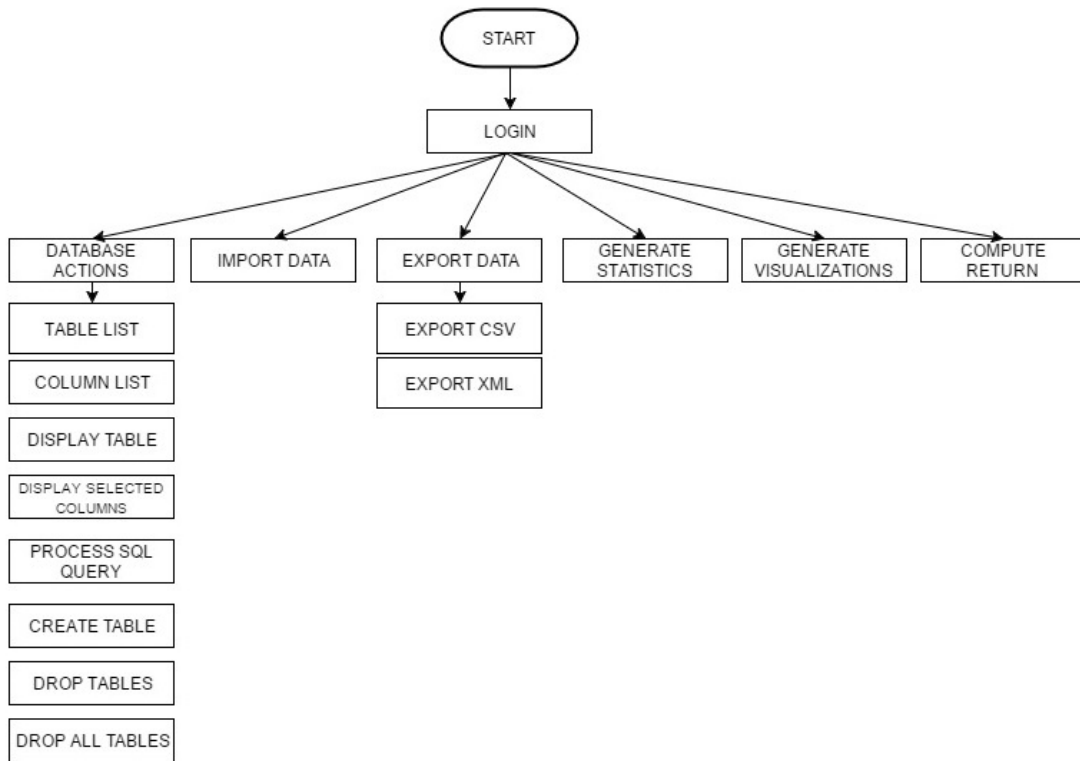


PROGRAMMER'S DOCUMENTATION

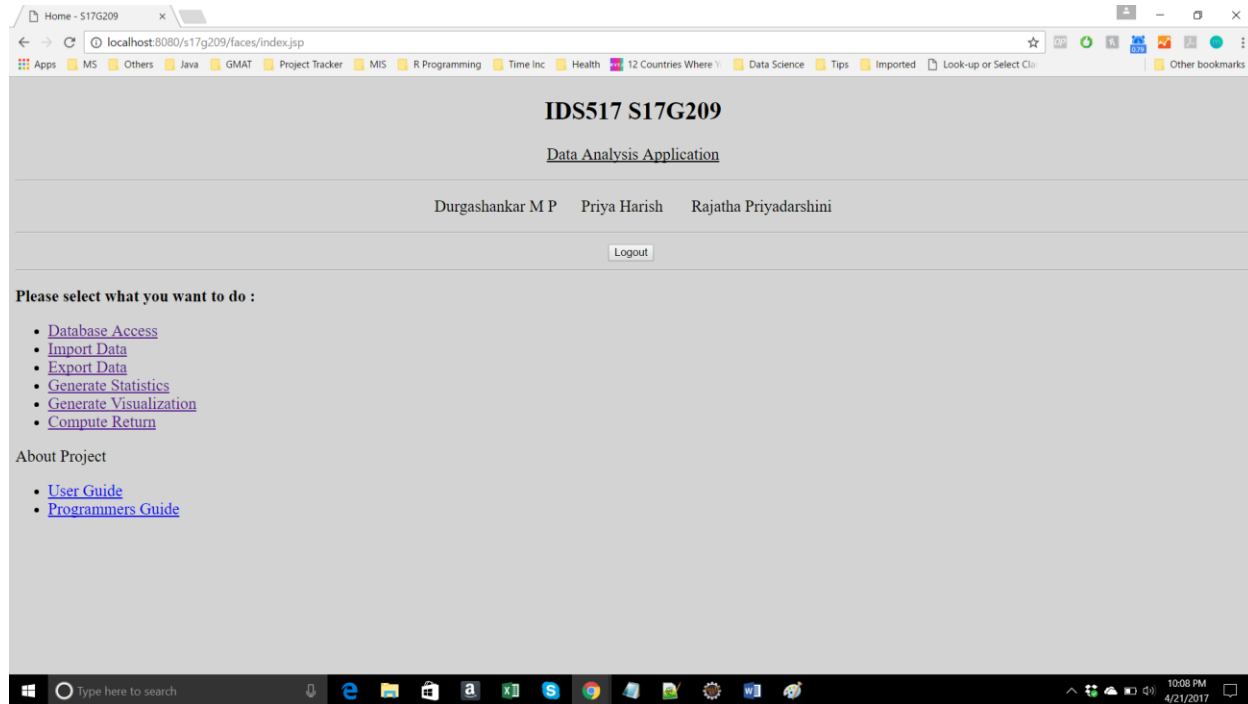
FLOW CHART



Login Page

The screenshot shows a web browser window with the address bar displaying 'localhost:8080/s17g209/faces/logout.jsp'. The browser's bookmark bar contains various links such as 'MS', 'Others', 'Java', 'GMAT', 'Project Tracker', 'MIS', 'R Programming', 'Time Inc', 'Health', '12 Countries Where Y', 'Data Science', 'Tips', 'Imported', 'Look-up or Select Cl', and 'Other bookmarks'. The main content area of the browser displays the 'IDS517 S17G209' login page. The page has a header with the title 'IDS517 S17G209' and the subtitle 'Data Analysis Application'. Below the header, the names of the users are listed: 'Durgashankar M P', 'Priya Harish', and 'Rajatha Priyadarshini'. The login form consists of several fields: 'Username:*' (with the value 'f16gnoox'), 'Password:*' (with masked characters), 'DB Host:*' (with the value 'localhost'), 'DB Schema:' (with a dropdown menu), 'DBMS:*' (with a dropdown menu showing 'MySQL', 'DB2', and 'Oracle'), and 'DB Port:' (with a red asterisk indicating it is a required field). A 'Login' button is located at the bottom of the form. The Windows taskbar at the bottom of the screen shows the search bar and various application icons, with the system clock indicating 10:11 PM on 4/21/2017.

Menu Page



The screenshot shows a web browser window with the URL `localhost:8080/s17g209/faces/index.jsp`. The page title is "IDS517 S17G209" and the subtitle is "Data Analysis Application". The page is authored by Durgashankar M P, Priya Harish, and Rajatha Priyadarshini. A "Logout" button is visible. The main content area prompts the user to "Please select what you want to do :" and lists several options: Database Access, Import Data, Export Data, Generate Statistics, Generate Visualization, and Compute Return. Below this, there is an "About Project" section with links to the User Guide and Programmers Guide.

IDS517 S17G209

Data Analysis Application

Durgashankar M P Priya Harish Rajatha Priyadarshini

Logout

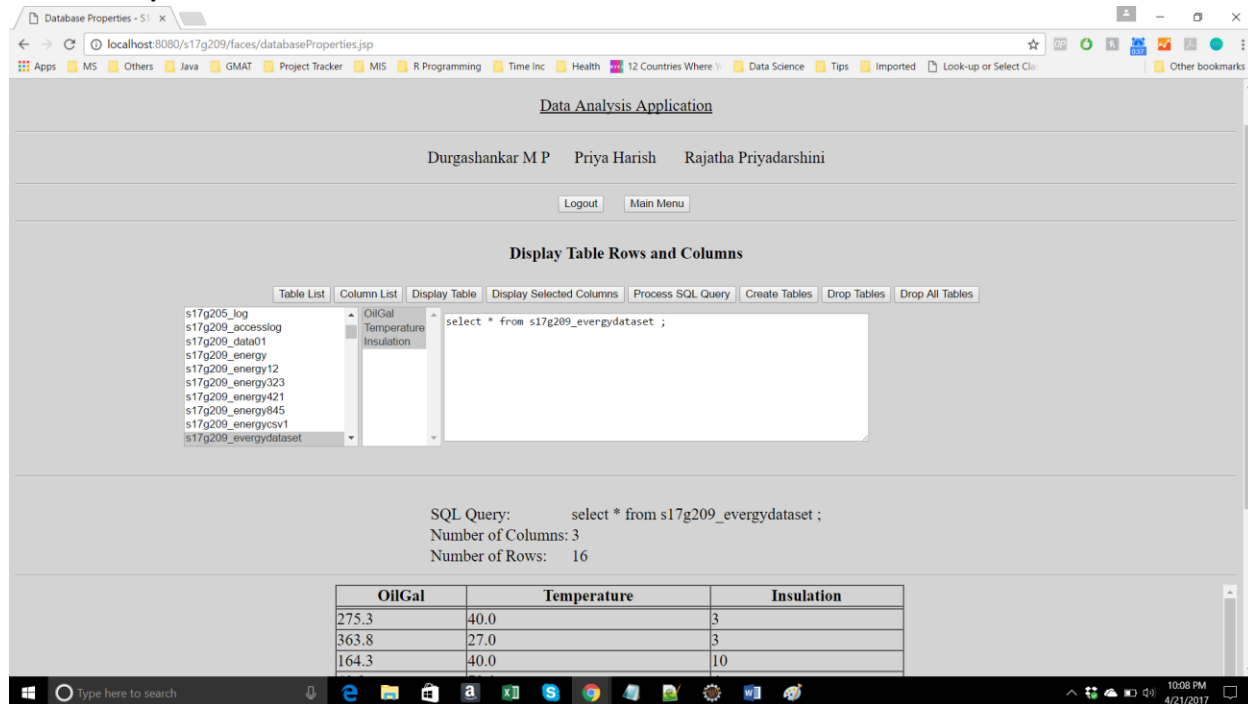
Please select what you want to do :

- Database Access
- Import Data
- Export Data
- Generate Statistics
- Generate Visualization
- Compute Return

About Project

- User Guide
- Programmers Guide

Database Operations



The screenshot shows the "Database Properties - S17G209" page in the web browser. The page title is "Data Analysis Application" and the subtitle is "Data Analysis Application". The page is authored by Durgashankar M P, Priya Harish, and Rajatha Priyadarshini. A "Logout" button and a "Main Menu" button are visible. The main content area is titled "Display Table Rows and Columns" and contains a table list, a column list, and a SQL query editor. The table list shows the selected table "s17g209_evergydataset". The column list shows the selected columns "OilGal", "Temperature", and "Insulation". The SQL query editor contains the query "select * from s17g209_evergydataset ;". Below the query editor, the SQL query is displayed, along with the number of columns (3) and the number of rows (16). A table showing the first three rows of data is displayed at the bottom.

Data Analysis Application

Durgashankar M P Priya Harish Rajatha Priyadarshini

Logout Main Menu

Display Table Rows and Columns

Table List Column List Display Table Display Selected Columns Process SQL Query Create Tables Drop Tables Drop All Tables

s17g205_log
s17g209_accesslog
s17g209_data01
s17g209_energy
s17g209_energy12
s17g209_energy323
s17g209_energy421
s17g209_energy845
s17g209_energycsv1
s17g209_evergydataset

OilGal
Temperature
Insulation

select * from s17g209_evergydataset ;

SQL Query: select * from s17g209_evergydataset ;
Number of Columns: 3
Number of Rows: 16

OilGal	Temperature	Insulation
275.3	40.0	3
363.8	27.0	3
164.3	40.0	10

Import Page

Database Properties - S1 x

localhost:8080/s17g209/faces/importFile.jsp

IDS517 S17G209

Data Analysis Application

Durgashankar M P Priya Harish Rajatha Priyadarshini

Logout Main Menu

Import File

Error in Inserting DataSet to the Database

File : Choose File No file chosen

file label: energy112

Header: Yes No

File type: Metadata Data Other

File format: Tab CSV Text

Submit

Number of records: 4

Number of columns: 0

fileLabel: energy112

10:09 PM 4/21/2017

Export Page

Database Properties - S1 x

localhost:8080/s17g209/faces/exportFile.jsp

IDS517 S17G209

Data Analysis Application

Durgashankar M P Priya Harish Rajatha Priyadarshini

Logout Main Menu

Export Data

Export CSV Export XML

s17g204_accesslog
s17g204_xtest
s17g204_xtest2
s17g205_log
s17g209_accesslog
s17g209_data01
s17g209_energy
s17g209_energy12
s17g209_energy323
s17g209_energy421

10:10 PM 4/21/2017

Statistical Analysis

Generate Statistics - S17g209

localhost:8080/s17g209/faces/generateStatistics.jsp

AppsMSOthersJavaGMATProject TrackerMISR ProgrammingTime IncHealth12 Countries WhereData ScienceTipsImportedLook-up or Select ClOther bookmarks

IDS517 S17G209

[Data Analysis Application](#)

Durgashankar M P Priya Harish Rajatha Priyadarshini

LogoutMain Menu

Data Statistics

DataSet ListField ListDescriptive StatisticsGet Predictor and Response Variables for Regression AnalysisGenerate Regression Report

s17g205_log
s17g209_accesslog
s17g209_data01
s17g209_energy
s17g209_energy12
s17g209_energy323
s17g209_energy421
s17g209_energy845
s17g209_energycsv1
s17g209_evergydataset

OilGal
Temperature
Insulation

dataset	variable	numberObs	minValue	q1	median	q3	maxValue	mean	variance	standardDeviation	iqr	range
s17g209_evergydataset	Temperature	16	0.0	21.5	39.0	61.75	73.0	37.75	500.46666666666664	22.37111232519891	40.25	73.0

Type here to search10:10 PM 4/21/2017

Data Visualizations

Generate Statistics - S17g209

localhost:8080/s17g209/faces/generateStatistics.jsp

AppsMSOthersJavaGMATProject TrackerMISR ProgrammingTime IncHealth12 Countries WhereData ScienceTipsImportedLook-up or Select ClOther bookmarks

IDS517 S17G209

[Data Analysis Application](#)

Durgashankar M P Priya Harish Rajatha Priyadarshini

LogoutMain Menu

Data Statistics

DataSet ListField ListDescriptive StatisticsGet Predictor and Response Variables for Regression AnalysisGenerate Regression Report

s17g205_log
s17g209_accesslog
s17g209_data01
s17g209_energy
s17g209_energy12
s17g209_energy323
s17g209_energy421
s17g209_energy845
s17g209_energycsv1
s17g209_evergydataset

OilGal
Temperature
Insulation

dataset	variable	numberObs	minValue	q1	median	q3	maxValue	mean	variance	standardDeviation	iqr	range
s17g209_evergydataset	Temperature	16	0.0	21.5	39.0	61.75	73.0	37.75	500.46666666666664	22.37111232519891	40.25	73.0

Type here to search10:10 PM 4/21/2017

Compute Returns

Compute Return

localhost:8080/s17g209/faces/computereturn.jsp

AppsMSOthersJavaGMATProject TrackerMISR ProgrammingTime IncHealth12 Countries WhereData ScienceTipsImportedLook-up or Select ClOther bookmarks

IDS517 S17G209

[Data Analysis Application](#)

Durgashankar M P Priya Harish Rajatha Priyadarshini

Logout

Main Menu

Compute Returns

Table List

Column List

s17g209_log
s17g209_meta000
s17g209_meta0001
s17g209_metadata12345
s17g209_stock998
s17g209_stock_111
s17g209_stock_356
s17g209_stock_359
s17g209_stock_88
s17g209_stock_999

TRANS_DATE
DIA
SPY
QQQ
GM
MSFT
R_DIA
R_SPY
R_QQQ
R_GM

TRANS_DATE
DIA
SPY
QQQ
GM
MSFT
R_DIA
R_SPY
R_QQQ
R_GM

Compute Returns

Type here to search

10:11 PM
4/21/2017

Logout Page

Logout - S17G209

localhost:8080/s17g209/faces/computereturn.jsp

AppsMSOthersJavaGMATProject TrackerMISR ProgrammingTime IncHealth12 Countries WhereData ScienceTipsImportedLook-up or Select ClOther bookmarks

IDS517 S17G209

[Data Analysis Application](#)

Durgashankar M P Priya Harish Rajatha Priyadarshini

Login

Thank you for visiting! Have a good day!

Type here to search

10:11 PM
4/21/2017

<<Java Class>>	
ActionBeanAnalysis edu.uic.ids517.model	
<ul style="list-style-type: none"> renderChart: boolean facesContext: FacesContext chartType: String dbAccessActionBean: DbAccessActionBean tableName: String dbAccessBean: DbAccessBean resultSet: ResultSet xyChartPath: String xySeriesChart: boolean columnNameSelected: String resultSetMetaData: ResultSetMetaData pieDataset: DefaultPieDataset categoryDataset: DefaultCategoryDataset pieChartPath: String barChartPath: String predictorValue: String responseValue: String renderPieChart: boolean messagesBean: MessagesBean path: String statisticsActionBean: StatisticsActionBean dbInformationBean: DbInformationBean columnNames: List<String> tableInListColumn: String queryRendered: boolean columnListRendered: boolean tableViewList: List<String> tableListRendered: boolean renderBarChart: boolean renderScatterPlot: boolean renderScatterPlotLine: boolean scatterChartPath: String scatterChartPathLine: String renderRegressionColumns: boolean 	
<ul style="list-style-type: none"> ActionBeanAnalysis() isRenderScatterPlotLine():boolean setRenderScatterPlotLine(boolean):void init():void listTables():String getColumnNames():List<String> setColumnNames(List<String>):void getTableInListColumn():String setTableInListColumn(String):void isQueryRendered():boolean setQueryRendered(boolean):void isColumnListRendered():boolean isRenderRegressionColumn():boolean setRenderRegressionColumn(boolean):void setColumnListRendered(boolean):void getTableViewList():List<String> setTableViewList(List<String>):void isTableListRendered():boolean setTableListRendered(boolean):void listColumns():String isRenderRegressionColumns():boolean setRenderRegressionColumns(boolean):void processGraphicQuery():String getDbAccessBean():DbAccessBean setDbAccessBean(DbAccessBean):void getPredictorValue():String setPredictorValue(String):void getResponseValue():String setResponseValue(String):void getBarChartPath():String isRenderScatterPlot():boolean setRenderScatterPlot(boolean):void getScatterChartPath():String getScatterChartPathLine():String setScatterChartPathLine(String):void setScatterChartPath(String):void setBarChartPath(String):void isRenderBarChart():boolean setRenderBarChart(boolean):void setPieChartPath(String):void isRenderPieChart():boolean isRenderChart():boolean setRenderChart(boolean):void getChartType():String setChartType(String):void getColumnNameSelected():String setColumnNameSelected(String):void getPieDataset():DefaultPieDataset setPieDataset(DefaultPieDataset):void getPieChartPath():String setRenderPieChart(boolean):void getTableName():String setTableName(String):void resetMessage():String 	

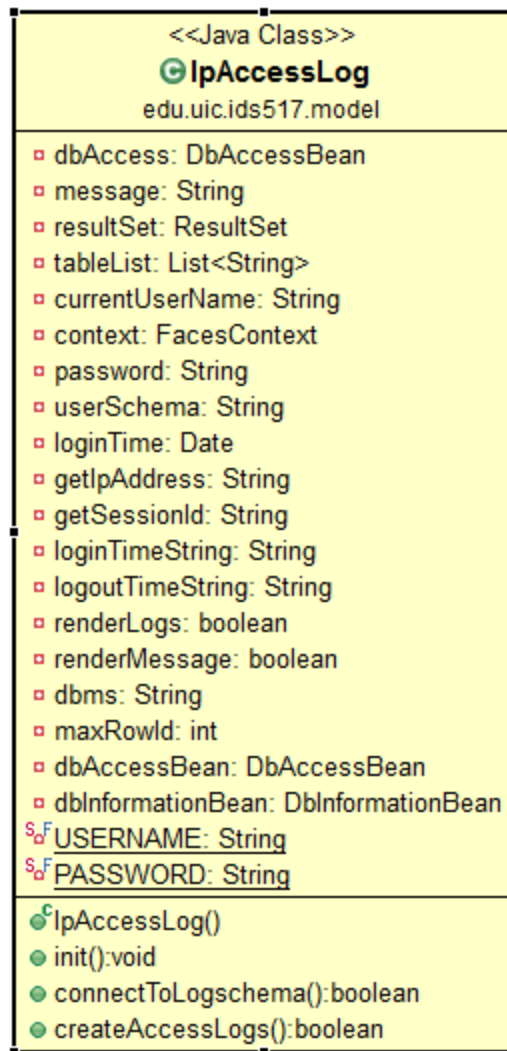
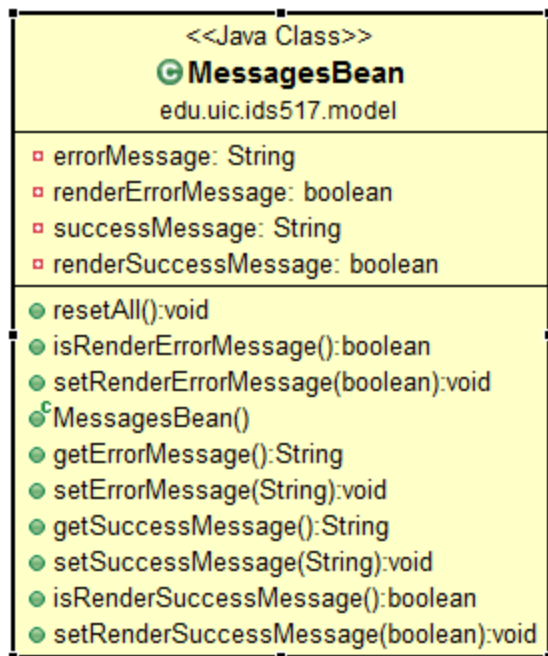
<<Java Class>>	
DbAccessActionBean edu.uic.ids517.model	
<ul style="list-style-type: none"> tableName: String sqlQuery: String noOfCols: int noOfRows: int result: Result tableInListColumn: String context: FacesContext columnNames: List<String> tableViewList: List<String> columnNamesSelected: List<String> tableListRendered: boolean columnListRendered: boolean queryRendered: boolean dbAccessBean: DbAccessBean dbInformationBean: DbInformationBean messagesBean: MessagesBean createDropTableNames: List<String> status: String resultSet: ResultSet 	
<ul style="list-style-type: none"> DbAccessActionBean() getCreateDropTableNames():List<String> setCreateDropTableNames(List<String>):void init():void getTableName():String setTableName(String):void getSqlQuery():String setSqlQuery(String):void getNoOfCols():int getNoOfRows():int isColumnListRendered():boolean isQueryRendered():boolean isTableListRendered():boolean getColumnNamesSelected():List<String> setColumnNamesSelected(List<String>):void getResult():Result getColumnNames():List<String> setColumnNames(List<String>):void getTableViewList():List<String> createAccesslog():boolean createTransactionlog():boolean listTables():String listColumns():String exportCSV():String exportXML():String selectAllColumn():String selectParticularColumn():String dropAllTables():String dropTables():String processSQLQuery():String logout():String resetMessage():String 	

<<Java Class>>	
ActionBeanComputeReturns edu.uic.ids517.model	
<ul style="list-style-type: none"> context: FacesContext messagesBean: MessagesBean tableViewList: List<String> tableNameSelected: String sourceData: List<String> destinationData: List<String> dbAccessBean: DbAccessBean resultSet: ResultSet tableListRendered: boolean columnNamesTable: List<String> source: String destination: String 	
<ul style="list-style-type: none"> ActionBeanComputeReturns() init():void listTables():String displayColumns():String computeReturns():String getContext():FacesContext setContext(FacesContext):void getMessageBean():MessagesBean setMessageBean(MessagesBean):void getTableViewList():List<String> setTableViewList(List<String>):void getTableNameSelected():String setTableNameSelected(String):void getSourceData():List<String> setSourceData(List<String>):void getDestinationData():List<String> setDestinationData(List<String>):void getDbAccessBean():DbAccessBean setDbAccessBean(DbAccessBean):void getResultSet():ResultSet setResultSet(ResultSet):void isTableListRendered():boolean setTableListRendered(boolean):void getColumnNamesTable():List<String> setColumnNamesTable(List<String>):void getDestination():String setDestination(String):void getSource():String setSource(String):void resetMessage():String 	

<<Java Class>> DbAccessBean edu.uic.ids517.model	
▫ connection: Connection ▫ databaseMetaData: DatabaseMetaData ▫ statement: Statement ▫ resultSetMetaData: ResultSetMetaData ▫ columnNamesSelected: List<String> ▫ context: FacesContext ▫ jdbcDriver: String ▫ url: String ▫ dbInformationBean: DbInformationBean %F MY_SQL: String %F DB2: String %F ORACLE: String ▫ message: String %F ACCESS_DENIED: String %F INVALID_DB_SCHEMA: String %F TIMEOUT: String ▫ resultSet: ResultSet %F TABLE_TYPES: String[] ▫ numOfCols: int ▫ numOfRows: int ▫ result: Result ▫ changedRows: int ▫ loginTime: Timestamp ▲ session: HttpSession ▲ sessionId: String ▲ request: HttpServletRequest ▲ ipAddress: String ▫ errorMessage: String	
● getColumnNamesSelected():List<String> ● setColumnNamesSelected(List<String>):void ● getChangedRows():int ● setChangedRows(int):void ● getErrorMessage():String ● setErrorMessage(String):void ● DbAccessBean() ● init():void ● executequeryList(String):List<String> ● connectToDb():String ● getLoginTime():Timestamp ● setLoginTime(Timestamp):void ● retriveAccessLog(String):boolean ● transactionLog(String):boolean ● tableList():List<String> ● columnList(String):List<String> ● close():void ● execute(String):String ● processQuery(String):String ● processSelect(String):ResultSet ● getColumnNames(String):ResultSet ■ getColumnNames():void ● generateResult():void ● getResultSet():ResultSet ● getConnection():Connection ● getMessage():String ● getNumberOfCols():int ● getNumberOfRows():int ● getResult():Result	

<<Java Class>> DbInformationBean edu.uic.ids517.model	
▫ userName: String ▫ password: String ▫ dbmsHost: String ▫ dbmsSchema: String ▫ dbms: String ▫ dbmsPort: String	
● DbInformationBean() ● getUsername():String ● setUsername(String):void ● getPassword():String ● setPassword(String):void ● getDbmsHost():String ● setDbmsHost(String):void ● getDbmsSchema():String ● setDbmsSchema(String):void ● getDbms():String ● setDbms(String):void ● getDbmsPort():String ● setDbmsPort(String):void	

<<Java Class>> FileImportBean edu.uic.ids517.model	
▫ messagesBean: MessagesBean ▫ uploadedFile: UploadedFile ▫ fileLabel: String ▫ fileName: String ▫ fileSize: long ▫ fileType: String ▫ numberOfRows: int ▫ numberOfColumns: int ▫ uploadedFileContents: String ▫ fileImport: boolean ▫ fileImportError: boolean ▫ filePath: String ▫ tempFileName: String ▫ tempFile: String ▫ header: String ▫ fileType: String ▫ fileFormat: String ▫ facesContext: FacesContext ▫ dbAccessBean: DbAccessBean ▫ connection: Connection ▫ preparedStatement: PreparedStatement	
● FileImportBean() ● init():void ● processFileUpload():String ● createTable(String,ArrayList<String[]>):boolean ● insertIntoTable(String,ArrayList<String[]>):boolean ● getMessageBean():MessagesBean ● setMessageBean(MessagesBean):void ● processFile():String ● getUploadedFile():UploadedFile ● setUploadedFile(UploadedFile):void ● getFileLabel():String ● setFileLabel(String):void ● getFileName():String ● setFileName(String):void ● getFileSize():long ● setFileSize(long):void ● getFileContentType():String ● setFileContentType(String):void ● getNumberOfRows():int ● setNumberOfRows(int):void ● getNumberOfColumns():int ● setNumberOfColumns(int):void ● getUploadedFileContents():String ● setUploadedFileContents(String):void ● isFileImport():boolean ● setFileImport(boolean):void ● isFileImportError():boolean ● getMessageBean():MessagesBean ● setMessageBean(MessagesBean):void ● setFileImportError(boolean):void ● getFilePath():String ● setFilePath(String):void ● getTempFileName():String ● setTempFileName(String):void ● getFacesContext():FacesContext ● getHeader():String ● setHeader(String):void ● getFileType():String ● setFileType(String):void ● getFileFormat():String ● setFileFormat(String):void ● setFacesContext(FacesContext):void ● resetMessage():String	




```

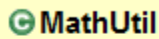
<<Java Class>>
@StatisticsActionBean
edu.uic.ids517.model

+descriptiveStatisticsBean: StatisticsBean
+dmhBean: DmInformationBean
+dataset: XYDataset
+renderRegButton: boolean
+descripButton: boolean
+plotButton: boolean
+statisticsBeanList: List<StatisticsBean>
+columnNames: List<String>
+descStats: String[]
+actionBeanFile: FileportBean
+renderStats: boolean
+renderRegression: boolean
+message: String
+columnRender: boolean
+renderSchema: boolean
+buttonDisable: boolean
+renderMessage: boolean
+renderReport: boolean
+renderTableData: boolean
+renderTableName: boolean
+renderRegressionColumn: boolean
+renderRegressionButton: boolean
+renderColumnListButton: boolean
+renderRegressionResult: boolean
+numericData: List<String>
+categoricalData: List<String>
+columnSelected: List<String>
+columnList: List<String>
+tableList: List<String>
+columns: List<String>
+list: List<String>
+resultSet: ResultSet
+predictorValue: String
+responseValue: String
+xySeriesVariable: XYSeriesCollection
+xyTimeSeriesCollection: XYSeriesCollection
+predictorSeries: XYSeries
+responseSeries: XYSeries
+xySeries: XYSeries
+xySeriesVariables: XYSeriesCollection
+resultSetMetadata: ResultSetMetadata
+regressionAnalysisManagedBean: RegressionAnalysisManagedBean
+numberOfObs: int
+columnNamesSelected: List<String>
+context: FacesContext
+dbAccessBean: DBAccessBean
+tableViewList: List<String>
+myTableList: List<String>
+tableListRendered: boolean
+tableNameSelected: String
+tableListColumn: String
+queryRendered: boolean
+query: String
+columnListRendered: boolean
+columnNamesTable: List<String>

+renderRegButton() boolean
+renderPlotButton() boolean
+renderRegButton(bean) void
+renderDescriptiveButton(bean) void
+renderDescriptiveButton() boolean
+renderDescriptiveButton(bean) void
+renderDescriptiveStatisticsBean(StatisticsBean) void
+getXYDataset() XYDataset
+getXYDataset(XYDataset) void
+getDmhBean() DmInformationBean
+getDmhBean(DmInformationBean) void
+getDescriptiveStatisticsBean() StatisticsBean
+getStatisticsBean(StatisticsBean) void
+getStatisticsBeanList() List<StatisticsBean>
+getStatisticsBeanList(List<StatisticsBean>) void
+getMessage() String
+setMessage(String) void
+getRegressionAnalysisManagedBean() RegressionAnalysisManagedBean
+getRegressionAnalysisManagedBean(RegressionAnalysisManagedBean) void
+getXYSeriesVariable() XYSeriesCollection
+getXYSeriesVariable(XYSeriesCollection) void
+getXYTimeSeriesCollection() XYSeriesCollection
+getXYTimeSeriesCollection(XYSeriesCollection) void
+getXYSeriesVariables() XYSeriesCollection
+getXYSeriesVariables(XYSeriesCollection) void
+getResultSetMetadata() ResultSetMetadata
+getResultSetMetadata(ResultSetMetadata) void
+getColumnList() List<String>
+getColumnList(List<String>) void
+getPredictorValue() String
+setPredictorValue(String) void
+getResponseValue() String
+getResponseValue(String) void
+isColumnRender() boolean
+isColumnRender(bean) void
+isButtonDisabled() boolean
+isButtonDisable(bean) void
+isRenderSchema() boolean
+isRenderSchema(bean) void
+isRenderMessage() boolean
+isRenderMessage(bean) void
+isRenderReport() boolean
+isRenderReport(bean) void
+isRenderTableData() boolean
+isRenderTableData(bean) void
+isRenderTableName() boolean
+isRenderTableName(bean) void
+isRenderRegressionColumn() boolean
+isRenderRegressionColumn(bean) void
+isRenderRegressionButton() boolean
+isRenderRegressionButton(bean) void
+isRenderColumnListButton() boolean
+isRenderColumnListButton(bean) void
+isRenderRegressionResult() boolean
+isRenderRegressionResult(bean) void
+getColumnNamesSelected() List<String>
+getColumnNamesSelected(List<String>) void
+getMyTableList() List<String>
+getMyTableList(List<String>) void
+getTableNamesSelected() String
+setTableNameSelected(String) void
+getColumnNamesTable() List<String>
+setColumnNamesTable(List<String>) void
+getNumberOfObs() int
+setNumberOfObs(int) void
+getColumnNames() List<String>
+setColumnNames(List<String>) void
+getDescriptor() String[]
+setDescriptor(String[]) void
+getActionBeanFile() FileportBean
+setActionBeanFile(FileportBean) void
+isRenderStats() boolean
+isRenderStats(bean) void
+isRenderRegression() boolean
+isRenderRegression(bean) void
+getCategoricalData() List<String>
+setCategoricalData(List<String>) void
+getNumericData() List<String>
+setNumericData(List<String>) void
+getResultSet() ResultSet
+setResultSet(ResultSet) void
+getStatisticsActionBean()
+set() void
+getTable() String
+renderTableList() void
+setTable() String
+listColumns() String
+generateDescriptiveStatistics() String
+set() void
+displayColumnsRegressions() String
+getRegressionsColumnNames() String
+generateRegressionsColumn() boolean
+generateRegressionsReport() String
+isRenderButton() boolean
+calculateRegressionVariables() boolean
+getContext() FacesContext
+setContext() FacesContext void
+getDbAccessBean() DBAccessBean
+isDbAccessBean(DBAccessBean) void
+getTableViewList() List<String>
+setTableViewList(List<String>) void
+tableViewRendered() boolean
+isTableViewRendered(bean) void
+getTableViewColumn() String
+setTableViewColumn(String) void
+isQueryRendered() boolean
+isQueryRendered(bean) void
+getList() List<String>
+setList(List<String>) void
+isQuery() String
+setQuery(String) void
+isQueryRendered() boolean
+isQueryRendered(bean) void
+setMessage() String

```

<<Java Class>>



edu.uic.ids517.model

number: NumberFormat

MathUtil()

numberFormat(double): String

numberFormat(float): String

round(double, double): double

<<Java Class>>
RegressionAnalysisManagedBean
edu.uic.ids.517.model

```

    message: String
    regressionEquation: String
    intercept: double
    interceptStandardError: double
    tStatistic: double
    interceptPValue: double
    slope: double
    predictorDF: double
    residualErrorDF: double
    totalDF: double
    regressionSumSquares: double
    sumSquaredErrors: double
    totalSumSquares: double
    totalMeanSquares: double
    meanSquare: double
    meanSquareError: double
    fValue: double
    pValue: double
    slopeStandardError: double
    tStatisticPredictor: double
    pValuePredictor: double
    standardErrorModel: double
    rSquare: double
    rSquareAdjusted: double

    RegressionAnalysisManagedBean()
    setRegressionAnalysisVariables(String,double,double,double,double,double,double,double,double,double,double,double,double,double,double,double,double,double,double,double,double):boolean
    getMessage():String
    setMessage(String):void
    getRegressionEquation():String
    setRegressionEquation(String):void
    getIntercept():double
    setIntercept(double):void
    getInterceptStandardError():double
    setInterceptStandardError(double):void
    gettStatistic():double
    settStatistic(double):void
    getInterceptPValue():double
    setInterceptPValue(double):void
    getSlope():double
    setSlope(double):void
    getPredictorDF():double
    setPredictorDF(double):void
    getResidualErrorDF():double
    setResidualErrorDF(double):void
    getTotalDF():double
    setTotalDF(double):void
    getRegressionSumSquares():double
    setRegressionSumSquares(double):void
    getSumSquaredErrors():double
    setSumSquaredErrors(double):void
    getTotalSumSquares():double
    setTotalSumSquares(double):void
    getTotalMeanSquares():double
    setTotalMeanSquares(double):void
    getMeanSquare():double
    setMeanSquare(double):void
    getMeanSquareError():double
    setMeanSquareError(double):void
    getfValue():double
    setfValue(double):void
    getpValue():double
    setpValue(double):void
    getSlopeStandardError():double
    setSlopeStandardError(double):void
    gettStatisticPredictor():double
    settStatisticPredictor(double):void
    getpValuePredictor():double
    setpValuePredictor(double):void
    getStandardErrorModel():double
    setStandardErrorModel(double):void
    getrSquare():double
    setrSquare(double):void
    getrSquareAdjusted():double
    setrSquareAdjusted(double):void

```

<<Java Class>>

StatisticsBean

edu.uic.ids517.model

- dataset: String
- variable: String
- numberObs: int
- minValue: double
- q1: double
- median: double
- q3: double
- maxValue: double
- mean: double
- variance: double
- standardDeviation: double
- iqr: double
- range: double
- columnNames: String[]

- StatisticsBean()
- getDataset():String
- setDataset(String):void
- getVariable():String
- setVariable(String):void
- getNumberObs():int
- setNumberObs(int):void
- getMinValue():double
- setMinValue(double):void
- getQ1():double
- setQ1(double):void
- getMedian():double
- setMedian(double):void
- getQ3():double
- setQ3(double):void
- getMaxValue():double
- setMaxValue(double):void
- getMean():double
- setMean(double):void
- getVariance():double
- setVariance(double):void
- getStandardDeviation():double
- setStandardDeviation(double):void
- getIqr():double
- setIqr(double):void
- getRange():double
- setRange(double):void
- getColumnNames():String[]
- clone():StatisticsBean