

## Package comp3111G15

### Class Summary

Class	Description
ATUEngine	The ATUEngine Produces Team-up results and have them stored in ATU_Team dataset.
DisplayWindowController	The DisplayWindowController describes the components used for the teaming up result table.
EnergyChartViewController	The EnergyChartViewController describes the components used for the Student Key Energies Zoom Out View
InputManager	The InputManager describes the resulting statistic data and student data
Library	The Library is the starting point of the application
LibraryTest	The LibraryTest is used for unit testing
RequestWindowController	The RequestWindowController describes the components used for the starting window of the ATU system.
Security	The Security checks password validation
Statistics	The Statistics shows table for students information
StatisticsTableController	The StatisticTableController controls the window for displaying statistics table
Student	The Student contains all information used for teaming up.
StudentTableController	The StudentTableController controls the window displaying the student information table
Team	The Team contains all information for one team
UIApplication	The UIApplication starts the UI of the ATU system

## Hierarchy For Package comp3111G15

### Class Hierarchy

- java.lang.Object
  - javafx.application.Application
    - comp3111G15.UIApplication
  - comp3111G15.ATUEngine
  - comp3111G15.DisplayWindowController (implements javafx.fxml.Initializable)
  - comp3111G15.EnergyChartViewController (implements javafx.fxml.Initializable)
  - comp3111G15.InputManager
  - comp3111G15.Library
  - comp3111G15.LibraryTest
  - comp3111G15.RequestWindowController
  - comp3111G15.Security
  - comp3111G15.Statistics
  - comp3111G15.StatisticsTableController
  - comp3111G15.Student (implements java.lang.Comparable<T>)
  - comp3111G15.StudentTableController
  - comp3111G15.Team

Package comp3111G15

## ass Applicatio

```
java.lang.Object  
    javafx.application.Application  
        comp3111G15.UIApplication
```

```
public class UIApplication  
extends javafx.application.Application
```

The UIApplication starts the UI of the ATU system

Author:

SzeWingKwan

### Nested Class Summary

#### **Nested classes/interfaces inherited from class javafx.application.Application**

```
javafx.application.Application.Parameters
```

### Field Summary

#### **Fields inherited from class javafx.application.Application**

```
STYLESHEET_CASPIAN, STYLESHEET_MODENA
```

### Constructor Summary

#### Constructors

Constructor	Description
<b>UIApplication()</b>	

### Method Summary

#### All Methods

#### Static Methods

#### Instance Methods

#### Concrete Methods

Modifier and Type	Method	Description
static void	<b>run(java.lang.String[] arg)</b>	UI entry point
void	<b>start(javafx.stage.Stage stage)</b>	Application entry point

#### **Methods inherited from class javafx.application.Application**

```
getHostServices, getParameters, getUserAgentStylesheet, init, launch, launch,  
notifyPreloader, setUserAgentStylesheet, stop
```

## Methods inherited from class java.lang.Object

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

## Constructor Details

### UIApplication

```
public UIApplication()
```

## Method Details

### start

```
public void start(javafx.stage.Stage stage)
                  throws java.lang.Exception
```

Application entry point

**Specified by:**

start in class javafx.application.Application

**Throws:**

java.lang.Exception

### run

```
public static void run(java.lang.String[] arg)
```

UI entry point

**Parameters:**

arg - argument array

Package comp3111G15

## Class ATUEngine

java.lang.Object  
comp3111G15.ATUEngine

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

The ATUEngine Produces Team-up results and have them stored in ATU\_Team dataset.

Author:

HE Qihao

### Field Summary

#### Fields

Modifier and Type	Field	Description
java.util.List<Team>	ATU_Team	List of team

### Constructor Summary

#### Constructors

Constructor	Description
ATUEngine (java.util.List<Student> studentData)	Class constructor, calls Create_Team() method to produce team-up results.

### Method Summary

#### All Methods

#### Instance Methods

#### Concrete Methods

Modifier and Type	Method	Description
void	Create_Common_Team(int i)	Create normal teams with three students.
void	Create_Special_Team(int i)	Some finishing work on remaining students not allocated with a group in K3_list, this method create team with four students
void	Create_Team (java.util.List<Student> studentData)	Create teams and put students from K1_list, K2_list and K3_list in each of them.
java.util.List<Team>	getTeamlist()	Accessor that returns team-up results.

Modifier and Type	Method	Description
void	<b>Order_by_energies()</b>	Select top(Team_Size) student_id from student_data order by K1_Energy in descending order and store into K1_List

## Methods inherited from class java.lang.Object

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

## Field Details

### ATU\_Team

public java.util.List<Team> ATU\_Team

List of team

## Constructor Details

### ATUEngine

public ATUEngine(java.util.List<Student> studentData)

Class constructor, calls Create\_Team() method to produce team-up results.

**Parameters:**

studentData - for ATUEngine to start running

## Method Details

### Order\_by\_energies

public void Order\_by\_energies()

Select top(Team\_Size) student\_id from student\_data order by K1\_Energy in descending order and store into K1\_List

### Create\_Common\_Team

public void Create\_Common\_Team(int i)

Create normal teams with three students.

**Parameters:**

i - for (team.id-1)

## Create\_Special\_Team

```
public void Create_Special_Team(int i)
```

Some finishing work on remaining students not allocated with a group in K3\_list, this method create team with four students

**Parameters:**

i - for (team.id-1)

## Create\_Team

```
public void Create_Team(java.util.List<Student> studentData)
```

Create teams and put students from K1\_list, K2\_list and K3\_list in each of them.

**Parameters:**

studentData - for teams to be created

## getTeamlist

```
public java.util.List<Team> getTeamlist()
```

Accessor that returns team-up results.

**Returns:**

list of resulting team

Package comp3111G15

## Class DisplayWindowController

java.lang.Object  
comp3111G15.DisplayWindowController

All Implemented Interfaces:

javafx.fxml.Initializable

---

```
public class DisplayWindowController
extends java.lang.Object
implements javafx.fxml.Initializable
```

The DisplayWindowController describes the components used for the teaming up result table.

Author:

SzeWingKwan

### Constructor Summary

#### Constructors

Constructor	Description
<code>DisplayWindowController()</code>	

### Method Summary

#### All Methods

#### Instance Methods

#### Concrete Methods

Modifier and Type	Method	Description
void	<code>initialize(java.net.URL location, java.util.ResourceBundle resources)</code>	

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

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

### Constructor Details

#### DisplayWindowController

```
public DisplayWindowController()
```

### Method Details

## initialize

```
public void initialize(java.net.URL location,  
                      java.util.ResourceBundle resources)
```

**Specified by:**

initialize in interface javafx.fxml.Initializable

Package comp3111G15

## Class EnergyChartViewController

java.lang.Object  
comp3111G15.EnergyChartViewController

All Implemented Interfaces:

javafx.fxml.Initializable

---

```
public class EnergyChartViewController
extends java.lang.Object
implements javafx.fxml.Initializable
```

The EnergyChartViewController describes the components used for the Student Key Energies Zoom Out View

Author:

SzeWingKwan

### Constructor Summary

#### Constructors

Constructor	Description
<code>EnergyChartViewController()</code>	

### Method Summary

#### All Methods    Instance Methods    Concrete Methods

Modifier and Type	Method	Description
void	<code>initialize(java.net.URL url, java.util.ResourceBundle rb)</code>	

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

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

### Constructor Details

#### EnergyChartViewController

```
public EnergyChartViewController()
```

### Method Details

#### initialize

```
public void initialize(java.net.URL url,  
                      java.util.ResourceBundle rb)
```

**Specified by:**

initialize in interface javafx.fxml.Initializable

Package comp3111G15

## Class InputManager

java.lang.Object  
comp3111G15.InputManager

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

The InputManager describes the resulting statistic data and student data

Author:

SzeWingKwan

### Field Summary

#### Fields

Modifier and Type	Field	Description
static java.lang.String	<b>delimiter</b>	Delimiter for student name
static javafx.collections.ObservableList<Statistics>	<b>stat_data</b>	List of statistics
static javafx.collections.ObservableList<Student>	<b>student_data</b>	List of student information

### Constructor Summary

#### Constructors

Constructor	Description
<b>InputManager()</b>	

### Method Summary

#### All Methods

#### Static Methods

#### Concrete Methods

Modifier and Type	Method	Description
static java.lang.String[]	<b>get_k3_ticks</b> (java.util.List<Student> student_data)	This function get the mean, min, max of all students' K3 ticks
static java.lang.String[]	<b>get_student_k1_mmm</b> (java.util.List<Student> student_data)	This function get the mean, min, max of all students' K1 value

Modifier and Type	Method	Description
static java.lang.String[]	<b>get_student_k2_mmm</b> (java.util.List<Student> student_data)	This function get the mean, min, max of all students' K2 value
static java.util.ArrayList<Statistics>	<b>getStatistics</b> (java.util.List<Student> studentData)	Populate the statistics stat_data, the ArrayList will contain number_of_student, K1mmm, K2mmm, K3_Tick1, K3_Tick2, My_preference, in order
static boolean	<b>read</b> (java.lang.String csvFile)	Read csv file

## Methods inherited from class java.lang.Object

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

## Field Details

### stat\_data

public static final javafx.collections.ObservableList<Statistics> stat\_data

List of statistics

### student\_data

public static final javafx.collections.ObservableList<Student> student\_data

List of student information

### delimiter

public static final java.lang.String delimiter

Delimiter for student name

#### See Also:

Constant Field Values

## Constructor Details

### InputManager

```
public InputManager()
```

## Method Details

### get\_student\_k1\_mmm

```
public static java.lang.String[] get_student_k1_mmm(  
java.util.List<Student> student_data)
```

This function get the mean, min, max of all students' K1 value

**Parameters:**

student\_data - A list of Student objects

**Returns:**

A string array of elements mean, min, max in ascending order.

### get\_student\_k2\_mmm

```
public static java.lang.String[] get_student_k2_mmm(  
java.util.List<Student> student_data)
```

This function get the mean, min, max of all students' K2 value

**Parameters:**

student\_data - A list of Student objects

**Returns:**

A string array of elements mean, min, max in ascending order.

### get\_k3\_ticks

```
public static java.lang.String[] get_k3_ticks(java.util.List<Student> student_data)
```

This function get the mean, min, max of all students' K3 ticks

**Parameters:**

student\_data - A list of Student objects

**Returns:**

A string array of elements tick1\_count, tick2\_count, my\_preference in ascending order.

### read

```
public static boolean read(java.lang.String csvFile)
```

Read csv file

**Parameters:**

csvFile - A String of file name in the parent directory

**Returns:**

true if the csv file is successfully read, false otherwise

## getStatistics

```
public static java.util.ArrayList<Statistics> getStatistics(  
    java.util.List<Student> studentData)
```

Populate the statistics stat\_data, the ArrayList will contain number\_of\_student, K1mmm, K2mmm, K3\_Tick1, K3\_Tick2, My\_preference, in order

**Parameters:**

studentData - list of student data

**Returns:**

statistics

## Package comp3111G15

# Class Library

java.lang.Object  
comp3111G15.Library

---

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

The Library is the starting point of the application

### Author:

SzeWingKwan

## Constructor Summary

Constructors	Description
<code>Library()</code>	

## Method Summary

All Methods	Static Methods	Concrete Methods	Description
		<code>main(java.lang.String[] args)</code>	The main method of the program

## Methods inherited from class java.lang.Object

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

## Constructor Details

### Library

```
public Library()
```

## Method Details

### main

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

The main method of the program

#### Parameters:

args - arguments

Package comp3111G15

## Class LibraryTest

java.lang.Object  
comp3111G15.LibraryTest

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

The LibraryTest is used for unit testing

Author:

SzeWingKwan

### Constructor Summary

Constructors	Description
<code>LibraryTest()</code>	

### Method Summary

All Methods	Instance Methods	Concrete Methods	Description
		<code>changeConcerns()</code>	Test for student concerns
		<code>checkStatistics()</code>	Test for InputManager statistic
		<code>checkUserLevelDialogResult()</code>	Test for RequestWindowController
		<code>isATUEngineExecutedCorrectly()</code>	Test for ATUEngine
		<code>isK1MMMEqual()</code>	Test for InputManager K1 mean, min, max
		<code>isK2MMMEqual()</code>	Test for InputManager K2 mean, min, max
		<code>isK3_tick1Equal()</code>	Test for InputManager K3 tick 1
		<code>isK3_tick2Equal()</code>	Test for InputManager K3 tick 2
		<code>isMemberListEqual()</code>	Test for team member list
		<code>isMyPrefEqual()</code>	Test for InputManager preference
		<code>isPasswordCorrect()</code>	Test for Security password
		<code>isStudentEmailEqual()</code>	Test for student email
		<code>isStudentIDEqual()</code>	Test for student id
		<code>isStudentK1CompareEqual1()</code>	Test for student K1 compare - equal

Modifier and Type	Method	Description
void	<code>isStudentK1Equal()</code>	Test for student K1
void	<code>isStudentK1Larger()</code>	Test for student K1 compare - larger
void	<code>isStudentK1Smaller()</code>	Test for student K1 compare - smaller
void	<code>isStudentK2Equal()</code>	Test for student K2
void	<code>isStudentK3Tick1ReturnFalse()</code>	Test for student K3 tick 1 - false
void	<code>isStudentK3Tick2ReturnTrue()</code>	Test for student K3 tick 2 - true
void	<code>isStudentNameEqual()</code>	Test for student name
void	<code>isTeamEqual()</code>	Test for team
void	<code>isTeamIdEqual()</code>	Test for team id
void	<code>isTeamK1AverageEqual()</code>	Test for team K1
void	<code>isTeamK2AverageEqual()</code>	Test for team K2
void	<code>isTeamLeaderEqual()</code>	Test for team recommended leader
void	<code>setUp()</code>	Set up control variables

## Methods inherited from class java.lang.Object

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

## Constructor Details

### LibraryTest

```
public LibraryTest()
```

## Method Details

### setUp

```
public void setUp()
                  throws java.lang.Exception
```

Set up control variables

**Throws:**

`java.lang.Exception` - exception

### isTeamIdEqual

```
public void isTeamIdEqual()
```

Test for team id

## **isTeamLeaderEqual**

```
public void isTeamLeaderEqual()
```

Test for team recommended leader

## **isTeamK1AverageEqual**

```
public void isTeamK1AverageEqual()
```

Test for team K1

## **isTeamK2AverageEqual**

```
public void isTeamK2AverageEqual()
```

Test for team K2

## **isMemberListEqual**

```
public void isMemberListEqual()
```

Test for team member list

## **isTeamEqual**

```
public void isTeamEqual()
```

Test for team

## **isStudentNameEqual**

```
public void isStudentNameEqual()
```

Test for student name

## **isStudentIDEqual**

```
public void isStudentIDEqual()
```

Test for student id

## **isStudentEmailEqual**

```
public void isStudentEmailEqual()
```

Test for student email

## **isStudentK1Equal**

```
public void isStudentK1Equal()
```

Test for student K1

## **isStudentK2Equal**

```
public void isStudentK2Equal()
```

Test for student K2

## **isStudentK1Larger**

```
public void isStudentK1Larger()
```

Test for student K1 compare - larger

## **isStudentK1Smaller**

```
public void isStudentK1Smaller()
```

Test for student K1 compare - smaller

## **isStudentK1CompareEqual1**

```
public void isStudentK1CompareEqual1()
```

Test for student K1 compare - equal

## **isStudentK3Tick1ReturnFalse**

```
public void isStudentK3Tick1ReturnFalse()
```

Test for student K3 tick 1 - false

## **isStudentK3Tick2ReturnTrue**

```
public void isStudentK3Tick2ReturnTrue()
```

Test for student K3 tick 2 - true

## **changeConcerns**

```
public void changeConcerns()
```

Test for student concerns

## **checkStatistics**

```
public void checkStatistics()
```

## **isK1MMMEqual**

```
public void isK1MMMEqual()
```

Test for InputManager K1 mean, min, max

## **isK2MMMEqual**

```
public void isK2MMMEqual()
```

Test for InputManager K2 mean, min, max

## **isK3\_tick1Equal**

```
public void isK3_tick1Equal()
```

Test for InputManager K3 tick 1

## **isK3\_tick2Equal**

```
public void isK3_tick2Equal()
```

Test for InputManager K3 tick 2

## **isMyPrefEqual**

```
public void isMyPrefEqual()
```

Test for InputManager preference

## **isPasswordCorrect**

```
public void isPasswordCorrect()
```

Test for Security password

## **checkUserLevelDialogResult**

```
public void checkUserLevelDialogResult()
```

Test for RequestWindowController

## **isATUEngineExecutedCorrectly**

```
public void isATUEngineExecutedCorrectly()
```

Test for ATUEngine



Package comp3111G15

## Class RequestWindowController

java.lang.Object  
comp3111G15.RequestWindowController

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

The RequestWindowController describes the components used for the starting window of the ATU system.

**Author:**

SzeWingKwan, LiChunTak, HE Qihao

### Field Summary

#### Fields

Modifier and Type	Field	Description
static java.lang.String[]	<b>levels</b>	two levels of users, Student or TA

### Constructor Summary

#### Constructors

Constructor	Description
<b>RequestWindowController()</b>	

### Method Summary

#### All Methods

#### Static Methods

#### Instance Methods

#### Concrete Methods

Modifier and Type	Method	Description
static void	<b>displayIncorrectFilenameDialog</b> (java.lang.String filename)	Display a error dialog for when the .csv filename does not exist.
void	<b>initialize()</b>	Initialize the application with user authentication and display UI window
static java.util.ArrayList<java.lang.Boolean>	<b>onDialogGetResult</b> (java.lang.String result)	Get the result of the dialog which asks for user level

## Methods inherited from class java.lang.Object

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

## Field Details

### levels

```
public static java.lang.String[] levels
```

two levels of users, Student or TA

## Constructor Details

### RequestWindowController

```
public RequestWindowController()
```

## Method Details

### initialize

```
public void initialize()
```

Initialize the application with user authentication and display UI window

### onDialogGetResult

```
public static java.util.ArrayList<java.lang.Boolean> onDialogGetResult(  
    java.lang.String result)
```

Get the result of the dialog which asks for user level

**Parameters:**

result - from the dialog

**Returns:**

temporary boolean list, first element: If TA return true, else false, second element: If csv read successful return true, else false

### displayIncorrectFilenameDialog

```
public static void displayIncorrectFilenameDialog(java.lang.String filename)
```

Display a error dialog for when the .csv filename does not exist.

**Parameters:**

filename - incorrect filename

Package comp3111G15

## Class Security

java.lang.Object  
comp3111G15.Security

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

The Security checks password validation

Author:

SzeWingKwan

### Constructor Summary

Constructors	Constructor	Description
	<code>Security()</code>	

### Method Summary

All Methods	Static Methods	Concrete Methods	Description
		<code>checkPW</code> ( <code>java.lang.String</code> input)	Check input password against the default password

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

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

### Constructor Details

#### Security

```
public Security()
```

### Method Details

#### checkPW

```
public static boolean checkPW(java.lang.String input)
```

Check input password against the default password

**Parameters:**

input - String of input

**Returns:**

true if match, false otherwise

Package comp3111G15

## Class Statistics

java.lang.Object  
comp3111G15.Statistics

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

The Statistics shows table for students information

Author:

LiChunTak

### Constructor Summary

Constructors	Description
<code>Statistics(int index, java.lang.String fName, java.lang.String lName)</code>	Constructor of Statistics

### Method Summary

All Methods	Instance Methods	Concrete Methods	Description
Modifier and Type	Method		
java.lang.String	<code>getEntry()</code>		Get entry of Statistics in a string
java.lang.String	<code>getIndex()</code>		Get index of Statistics in a string
java.lang.String	<code>getValue()</code>		Get value of Statistics in a string
void		<code>setEntry(java.lang.String val)</code>	Set entry of Statistics
void		<code>setIndex(java.lang.String val)</code>	Set index of Statistics
void		<code>setValue(java.lang.String val)</code>	Set value of Statistics

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

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

### Constructor Details

#### Statistics

```
public Statistics(int index,  
                  java.lang.String fName,  
                  java.lang.String lName)
```

**Parameters:**

index - index

fName - first name

lName - last name

## **Method Details**

### **getIndex**

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

Get index of Statistics in a string

**Returns:**

String

### **setIndex**

```
public void setIndex(java.lang.String val)
```

Set index of Statistics

**Parameters:**

val - index

### **getEntry**

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

Get entry of Statistics in a string

**Returns:**

String

### **setEntry**

```
public void setEntry(java.lang.String val)
```

Set entry of Statistics

**Parameters:**

val - entry

### **getValue**

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

Get value of Statistics in a string

**Returns:**

String

## **setValue**

```
public void setValue(java.lang.String val)
```

Set value of Statistics

**Parameters:**

val - value

Package comp3111G15

## Class StatisticsTableController

java.lang.Object  
comp3111G15.StatisticsTableController

---

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

The StatisticTableController controls the window for displaying statistics table

**Author:**

SzeWingKwan

### Constructor Summary

#### Constructors

Constructor	Description
<code>StatisticsTableController()</code>	

### Method Summary

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

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

### Constructor Details

#### StatisticsTableController

```
public StatisticsTableController()
```

Package comp3111G15

## Class Student

java.lang.Object  
comp3111G15.Student

All Implemented Interfaces:

java.lang.Comparable<Student>

---

```
public class Student
extends java.lang.Object
implements java.lang.Comparable<Student>
```

The Student contains all information used for teaming up.

Author:

SzeWingKwan

### Constructor Summary

#### Constructors

Constructor	Description
<code>Student(int index, java.lang.String student_id, java.lang.String student_name, java.lang.String email, java.lang.String k1_energy, java.lang.String k2_energy, java.lang.String k3_tick1, java.lang.String k3_tick2, java.lang.String my_preference, java.lang.String concerns)</code>	Class constructor

### Method Summary

#### All Methods

#### Instance Methods

#### Concrete Methods

Modifier and Type	Method	Description
int	<code>compareTo(Student other)</code>	The method used for sorting the students in a list in descending K1 order.
java.lang.String	<code>getConcerns()</code>	Gets concerns
java.lang.String	<code>getIndex()</code>	Gets index
java.lang.String	<code>getK1Energy()</code>	Gets K1 energy in String
int	<code>getK1Energy_int()</code>	Gets K1 energy in integer
java.lang.String	<code>getK2Energy()</code>	Gets K2 energy in String
int	<code>getK2Energy_int()</code>	Gets K2 energy in integer
java.lang.String	<code>getK3Tick1()</code>	Gets K3 tick 1 in String
boolean	<code>getK3Tick1_bool()</code>	Gets K3 tick 1

Modifier and Type	Method	Description
java.lang.String	<b>getK3Tick2()</b>	Gets K3 tick 2 in String
boolean	<b>getK3Tick2_bool()</b>	Gets K3 tick 2
java.lang.String	<b>getMyPreference()</b>	Gets my preference
java.lang.String	<b>getStudentEmail()</b>	Gets student email
java.lang.String	<b>getStudentID()</b>	Gets student ID
java.lang.String	<b>getStudentName()</b>	Gets student name
void	<b>setConcerns</b> (java.lang.String val)	Sets concerns
void	<b>setIndex</b> (java.lang.String val)	Sets index
void	<b>setK1Energy</b> (java.lang.String val)	Sets K1 energy
void	<b>setK2Energy</b> (java.lang.String val)	Sets K2 energy
void	<b>setK3Tick1</b> (java.lang.String val)	Sets K3 tick 1
void	<b>setK3Tick2</b> (java.lang.String val)	Sets K3 tick 2
void	<b>setMyPreference</b> (java.lang.String val)	Sets my preference
void	<b>setStudentEmail</b> (java.lang.String val)	Sets student email
void	<b>setStudentID</b> (java.lang.String val)	Sets student ID
void	<b>setStudentName</b> (java.lang.String val)	Sets student name

## Methods inherited from class java.lang.Object

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

## Constructor Details

### Student

```
public Student(int index,
              java.lang.String student_id,
              java.lang.String student_name,
              java.lang.String email,
              java.lang.String k1_energy,
              java.lang.String k2_energy,
              java.lang.String k3_tick1,
              java.lang.String k3_tick2,
              java.lang.String my_preference,
              java.lang.String concerns)
```

Class constructor

**Parameters:**

`index` - index

`student_id` - student ID

`student_name` - student name

`email` - student email

`k1_energy` - K1 energy

`k2_energy` - K2 energy

`k3_tick1` - whether is creative and participate aggressively

`k3_tick2` - whether is willing to take more workloads

`my_preference` - my preference to be the leader

`concerns` - concerns/comments

## **Method Details**

### **compareTo**

```
public int compareTo(Student other)
```

The method used for sorting the students in a list in descending K1 order.

**Specified by:**

`compareTo` in interface `java.lang.Comparable<Student>`

### **getK1Energy\_int**

```
public int getK1Energy_int()
```

Gets K1 energy in integer

**Returns:**

K1 energy

### **getK2Energy\_int**

```
public int getK2Energy_int()
```

Gets K2 energy in integer

**Returns:**

K2 energy

## getK3Tick1\_bool

```
public boolean getK3Tick1_bool()
```

Gets K3 tick 1

**Returns:**

true/false

## getK3Tick2\_bool

```
public boolean getK3Tick2_bool()
```

Gets K3 tick 2

**Returns:**

true/false

## getIndex

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

Gets index

**Returns:**

index

## setIndex

```
public void setIndex(java.lang.String val)
```

Sets index

**Parameters:**

val - for index

## getStudentID

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

Gets student ID

**Returns:**

student ID

## setStudentID

```
public void setStudentID(java.lang.String val)
```

Sets student ID

**Parameters:**

val - for student ID

## getStudentName

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

Gets student name

**Returns:**

student name

## setStudentName

```
public void setStudentName(java.lang.String val)
```

Sets student name

**Parameters:**

val - for student name

## getStudentEmail

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

Gets student email

**Returns:**

student email

## setStudentEmail

```
public void setStudentEmail(java.lang.String val)
```

Sets student email

**Parameters:**

val - for student email

## getK1Energy

```
public java.lang.String getK1Energy()
```

Gets K1 energy in String

**Returns:**

## setK1Energy

```
public void setK1Energy(java.lang.String val)
```

Sets K1 energy

**Parameters:**

val - for K1 energy

## getK2Energy

```
public java.lang.String getK2Energy()
```

Gets K2 energy in String

**Returns:**

K2 energy

## setK2Energy

```
public void setK2Energy(java.lang.String val)
```

Sets K2 energy

**Parameters:**

val - for K2 energy

## getK3Tick1

```
public java.lang.String getK3Tick1()
```

Gets K3 tick 1 in String

**Returns:**

1/0

## setK3Tick1

```
public void setK3Tick1(java.lang.String val)
```

Sets K3 tick 1

**Parameters:**

val - for K3 tick 1

## getK3Tick2

```
public java.lang.String getK3Tick2()
```

Gets K3 tick 2 in String

**Returns:**

1/0

## setK3Tick2

```
public void setK3Tick2(java.lang.String val)
```

Sets K3 tick 2

**Parameters:**

val - for K3 tick 2

## getMyPreference

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

Gets my preference

**Returns:**

1/0

## setMyPreference

```
public void setMyPreference(java.lang.String val)
```

Sets my preference

**Parameters:**

val - for my preference

## getConcerns

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

Gets concerns

**Returns:**

concerns

## setConcerns

```
public void setConcerns(java.lang.String val)
```

Sets concerns

**Parameters:**

val - for concerns



Package comp3111G15

## Class StudentTableController

java.lang.Object  
comp3111G15.StudentTableController

---

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

The StudentTableController controls the window displaying the student information table

**Author:**

SzeWingKwan

### Constructor Summary

#### Constructors

Constructor	Description
<code>StudentTableController()</code>	

### Method Summary

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

<code>equals, getClass, hashCode, notify, notifyAll, toString, wait, wait</code>
--

### Constructor Details

#### StudentTableController

```
public StudentTableController()
```

Package comp3111G15

## Class Team

java.lang.Object  
comp3111G15.Team

---

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

The Team contains all information for one team

**Author:**

SzeWingKwan

### Constructor Summary

Constructors	Description
<code>Team(int id, java.util.List&lt;Student&gt; members, int leader)</code>	Class constructor

### Method Summary

All Methods	Instance Methods	Concrete Methods
Modifier and Type	Method	Description
int	<code>getID()</code>	Gets team ID
double	<code>getK1Average()</code>	Gets average K1 energy
double	<code>getK2Average()</code>	Gets average K2 energy
<code>Student</code>	<code>getLeader()</code>	Gets recommended leader
<code>java.util.List&lt;Student&gt;</code>	<code>getMemberList()</code>	Gets team member list
void	<code>sortMember()</code>	The method sorts the team member list in descending K1 order.

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

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

### Constructor Details

#### Team

```
public Team(int id,
            java.util.List<Student> members,
            int leader)
```

Class constructor

**Parameters:**

`id` - team ID

`members` - team member list

`leader` - recommended leader

## **Method Details**

### **sortMember**

```
public void sortMember()
```

The method sorts the team member list in descending K1 order.

### **getID**

```
public int getID()
```

Gets team ID

**Returns:**

team ID

### **getMemberList**

```
public java.util.List<Student> getMemberList()
```

Gets team member list

**Returns:**

team member list

### **getLeader**

```
public Student getLeader()
```

Gets recommended leader

**Returns:**

recommended leader

### **getK1Average**

```
public double getK1Average()
```

Gets average K1 energy

**Returns:**

average K1 energy

## getK2Average

```
public double getK2Average()
```

Gets average K2 energy

**Returns:**

average K2 energy

## Uses of Package comp3111G15

### Classes in comp3111G15 used by comp3111G15

Class	Description
Statistics	The Statistics shows table for students information
Student	The Student contains all information used for teaming up.
Team	The Team contains all information for one team

# Uses of Class comp3111G15.Statistics

## Uses of Statistics in comp3111G15

### Fields in comp3111G15 with type parameters of type Statistics

Modifier and Type	Field	Description
static javafx.collections.ObservableList<Statistics>	InputManager.stat_data	List of statistics

### Methods in comp3111G15 that return types with arguments of type Statistics

Modifier and Type	Method	Description
static java.util.ArrayList<Statistics> (java.util.List<Student> studentData)	InputManager.getStatistics	Populate the statistics stat_data, the ArrayList will contain number_of_student, K1mmm, K2mmm, K3_Tick1, K3_Tick2, My_preference, in order

# Uses of Class comp3111G15.Student

## Uses of Student in comp3111G15

### Fields in comp3111G15 with type parameters of type Student

Modifier and Type	Field	Description
static javafx.collections.ObservableList<Student>	InputManager.student_data	List of student information

### Methods in comp3111G15 that return Student

Modifier and Type	Method	Description
Student	Team.getLeader()	Gets recommended leader

### Methods in comp3111G15 that return types with arguments of type Student

Modifier and Type	Method	Description
java.util.List<Student>	Team.getMemberList()	Gets team member list

### Methods in comp3111G15 with parameters of type Student

Modifier and Type	Method	Description
int	Student.compareTo (Student other)	The method used for sorting the students in a list in descending K1 order.

### Method parameters in comp3111G15 with type arguments of type Student

Modifier and Type	Method	Description
void	ATUEngine.Create_Team (java.util.List<Student> studentData)	Create teams and put students from K1_list, K2_list and K3_list in each of them.
static java.lang.String[]	InputManager.get_k3_ticks (java.util.List<Student> student_data)	This function get the mean, min, max of all students' K3 ticks
static java.lang.String[]	InputManager.get_student_k1_mmm (java.util.List<Student> student_data)	This function get the mean, min, max of all students' K1 value
static java.lang.String[]	InputManager.get_student_k2_mmm (java.util.List<Student> student_data)	This function get the mean, min, max of all students' K2 value

Modifier and Type	Method	Description
static java.util.ArrayList< <b>Statistics</b> > (java.util.List< <b>Student</b> > studentData)	<b>InputManager.getStatistics</b>	Populate the statistics stat_data, the ArrayList will contain number_of_student, K1mmm, K2mmm, K3_Tick1, K3_Tick2, My_preference, in order

### Constructor parameters in comp3111G15 with type arguments of type Student

Constructor	Description
<b>ATUEngine</b> (java.util.List< <b>Student</b> > studentData)	Class constructor, calls Create_Team() method to produce team-up results.
<b>Team</b> (int id, java.util.List< <b>Student</b> > members, int leader)	Class constructor

## Uses of Class comp3111G15.Team

### Uses of Team in comp3111G15

#### Fields in comp3111G15 with type parameters of type Team

Modifier and Type	Field	Description
java.util.List<Team>	<b>ATUEngine.ATU_Team</b>	List of team

#### Methods in comp3111G15 that return types with arguments of type Team

Modifier and Type	Method	Description
java.util.List<Team>	<b>ATUEngine.getTeamlist()</b>	Accessor that returns team-up results.