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# DETAILED DESIGN: ITERATION 2

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**CLIENT: DR. ERIK EDDY**  
**TEAMMATE EVALUATION SOFTWARE**

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DR. MEG FRYLING  
DR. DARREN LIM  
SIENA COLLEGE  
DEPARTMENT OF COMPUTER SCIENCE

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MARCH 9, 2015

## TABLE OF CONTENTS

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1. External Design Specifications	4
1.1 Product Overview	4
1.2. Development and Production Environment	4
1.2.1 Development Environment	4
1.2.2 Operating Environment	4
1.3 Detailed Data Flow Diagrams	5
1.3.1 Data Flow Diagram Legend	5
1.3.2 Context Diagram	6
1.3.3 Level 0 Diagram	7
1.3.4 Level 1 Diagrams	8
1.3.4.1 Create Account	8
1.3.4.2 Login	9
1.3.4.3 Evaluate Teammate	10
1.3.4.4 View Individual Report	11
1.3.4.5 View Team Report	12
1.3.4.6 Establish Class Roster/Team Profile	13
1.3.4.7 Manage Team Evaluations	14
1.3.4.8 Manage User Permissions	15
1.4 UML Activity Diagram	16
1.4.1 Activity Diagram Legend	16
1.4.2 Login Activity Diagram	17
1.5 UML Deployment Diagram	18
1.5.1 Deployment Diagram Legend	18
1.5.2 Deployment Diagram	19
1.6 Logical data dictionary	20
2. Logical Data Model (E/R Diagram)	22
2.1 E/R Diagram Legend	22
2.2 E/R Diagram	23
3. Physical Data Model (Relational Schema)	24
3.1 Relational Schema	24
4. Architectural Design Specification	25
4.1 Website Map Legend	25
4.1.1 Website Map	26
4.2 Packaging Specifications	27
5. Test Plans	28
5.1 Test Directory	28
5.2 Unit Test 1	28
5.3 Unit Test 2	29

6. Prototype Code	30
6.1 TEAMS 101 Application Platform Home	30
6.2 About TEAMS 101	30
6.3 Team Evaluation Log In	30
6.4 Team Evaluation Create An Account	30
6.5 Team Evaluation Home Page	30
7. Prototypes	31
7.1 TEAMS 101 Application Platform Home	31
7.2 About TEAMS 101	32
7.3 Team Evaluation Log In	33
7.4 Team Evalation Create An Account	34
7.5 Team Evaluation Home Page	35
8. Appendix/Glossary	36

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## 1.1 Product Overview

Teammate Evaluation will be a core web application on the TEAMS 101 (Team Evaluation and Management System) dashboard, and it will give students an easily-accessible interface to provide teammate evaluations periodically during group projects. Dr. Erik Eddy realizes the importance that team evaluations hold within a group dynamic, not only in regards to the final grade for the assignment, but for the overall cohesiveness and harmony of the group. Team Evaluation will not only provide Siena College students with the ability to communicate more productively, it will provide professors and administrators the ability to be better acquainted with the team member's participation and performance.

## 1.2 Development and Production Environment

### 1.2.1 Development Environment:

Window's Computer (Software Lab):

Model: Dell OptiPlex 760

Operating System: Windows Vista

Proc: Intel Core 2 Duo E7500 @2.93GHz

RAM: 4GB

HDD: 500GB

Software:

Adobe Dreamweaver, Google Chrome, Internet Explorer, Mozilla Firefox, MySQL, Notepad ++

NOVA Tech will also be using personal laptops throughout the development process.

### 1.2.2 Production Environment:

Server Hostname: oraserv.cs.siena.edu

CentOS 5.2 (final)

Kernel: 2.6.18-92.el5

Intel Xeon 2.66 GHz CPU

8 GB of Memory

Java SE Runtime Environment (build 1.6.0 10-rc-b28)






GCC Version 4.1.2 20071124 (Red Hat 4.1.2-42)

NOVA Tech will be using a web based application located on a server provided by Dr. Eddy. Team Evaluations will utilize an Oracle database with an Apache Web server.

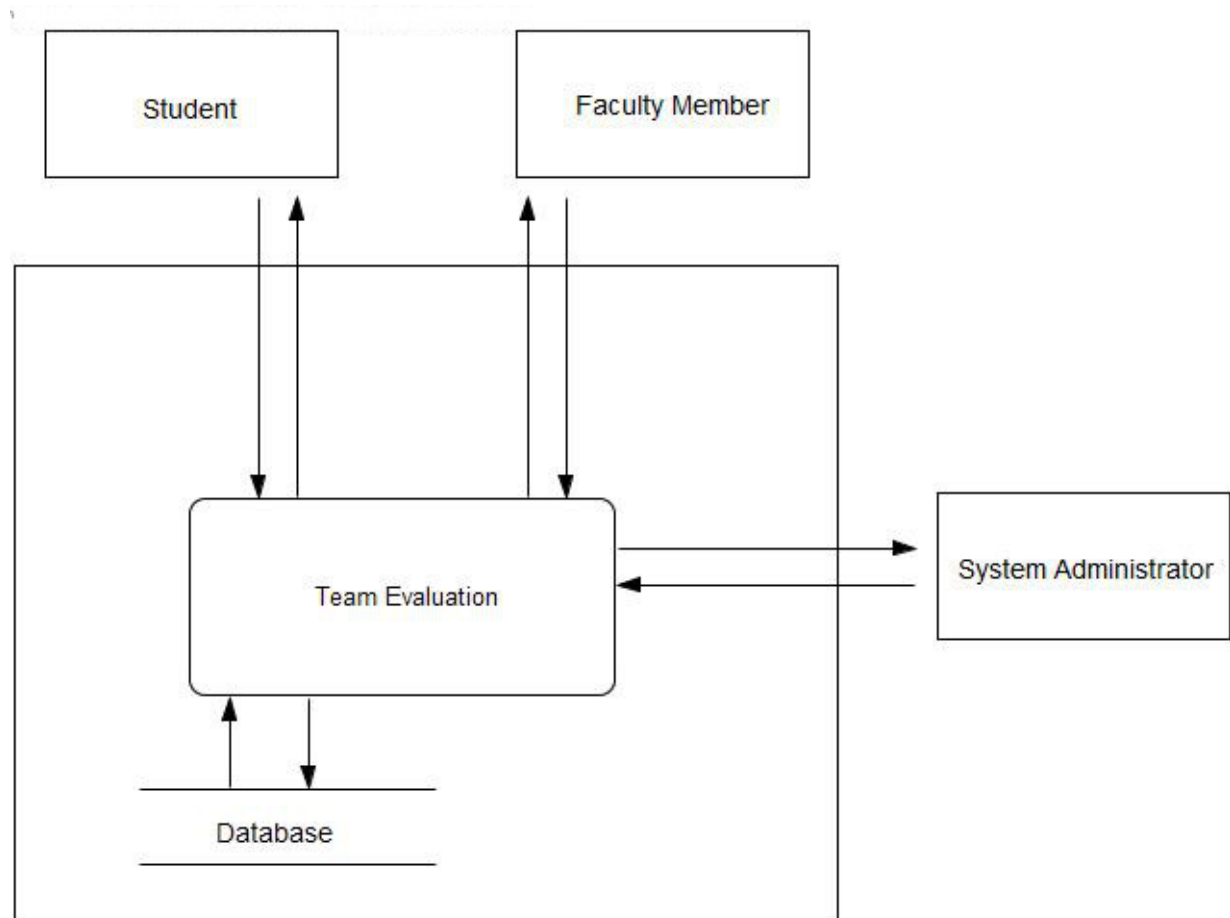
## 1.3 Detailed Data Flow Diagrams

The data flow diagrams will contain the context diagram, a level 0 diagram, and multiple level 1 diagrams. These diagrams visually depict the movement of data between both internal processes and external entities. From these diagrams, the structure of the system can be analyzed as well as the ways in which data moves throughout the system, outside of the system, and is stored and retrieved. The following symbols will be used in the data flow diagrams:

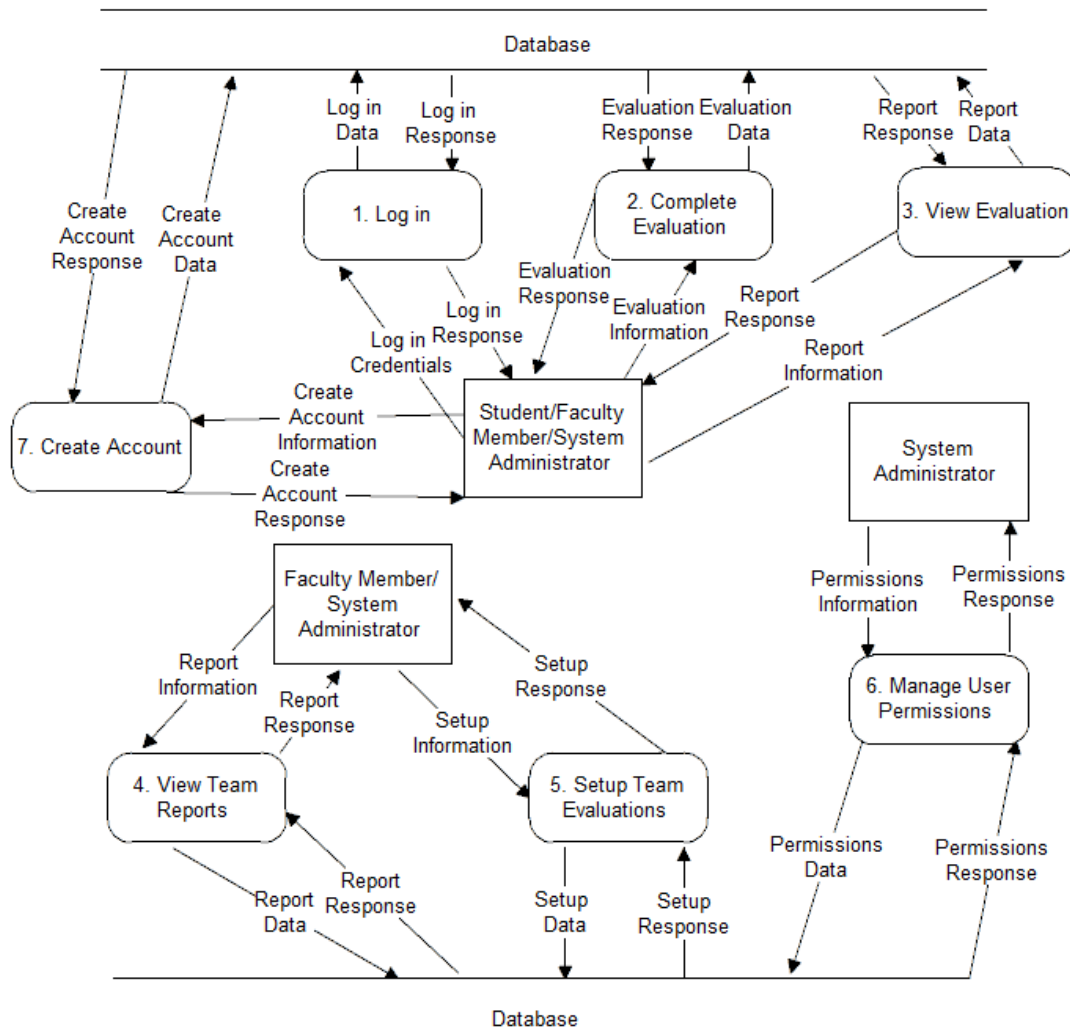
### 1.3.1 Data Flow Diagram Legend

	<b>Process:</b> System components that can receive, modify, and output data.
	<b>Entity:</b> Contributes data and information to system. Entities can also receive information from the system.
	<b>Data Flow:</b> Indicates the movement of data to or from a process.
	<b>Data Store:</b> The location where data is held either temporarily or permanently.
	<b>System Boundary:</b> The definition between internal processes and external entities.

### 1.3.2 Context Diagram



### 1.3.3 Level 0 Diagram

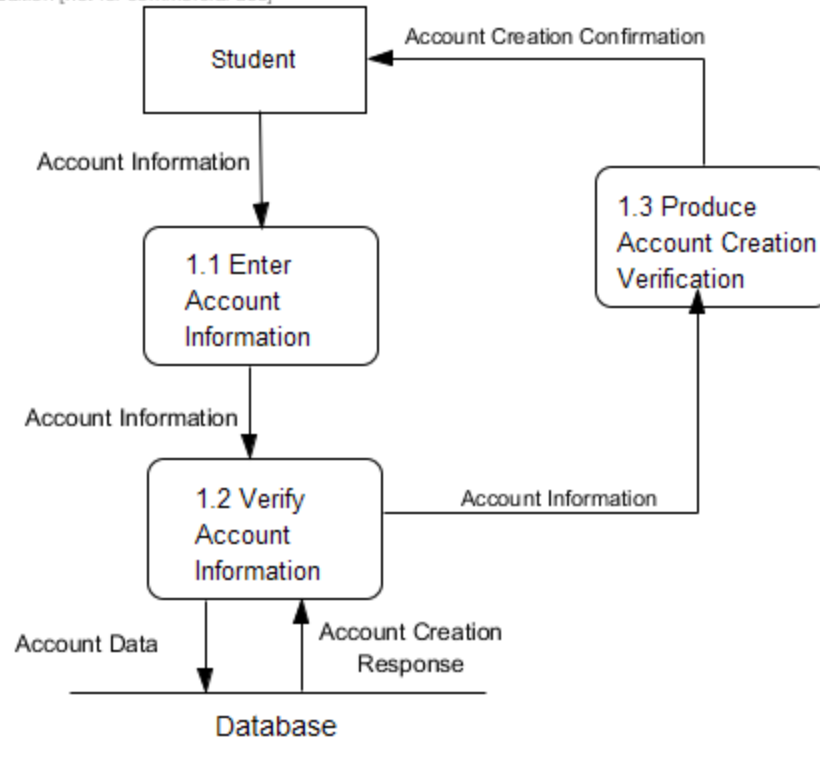


**Notes:**  
System Administrator has access to all processes  
Faculty Member has Student access to all processes

## 1.3.4 Level 1 Diagrams

### 1.3.4.1 Create Account

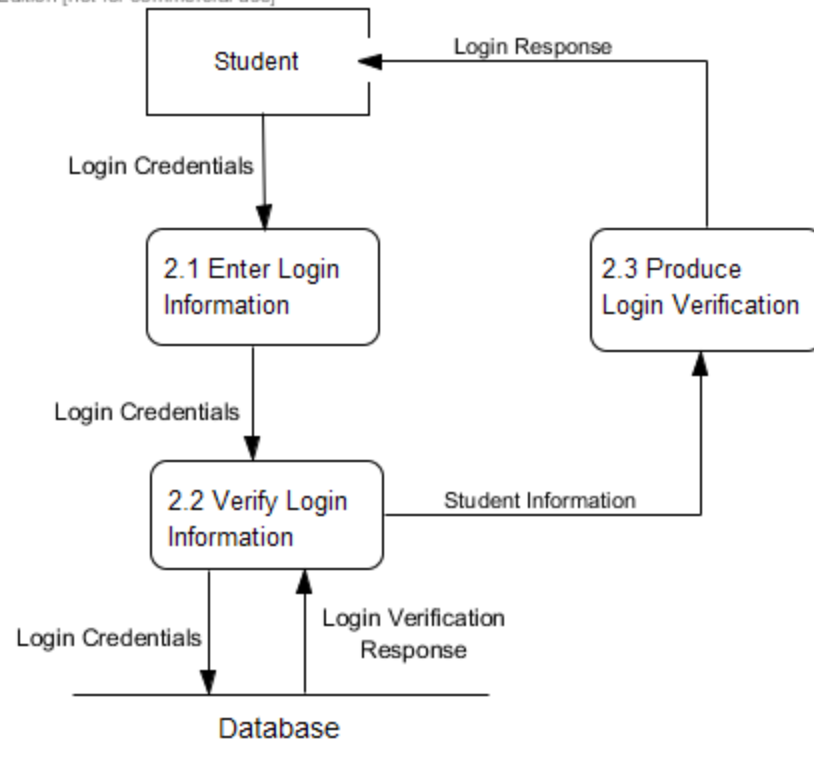
Visual Paradigm Community Edition [not for commercial use]





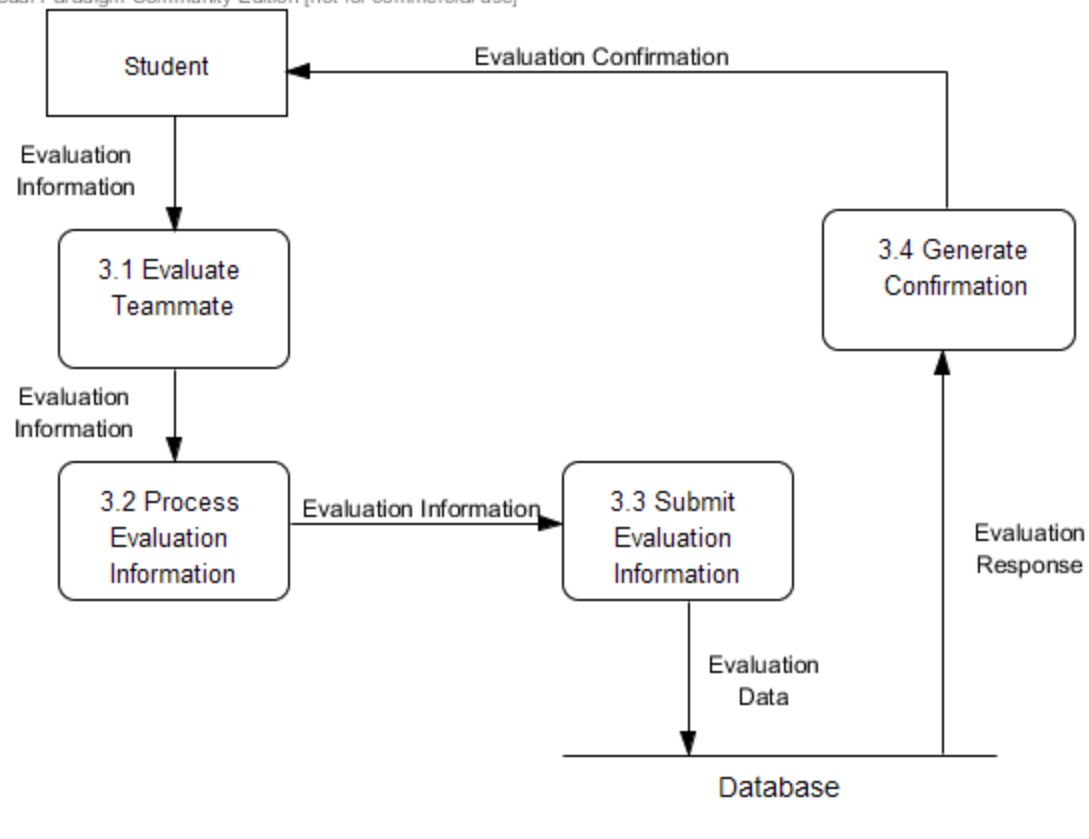
### 1.3.4.2 Login

Visual Paradigm Community Edition [not for commercial use]

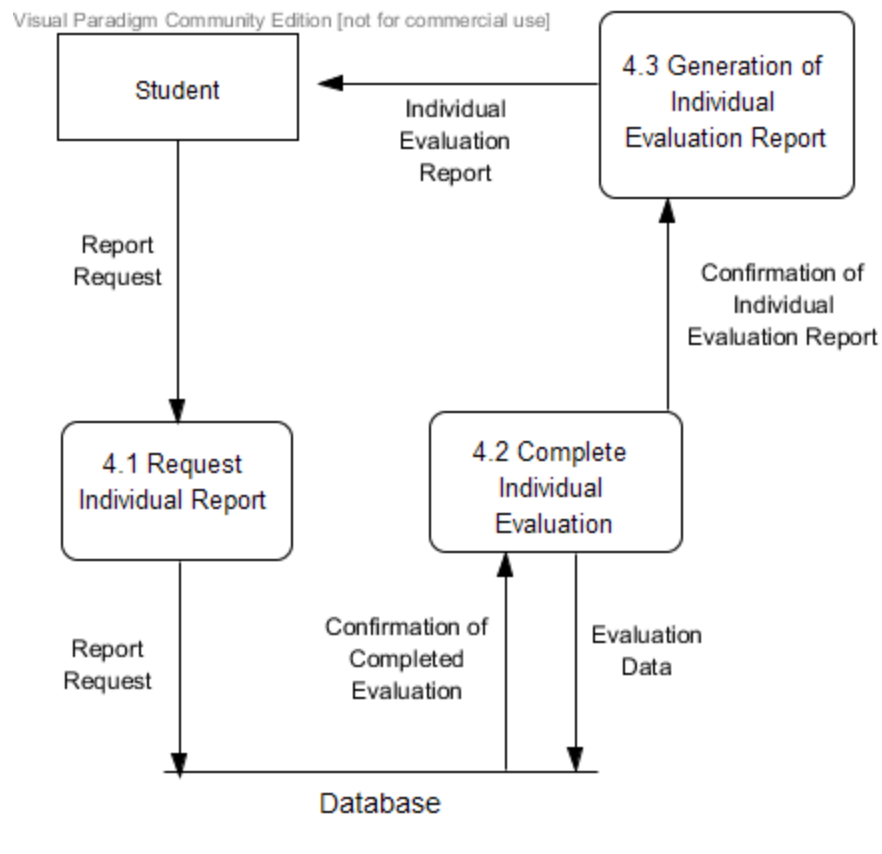


### 1.3.4.3 Evaluate Teammate

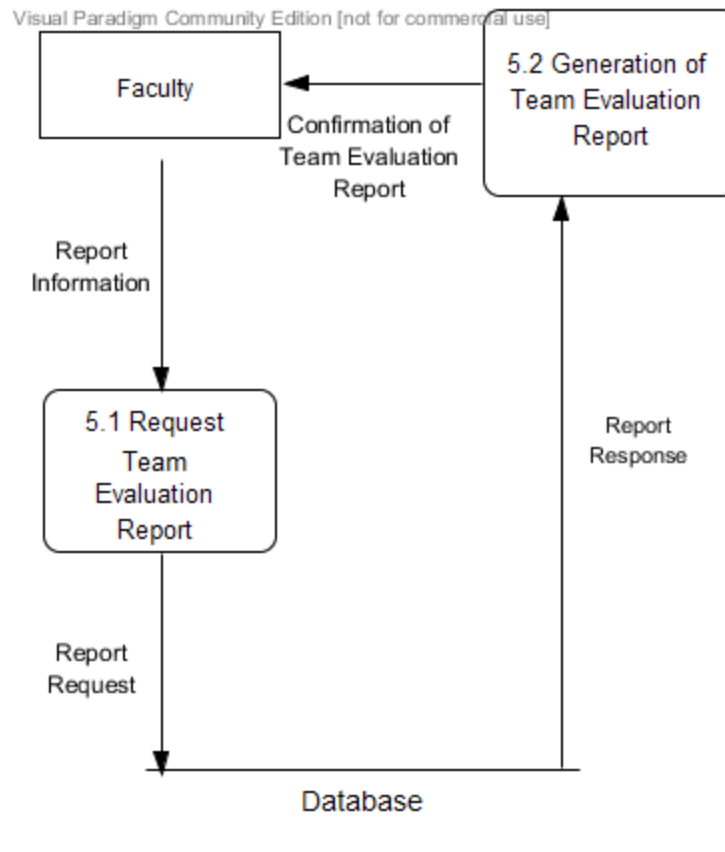
Visual Paradigm Community Edition [not for commercial use]



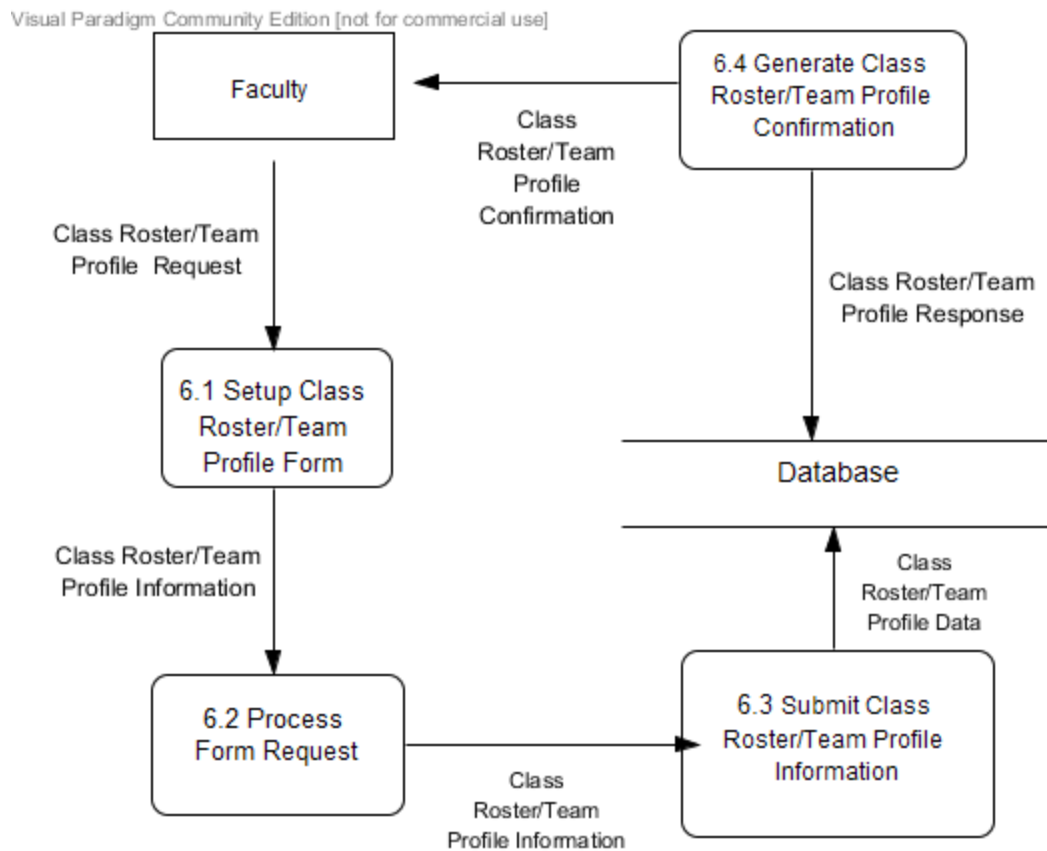
### 1.3.4.4 View Individual Report



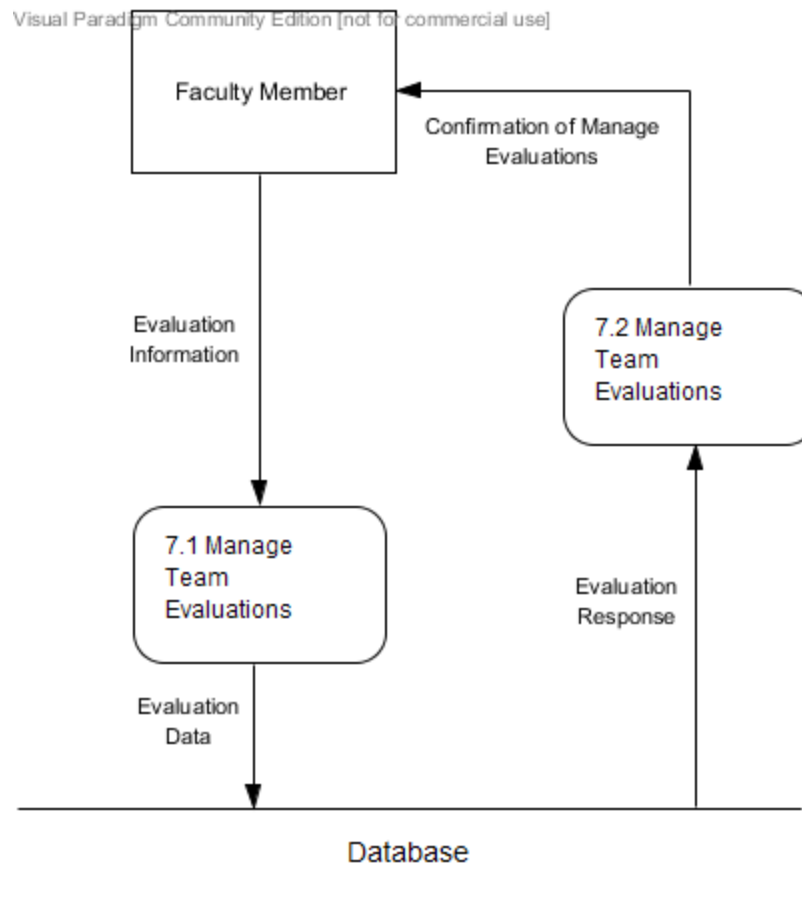
### 1.3.4.5 View Team Report



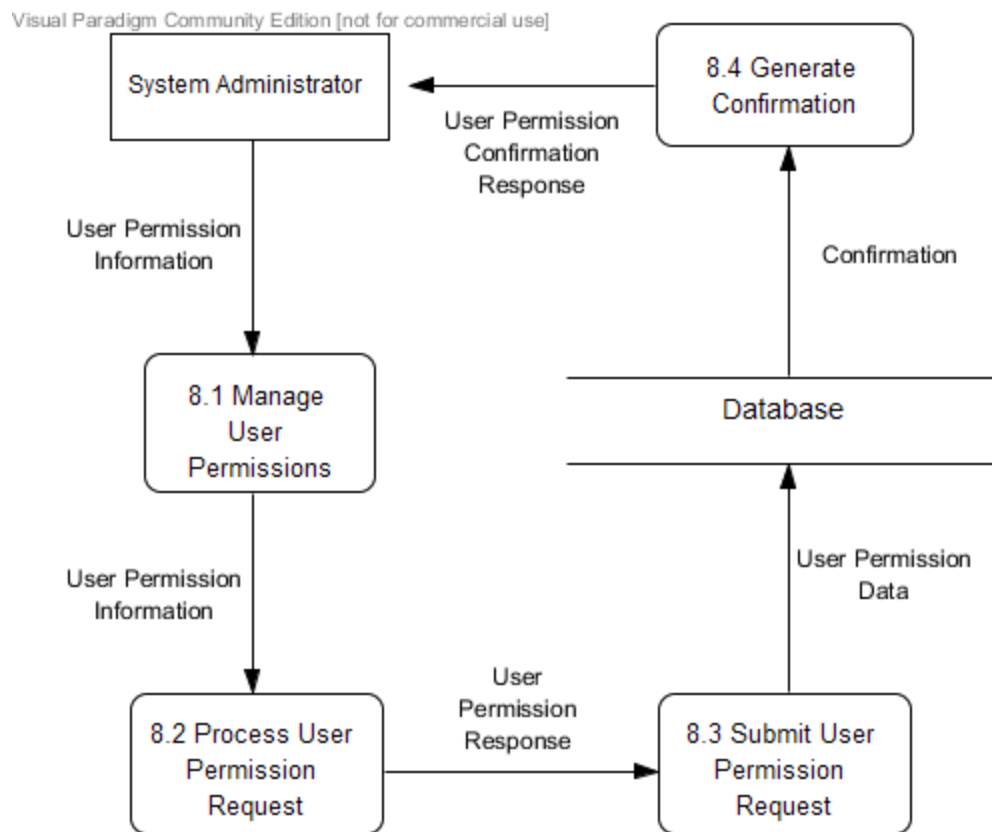
### 1.3.4.6 Establish Class Roster/Team Profile



### 1.3.4.7 Manage Team Evaluations










### 1.3.4.8 Manage User Permissions



## ACTIVITY DIAGRAMS

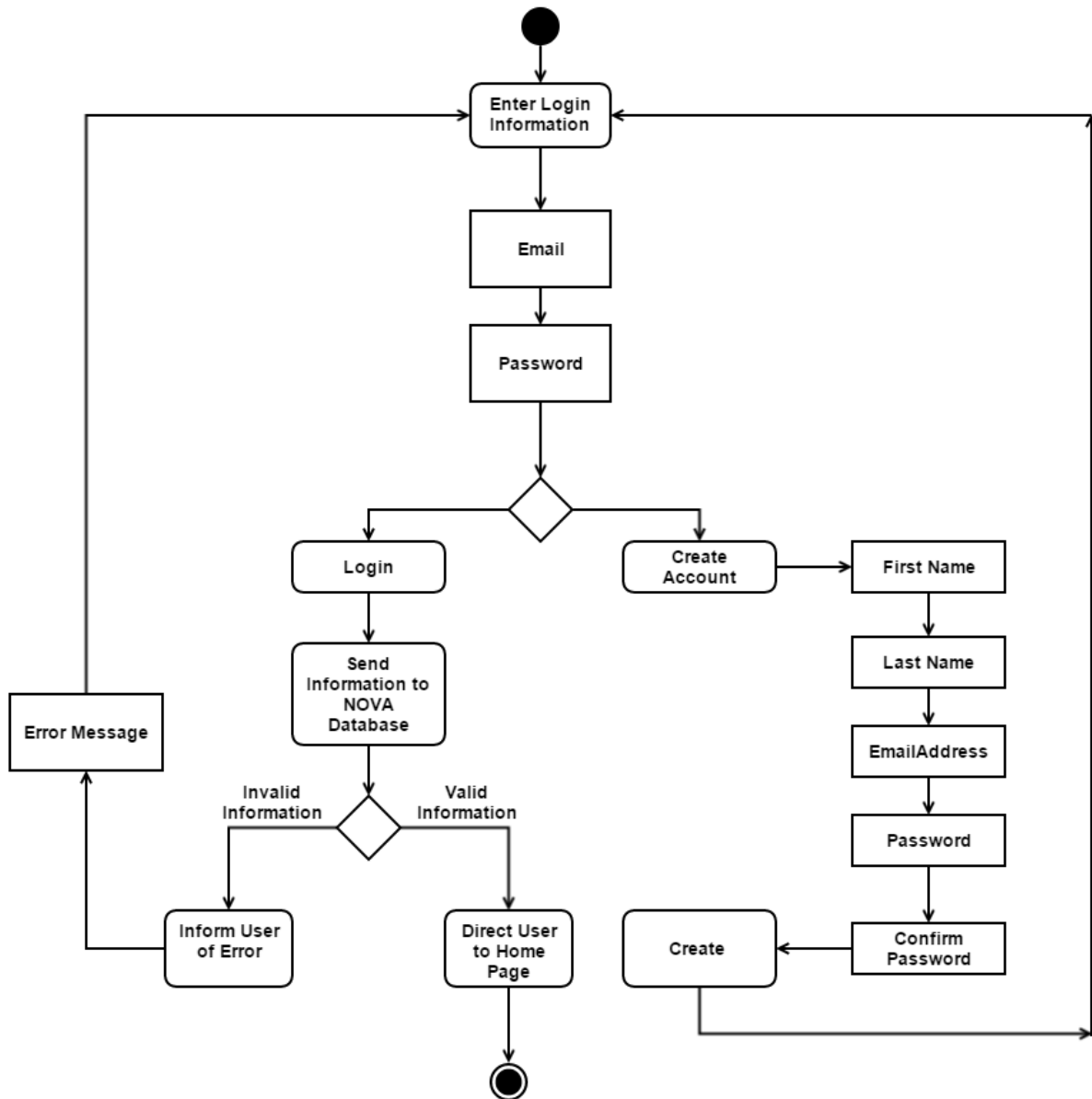
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### 1.4.1 Activity Diagram Legend

	<b>Initial Node</b> – This is the first node in the process. The initial node is the starting point for all movement.
	<b>Final Node</b> – The final node is the last node in the process. When the activity flow has reached here, the process is over.
	<b>Activity Node</b> – The activity node describes the activity or step to be done to help complete the process when the flow reaches the node.
	<b>Decision Node</b> – The decision node is used to branch the activity. A decision node is usually posed in question form, with multiple unique answers. The flow must follow one of the branches after the decision.
	<b>Data Object</b> - Data that is used during the process. The data object can be either input or output.
	<b>Split/Join</b> – Can either separate activity flow to run two activities simultaneously or join them back together after simultaneous activities are completed.
	<b>Flow</b> – Shows the movement of action from one node to another.





## 1.4.2 Activity Diagram



## UML DEPLOYMENT DIAGRAM

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### 1.5.1 UML Deployment Diagram Legend

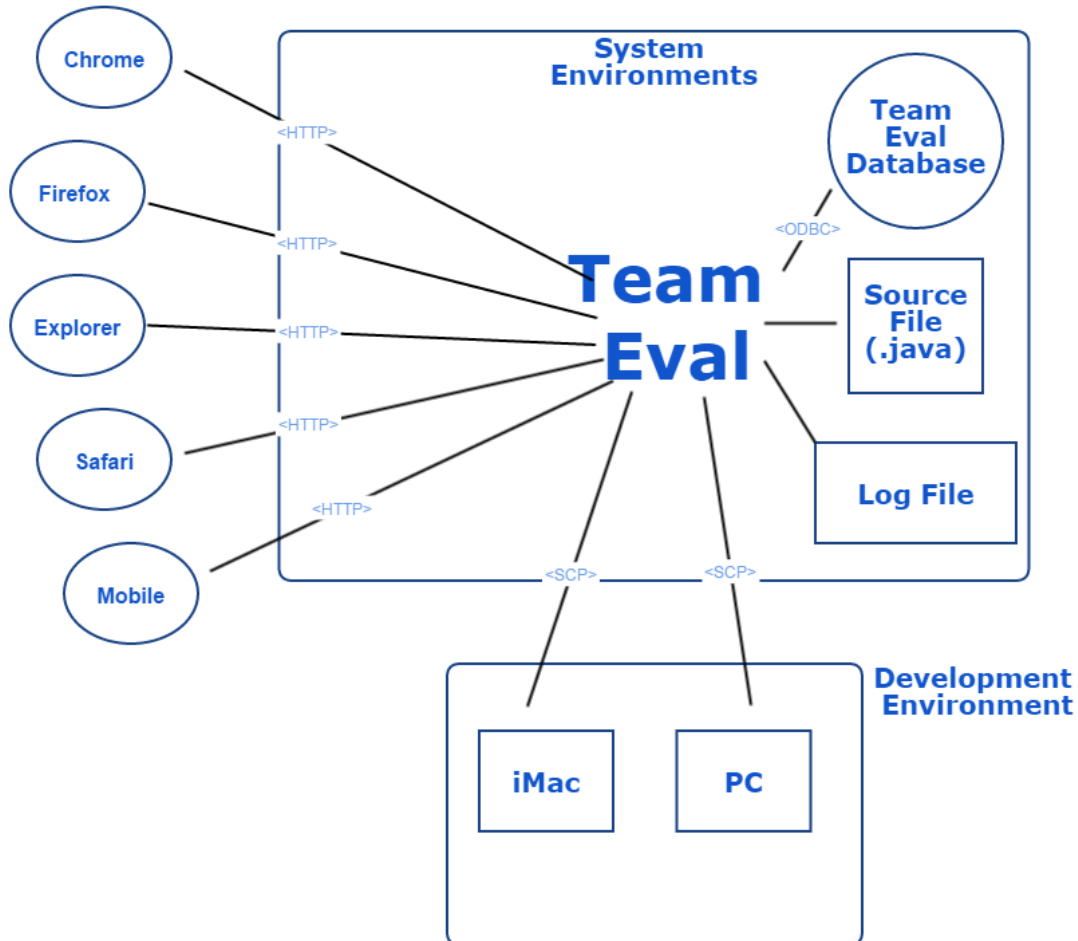
<b>&lt;HTTP&gt;</b>	<b>HTTP - Hypertext Transfer Protocol</b> defines how messages are formatted and transmitted, and what actions web servers and browsers should take in response to various commands.
<b>&lt;SCP&gt;</b>	<b>SCP - Securely transfers computer files</b> between a local host and a remote host
<b>&lt;ODBC&gt;</b>	<b>ODBC - Open Database Connectivity</b> is a standard programming language middleware for accessing database management systems.
	<b>System Boundary - This is where all the interactions occur. Represents what is within the system and outside of it.</b>
	<b>Connection - Displays a relationship between boundaries.</b>

### 1.5.2 UML Deployment Diagram

## Deployment Diagram



### User/Testing Environments



## 1.6 Logical Data Dictionary

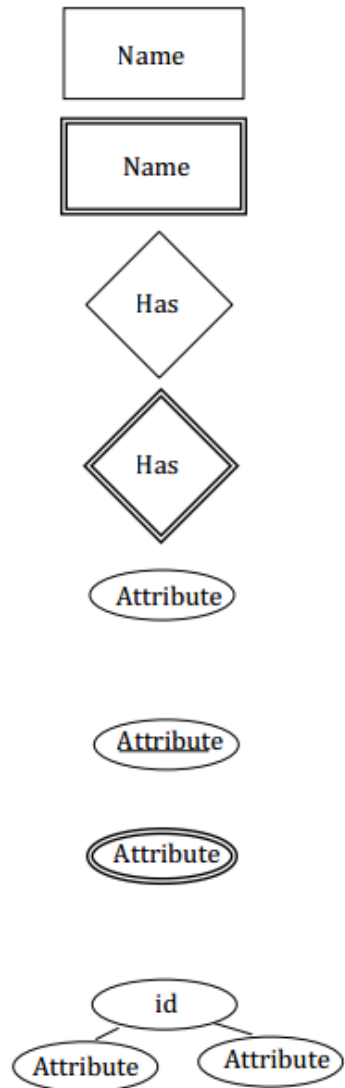
Data Name	Data Type	Data Size	Description	Acceptable Input	Good Example of Input	Notes
Username	String	6-15 Chars	Username	A-Z, a-z, 0-9	Dj04ferr	
User_pass	String	6-15 Chars	Password	A-Z, a-z, 0-9, ASCII 33-47	Pdj901584480	
UserID	String	6-15 Chars	Student ID	A-Z, a-z, 0-9	901445531	Unique
User_Fname	String	1-30 Chars	Username	A-Z, a-z	Jonny	
User_Lname	String	1-30 Chars	Username	A-Z, a-z	Doe	
User_email	String	6-50 Chars	Email	A-Z, a-z, 0-9	Dj04ferr@siena.edu	
PW_reset	Boolean	4-5 Chars	Password Reset Button	TRUE, FALSE	true	
User_Level	Integer	1 Integer	User Permission Ranking	0,1,2	2	0 = Student 1 = Faculty 2 = Admin
TeamID	String	6-15 Chars	Team Id	A-Z, a-z, 0-9	113	Unique
Number_on_team	Integer	1-2 Integers	Number of team members	1-10	4	
ClassID	Integer	6-15 Chars	Class Id	A-Z, a-z, 0-9	17A	Unique
Member_ID	String	6-15 Chars	ID for a team member	A-Z, a-z, 0-9	901445531	Unique
Member_FN	String	1-30 Chars	User First Name	A-Z, a-z, ', -	Hannah	
Member_LN	String	1-30 Chars	User Last Name	A-Z, a-z, ', -	Cooper	
Team_Number	Integer	1-2 Integers	Team Number	0-20	9	
Faculty_Member	String	1-15 Chars	Faculty member name	A-Z, a-z, ', -	Lim	
Faculty_ID	String	6-15 Chars	Faculty member ID number	A-Z, a-z, 0-9	901584480	Unique

## LOGICAL DATA MODEL (E/R DIAGRAM)

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## 2.1 E/R Diagram Legend

An ER Diagram is an entity-relationship model that abstractly describes a database.



**Data Entity** – Represents an object that can be translated into a table.

**Weak Entity Class** – An entity that must belong to an original data entity.

**Relationship Type** – Describes how two entities are related to one another.

**Weak Relationship Type** – Describes how a data entity is related to a weak entity

**Attribute** – A defining characteristic of an entity.

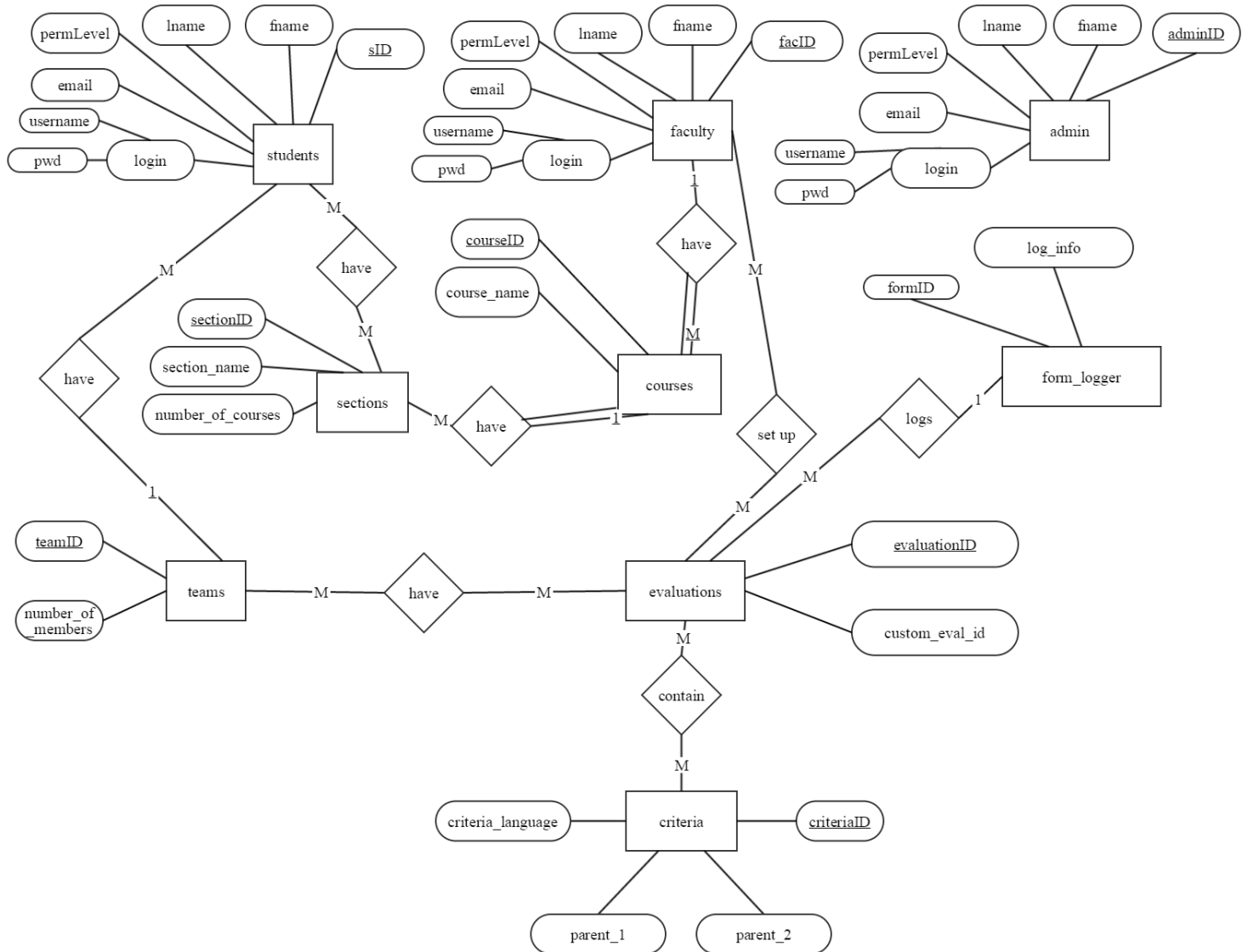
**Primary Key** – The main defining characteristic of an entity.

**Multi-valued Attribute** – A characteristic that can have multiple values for each definition of an entity.

**Composite Attribute** – A characteristic of an entity that can be further defined by additional characteristics.

## 2.2 E/R Diagram

The following image is the ER Diagram for Teams101 - Team Evaluation.



PHYSICAL DATA MODEL (RELATIONAL SCHEMA)

### 3.1 Relational Schema

**From the ER Diagram, a relational schema can be made. The relational schema is another way to describe a database.**

students (sID, login, username, pwd, fname, lname, email, permLevel)

faculty (facID, login, username, pwd, fname, lname, email, permLevel)

admin (adminID, login, username, pwd, fname, lname, email, permLevel)

courses( courseID, course\_name, sectionID (fk references sections) )

sections (sectionID, section\_name, number\_of\_courses, facID (fk references faculty table), custom\_eval\_id (fk references evaluations))

\*\*custom\_eval\_id is used if faculty users want to uniquely generate evaluations and questions on those evaluations for each specific section

teams ( teamID, courseID (fk references courses), number\_of\_members )

evaluations (evaluationID, custom\_eval\_id)

criteria ( criteriaID, criteria\_language, parent\_1, parent\_2)

parent\_1 would be the column (based on criteria spreadsheet below)

parent\_2 would be the row that it is in

criteria\_language is the actual language of the criteria i.e. "is ready for work"

criteria\_ID starts at 1 and goes up from there, to more easily access certain criterias

form\_logger (formID, log\_info)

	Do the work	Show up	Contribute	Cooperate
<b>Poor</b>	1.Provides minimal contribution 2.Doesn't do the work 3.When does the work = poor quality 4.Is not prepared	1.Doesn't show up for meetings 2.Shows up late 3.Appears unaware of time constraints 4.Distracted at meeting	1.Does not work on task 2.Takes group off task 3.Is focused only on own task 4.Does not participate in meeting	1.Dominates team 2.Is defensive in discussions 3.Does not listen to team 4.Acts in own self interest
<b>Good</b>	1.Defines the task to accomplish 2.Understands team goals 3.Completes quality of work on time 4.Is well prepared	1.Shows up for meeting 2.Shows up on time 3.Is ready for work 4.Uses meeting time wisely	1.Participates in meeting 2.Shares information openly 3.Focused on team goal 4.Stays on task	1.Listens to others 2.Open to feedback 3.Respects teammates 4.Is flexible with the team
<b>Great</b>	1.Organizes work of others 2.Makes sure teammates have what they need 3.Follows up with others 4.Volunteers to help others	1.Sets meeting agenda/goals/timeline 2.Leads process of scheduling meeting 3.Leads meeting discussion 4.Holds others accountable for showing up on time	1.Motivates teammates 2.Balances work on task with focus on team need 3.Integrates teammate efforts 4.Monitors progress towards goals	1.Actively involves others in conversation 2.Creates a positive work environment 3.Resolves differences among teammates 4.Promotes functional conflict

Formula for grade computation:

(100 points) - (# of (Good+Great questions)) = starting points

total PoorGoodGreat points =(Poor answer total)\*(-1) + (Good answer total)\*(1) + (Great answer total)\*(1)

starting points + PoorGoodGreat points = subtotal points





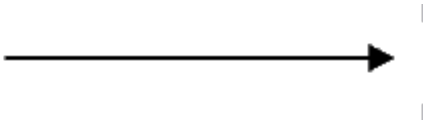

(subtotal points/100)\*(total questions/total possible points) = subgrade%

subgrade % /(# team members evaluating - 1) = final grade%

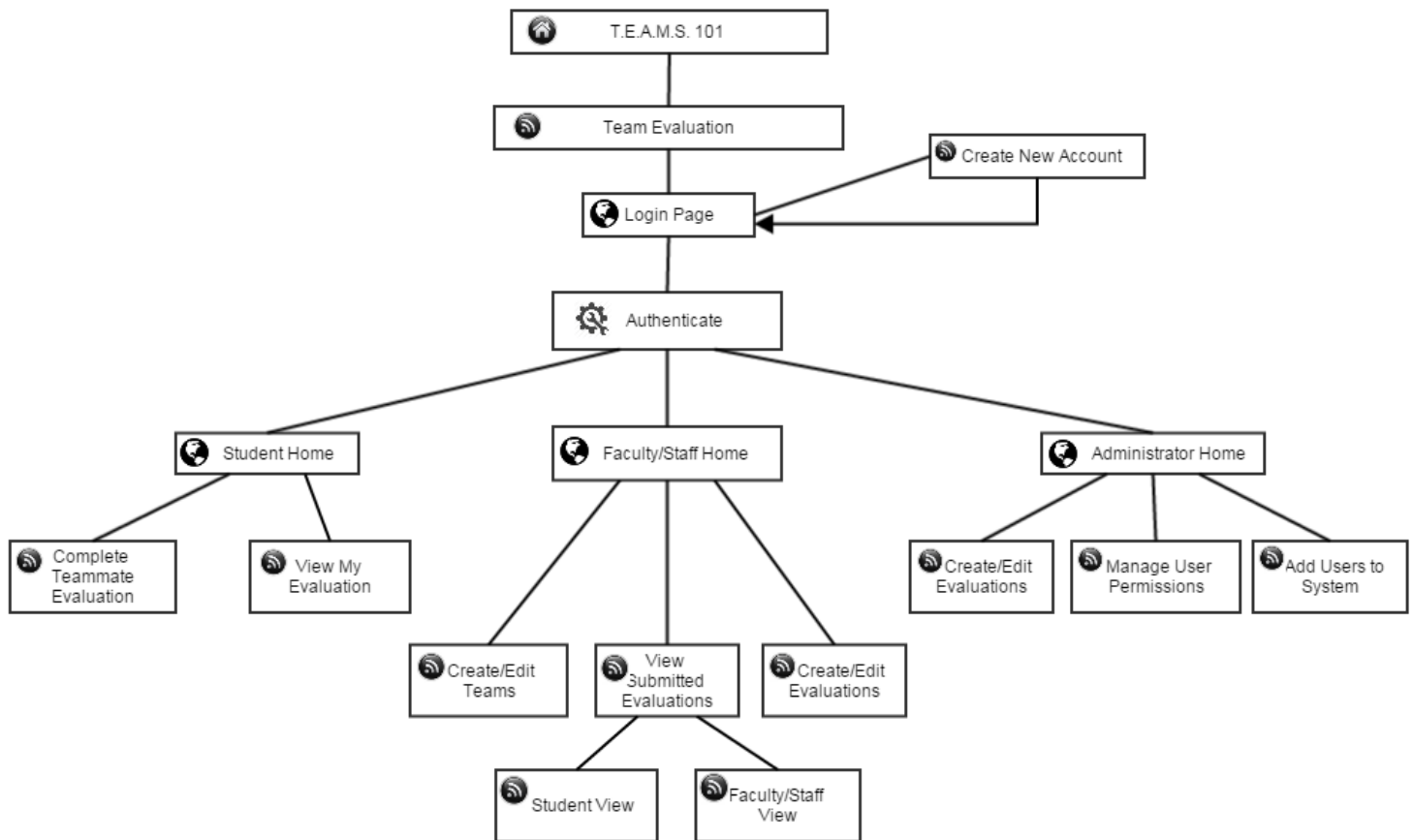
## ARCHITECTURAL DESIGN SPECIFICATION



## 4.1 Website Map Legend

	<b>Home Page:</b> The first page a user accesses when navigating to T.E.A.M.S. 101
	<b>System Interaction:</b> Option visible on current web page for user to interact with
	<b>Web Page:</b> Name of web page user is currently accessing
	<b>System Action:</b> Action being carried out by system
	<b>Page Redirect:</b> Relocates a user to another web page
	<b>Link:</b> Connection between web pages and system interactions

### 4.1.1 Login Website Map



## **4.2 Packaging Specification**

Dr. Eddy will receive the Teammate Evaluation software as well as a Web Application of T.E.A.M.S 101 electronically with all of the documentation after the Acceptance Test is completed. The software will be hosted on the server/domain given to Nova Tech, however, Dr. Eddy may choose to switch this to a personal server/domain name to use T.E.A.M.S 101 for team based projects. Nova will provide every component necessary to run the system to evaluate teammates for projects.

## TEST PLANS

### 5.1 Test Directory

System Test - Test Results for All Unit Tests						
Team Name		NOVA Tech				
Project Name		Team Evaluation				
Client Name		Dr. Erik Eddy				
Directory of Unit Tests (note: this could also be called an Index or a Catalog)						
Pass/Fail Status		Unit Number	Unit Test Name	Date Last Tested	Comments or brief description	Integrated with these units
#REF!	0%	1	<a href="#">Register</a>	#NAME?	Allows a user to create an account.	
F	0%	2	<a href="#">Login</a>	03/02/15	Allows a user to sign into Team Evaluation.	
F	0%	3	<a href="#">Take Evaluation</a>	03/02/15	Allows a user to complete an evaluation.	1,2

### 5.2 Unit Test 1

Pass/Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected result	Observed result	Comments	Tested By	Test Date
Failed	1.001	Username Contains Illegal Character	Enter a special character into username.	Enter password and press submit.	Null username and password.	Display "Username is not valid" message.	E-mail field (no username field) does not register invalid e-mails	Used "hello", "hello@", and "hello@yahoo" with no results	Justin	3/2/15
Failed	1.002	Password Contains Illegal Character	Enter a special character into password.	Enter username and press submit.	Null username and password.	Display "Password is not valid" message.	Nothing happened.	Used characters like < > ( ) % \$ # ;		
Failed	1.003	Username and Password Do Not Match	Enter a username with an incorrect password.	Press submit.	Null username and password.	Display "Username and password do not match" message.	No test Username/Password combination in place		Justin	3/2/15
Failed	1.004	Null Username Field	Leave username blank.	Enter password and press submit.	Null username and password.	Display "Enter a username" message.	Nothing happened.		Justin	3/2/15
Failed	1.005	Null Password Field	Leave password blank.	Enter username and press submit.	Null username and password.	Display "Enter a password" message.	Nothing happened.		Justin	3/2/15
Failed	1.006	Null Username and Password Field.	Leave username and password blank.	Press submit.	Null username and password.	Display "Enter a username and password" message.	Nothing happened.		Justin	3/2/15
Failed	1.007	Username Does Not Exist	Enter a username that has not been created.	Enter password and press submit.	Null username and password.	Display "Invalid username" message.	Nothing happened.		Justin	3/2/15
Failed	1.008	Link to Password Reset Form	Click "Reset Password" Button	Click "Reset Password" Button	Null username and password.	Redirect to "Reset Password" page.	Fails to reach requested URL		Justin	3/2/15
Failed	1.009	Correct Username and Password.	Enter valid username and password.	Press submit.	Null username and password.	No error message. Proceed to home page.	Nothing happened.		Justin	3/2/15

## 5.3 Unit Test 2

Pass/Fail Status	Test Number	Description	Action to perform test (input)	Steps to be Executed	State Before Test	Expected result	Observed result	Comments	Tested By	Test Date
Failed	1.001	Null Username Field	Leave username blank.	Fill out remainder of form and press submit.	Empty form	Display "Please enter Username" message.	Username field does not exist		Justin	3/2/15
Failed	1.002	One Password Field is Null	Leave either initial password or confirm password blank.	Fill out initial password or confirm password.	Null password fields.	Display "Cannot leave Password blank" message.	Nothing happened. Tested on Chrome and IE		Justin	3/2/15
Failed	1.003	Both Password Fields Are Blank	Leave both initial password and confirm password blank.	Press submit	Null password fields.	Display "Cannot leave Password blank" message.	Nothing happened. Tested on Chrome and IE		Justin	3/2/15
Failed	1.004	Password Contains Illegal Characters	Enter special character into password field.	Press submit	Empty form	Display "Invalid Password, please try again" message.	Nothing happened. Tested on Chrome and IE	Tried symbols like: < > ( ) . ; % \$ & with no yield.	Justin	3/2/15
Failed	1.005	Username Contains Illegal Characters	Enter special character into username field.	Press submit	Empty form	Display "Invalid Username, please try again" message.	Nothing happened. Tested on Chrome and IE	No Username field	Justin	3/2/15
Failed	1.006	Initial Password Is Not At Least 6 Characters Long	Enter a password with less than 6 characters.	Press submit	Empty form	Display "Password must be at least 6 characters long" message.	Nothing happened. Tested on Chrome and IE	Typed 1 character, then 3, then 5. No result.	Justin	3/2/15
Failed	1.007	Username is Already Taken	Enter a username that has already been created.	Press submit	Empty form	Display "Username is not available. Please try again." message.	No Username field		Justin	3/2/15
Failed	1.008	Initial Password and Confirmed Password Do Not Match	Enter different passwords into initial and confirm password.	Press submit	Empty form	Display "Passwords do not match" message.	Does not register different passwords		Justin	3/2/15
Failed	1.009	Email Is Not a Siena Email Account	Enter an email that does not end in "@siena.edu"	Press submit	Empty form	Display "Please enter a Siena College email address" message.	Nothing happened. Tested on Chrome and IE		Justin	3/2/15
Failed	1.010	First Name Is Null	Leave first name field blank.	Fill out remainder of form and press submit.	Empty form	Display "Enter first name" message.	Did not register that First Name was skipped, instead asked for last name to be given in e-mail format		Justin	3/2/15
Failed	1.011	Last Name Is Null	Leave last name field blank.	Fill out remainder of form and press submit.	Empty form	Display "Enter last name" message.	Did not register that Last Name was skipped, instead asked for first name to be given in e-mail format		Justin	3/2/15
Failed	1.012	Confirm Email Does Not Match Initial Email	Enter different email addresses into email and confirm email.	Fill out remainder of form and press submit.	Empty form	Display "Email addresses do not match" message.	There exists no "Confirm E-mail" on the Account Creation page		Justin	3/2/15

## PROTOTYPE CODE

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### 6.1 TEAMS 101 Application Platform Home

Visit <https://github.com/novatechnology/teams101/blob/master/index.php> to view the code.

### 6.2 About TEAMS 101

Visit <https://github.com/novatechnology/teams101/blob/master/about.php> to view the code.

### 6.3 Team Evaluation Log In

Visit [https://github.com/novatechnology/teams101/blob/master/team\\_evaluation/login/login.php](https://github.com/novatechnology/teams101/blob/master/team_evaluation/login/login.php) to view the code.

### 6.4 Team Evaluation Create An Account

Visit [https://github.com/novatechnology/teams101/blob/master/team\\_evaluation/login/create-account.html](https://github.com/novatechnology/teams101/blob/master/team_evaluation/login/create-account.html) to view the code.

### 6.5 Team Evaluation Home Page

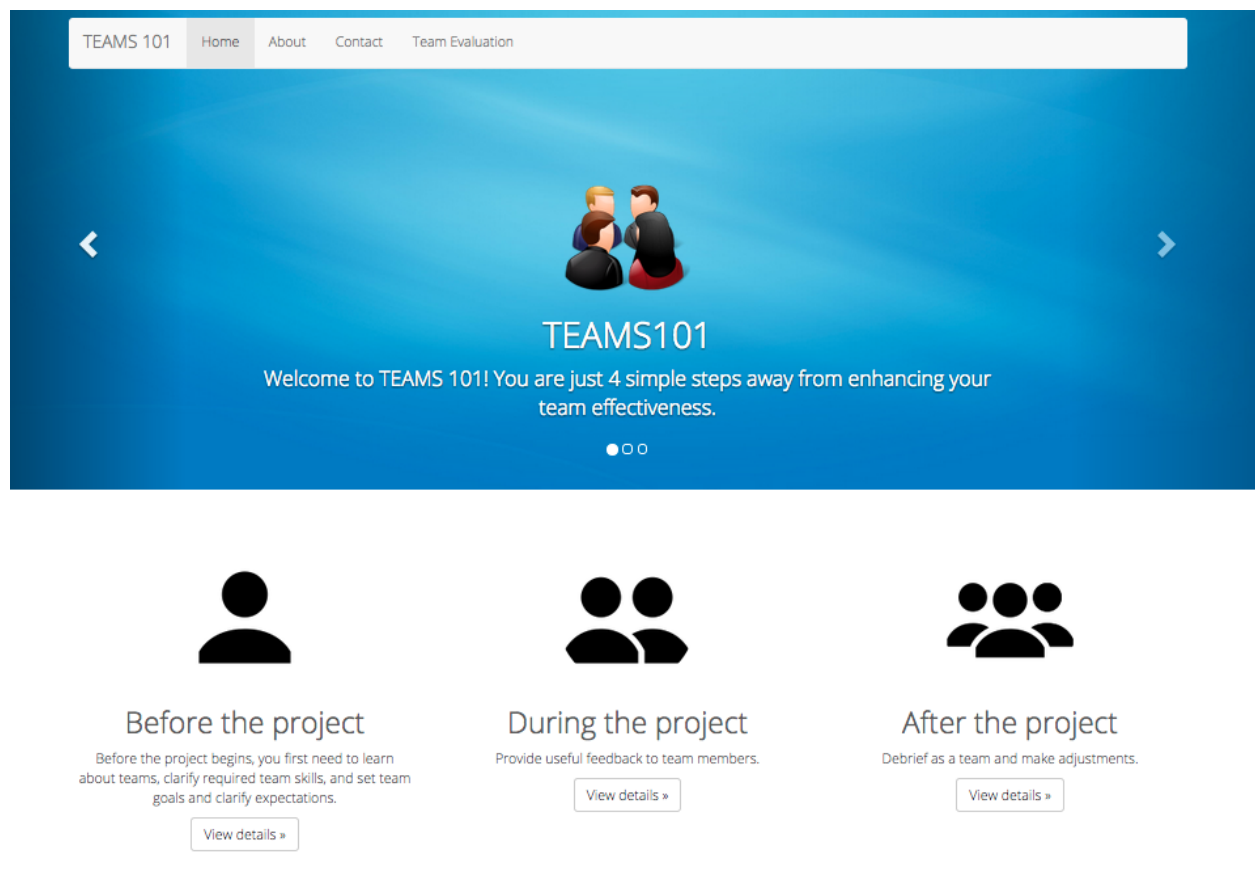
Visit [https://github.com/novatechnology/teams101/blob/master/team\\_evaluation/home.php](https://github.com/novatechnology/teams101/blob/master/team_evaluation/home.php) to view the code.

## PROTOTYPES

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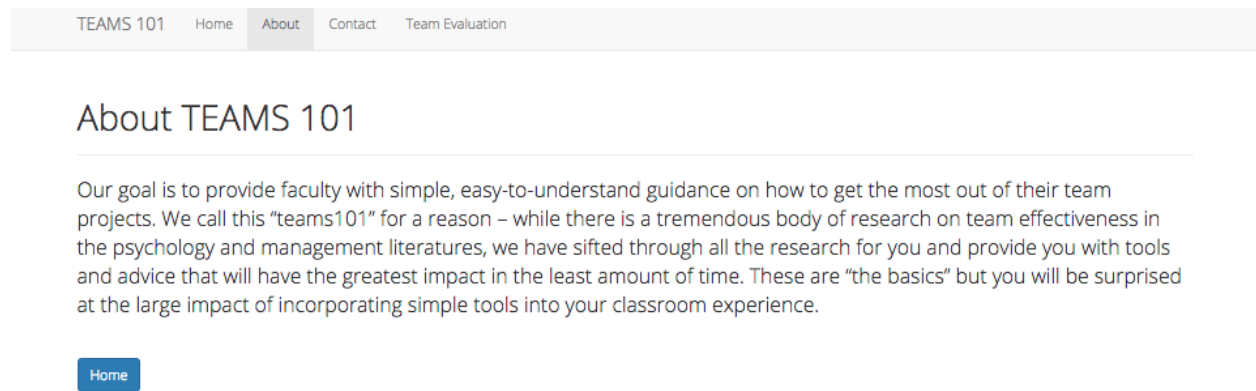
### 7.1 TEAMS 101 Application Platform Home

This is the home page for the TEAMS 101 platform. From here, the student will be able to navigate the site. They can read about the system, contact Dr. Erik Eddy or click Team Evaluation to log in.



## 7.2 About TEAMS 101

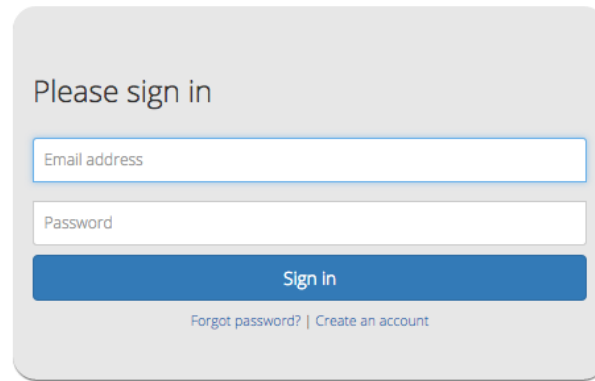
This tab provides the user with information about TEAMS 101.





## 7.3 Team Evaluation Log In

This is the portal where student users log in to Team Evaluation.



Please sign in

Email address

Password

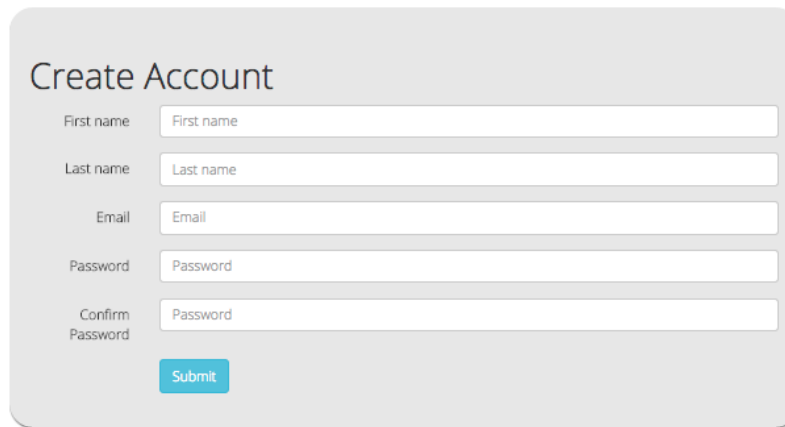
Sign In

[Forgot password?](#) | [Create an account](#)

The image shows a login form for 'Team Evaluation'. It is contained within a light gray rounded rectangle. At the top, the text 'Please sign in' is displayed. Below this are two input fields: 'Email address' and 'Password'. A blue 'Sign In' button is positioned below the password field. At the bottom of the form, there are two links: 'Forgot password?' and 'Create an account', separated by a vertical bar.

## 7.4 Team Evaluation Create An Account

This is the interface where students create Team Evaluation accounts.



The image shows a 'Create Account' form within a light gray rounded rectangle. The form has a title 'Create Account' at the top left. Below the title are five input fields, each with a label to its left: 'First name', 'Last name', 'Email', 'Password', and 'Confirm Password'. The 'First name' and 'Last name' fields have placeholder text 'First name' and 'Last name' respectively. The 'Email' field has placeholder text 'Email'. The 'Password' and 'Confirm Password' fields both have placeholder text 'Password'. At the bottom of the form is a blue 'Submit' button.

Create Account

First name

Last name

Email

Password

Confirm Password

## 7.5 Team Evaluation Home Page

Once the student logs in to Team Evaluation successfully, the home screen appears.

### Team Evaluation

Home	Take Evaluations	My Evaluations	About	Contact	TEAMS 101
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## Welcome back!

The TEAMS education and online support system provides education about what it takes to be a good team member based on the most recent research and access to a cutting-edge online support system that helps student teams maintain top performance.

[Get started today](#)

## APPENDIX/GLOSSARY

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### Glossary of Terms

**Actor:** Actors that interact with the system through uses/actors can be human or non human

**Agile method:** Agile software development is a group of software development methods in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams

**Apache HTTP Server:** Apache Hypertext Transfer Protocol Server, Web server application

**Apple Safari:** Web browser designed by Apple

**Data Stores:** A component of a Data Flow Diagram that represents a location in which information or data is stored

**Database:** Organizes data, typically through a computer, so that the data is easily accessible

**Data Flow:** Data/information flowing to or from a process in a Data Flow Diagram

**Data Flow Diagram:** A graphical representation of the "flow" of data through an information system

**Data Store:** Location where data is held temporarily or permanently in a Data Flow Diagram

**External Entities:** A component of a Data Flow Diagram that represents any human or non-human user of a Software System

**Functional Requirements Inventory:** Defines what the system will be able to do and what is testable about the system

**Gantt Chart:** Bar chart typically used to project scheduling

**GIMP (GNU Image Manipulation Program):** Image retouching and editing tool released as free and open-source software by creators Spencer Kimball and Peter Mattis

**Google Chrome:** Web browser designed by Google

**Inclusion Arrow:** An arrow that points from a scenario to another scenario to show that something must be included for the scenario

**Inheritance Arrow:** An arrow that points from one use to another; the use of being pointed at is the parent and the other is the sub

**Internet Explorer:** Web browser designed by Microsoft

**Level-0 Diagram:** A data flow diagram that represents a system's major processes, data flows, and data stores at a high level of detail

**Level-1 Diagram:** Provides an overview of the major functional areas of the undertaking

**Mozilla Firefox:** Web browser designed by Mozilla Foundation and the Mozilla Corporation

**mySQL (Structured Query Language):** Programming language designed to manage data and develop databases

**Non-Functional Requirements Inventory:** Requirements that are not necessarily specific features that exist in a system, but what the system is intended to do

**Nova Tech:** Team name

**Notepad++:** Text editor specializing in syntactic highlighting of various programming languages

**Oracle Database:** An object-relational database management system produced and marketed by Oracle Corporation

**Oraserv Database:** Siena College's database server

**Participation Line:** Shows what scenarios an actor can interact with in a UML Use Case Diagram

**Process:** Transforms or manipulates data in a Data Flow Diagram

**Prototype:** An early sample, model or release of a product built to test a concept

**Scenarios:** The actions that occur within a system and how the user interacts with the system

**SQL:** Structured Query Language, language used to query databases

**SQL Developer:** Program used to create and modify database

**System Boundary:** The boundary between the system and the external entities in a Data Flow Diagram

**TEAMS 101 - Team Evaluation:** Project name

**UML Use Case Diagram:** A type of behavioral diagram to present a graphical overview of the functionality provided by a system

**UML (Unified Modeling Language):** A specification language used in software engineering

**Unit Testing:**

A testing method where the system is broken down into units and each unit is tested

**UPC (User Permission Chart):** Chart that demonstrates the permissions of the different users in Team Evaluation

**Visual Paradigm:** a UML CASE Tool supporting UML 2, SysML and Business Process Modeling Notation (BPMN) from the Object Management Group (OMG). In addition to modeling support, it provides report generation and code engineering capabilities including code generation. It can reverse engineer diagrams from code, and provide round-trip engineering for various programming languages.

**Website Map:** A list of pages of a website accessible to users