

CCRS

Comprehensive Conference Registration System

Preliminary Design

Requested by:

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1 Product Overview and Summary

The Consortium for Computing Sciences in Colleges – Northeastern Region (CCSCNE) has participants involved in many different aspects of the conference. The participants include the Conference Chair, Committee Chairs, and attendees, which consist of Reviewers, Presenters and Vendors. People can also submit different types of submissions, but do not necessarily attend the conference. The client, Dr. Lim, has asked S.E.E. Solutions to create a web-based interface for registration. With this, the people involved will be able to easily register for the system. The Conference Chair should be able to configure the conference set up different things, such as rooms available, meal choices and prices. After a conference is set up, users can begin registering for the conference. Once a user is registered, Dr. Lim would like to present the same user with only information that is relevant to the role or roles the user signed up as. For example, if a presenter signs on, the presenter will be able to see when and where the presentation is. In addition to being able to register, Dr. Lim would like to have the system be able to let users submit different types of submissions and review them. After the submissions have been reviewed, the committee chair should be able to accept and reject certain submissions. The system should also have the ability to create a schedule for the conference. This schedule will include all the times that presenters are going, when there will be vendors, and when/if there are breaks for the conference. Lastly, the Conference Chair should have the ability to change the schedule if needed.

2 User Case Narratives

User Case Narratives describe the users that will interact with the systems. Each user case narrative will explain how that particular user will interact with the system. The users that will interact with S.E.E. Solutions' Comprehensive Conference Registration System (CCRS) will be described in the following paragraphs.

2.1 Conference Chair

The Conference Chair is in charge of everything in the conference. The Conference Chair is also the system administrator.

The Conference Chair logs on to CCRS and is able to see who has registered for the Consortium for Computing Sciences in Colleges Northeastern Region (CCSCNE). Once the Conference Chair enters a unique username and password the Conference Chair is able to access any information from the conference. The Conference Chair can set details about the conference including what days the conference is, what meals will be provided, what topics the conference is about, what payment options there are, deadlines for submissions, room locations, and the logos for the conference. The Conference Chair can then check the information from people who have registered to make sure everyone has paid. While logged in, The Conference Chair can also view the submitted material for the conference. The Conference Chair is able to see what the reviews on all submissions to the conference. The Conference Chair is able to have some input as to what submissions are accepted into the conference.

The Conference Chair has the ability to create accounts in CCRS and give the accounts access to certain information. The Conference Chair logs onto CCRS and creates an account for the Committee Chairs. The Conference Chair adds a username and password for each Committee Chair. The Conference Chair limits the information each Committee Chair can see based on what is important for to get the job done. The Conference Chair is able to see the schedule created by the system once all the submissions have been selected. The Conference Chair can examine this schedule and make any desired changes. The Conference Chair can update the schedule information up to the date of the conference.

2.2 Registration Committee Chair

The Registration Committee Chair keeps track of all the registration information.

The Registration Committee Chair logs into CCRS and immediately sees the list of people that have registered for the conference. The Registration Committee Chair takes the list of emails for everyone that has registered and begins to type an email to let everyone know the update.

The Registration Committee Chair has also decided to send out a reminder email for the people who have not paid for the conference yet. While still logged in o CCRS the Registration Committee Chair examines the list of people is able to easily determine who has paid and who has not. The Registration Chair is able to send an email to the people who have not paid yet. Once payment is received the Registration Chair is able to update the payment information for each the appropriate attendee.

2.3 The Review Committee Chair

The Review Committee Chair is in charge of making sure all submissions have reviews.

The Review Committee Chair logs into CCRS with the username and password provided by the Conference Chair. The Review Committee Chair is able to see all the submissions that have been submitted to CCRS. The Review Committee Chair has access to all the reviews and is able to make sure each submission has a review. The Review Committee Chair can reassign submissions to a new Reviewer if needed.

2.4 Committee Chair

The Committee Chair is in charge of their assigned committee. The committees are for panels, posters, tutorial, demo, workshop, paper.

The Committee Chair will be able to log in to CCRS with the username and password provided to them by the Conference Chair. Once logged in the Committee Chair can change the password that was provided by the Conference Chair. The Committee Chair can have access to all information of that committee. The Committee Chair has access to all of the submissions of the particular type and the reviews on the submissions. The Committee Chair helps decide which submissions of the particular type get selected to present at the conference. The Committee Chair has access to each submitter's email and notifies the submitters of acceptance or rejection via email. The Committee Chair can log in and out of CCRS.

2.5 Conference Attendee

A Conference Attendee is anyone who physically attends the conference. A Conference Attendee includes a Vendor, a Presenter, a Programming Contest Participant, and a Faculty Advisor.

A Conference Attendee creates a username and password for CCRS. The Conference Attendee is then able to log into CCRS to register for the CCSCNE conference. The Conference Attendee enters all the information necessary for registration to the conference. The Conference Attendee then pays the registration fee for the conference. The Conference Attendee can select many different types of roles at the conference and can select different meal options based on what the Conference Chair configures. Once the information is submitted to CCRS database, CCRS sends a confirmation email to the Conference Attendee. The Conference Attendee can log back into CCRS to change any information necessary.

2.6 Presenter

A Presenter is an attendee who presents a submission at the conference. After the Presenter has been accepted by a Reviewer, the Presenter is given a time slot to present.

A Presenter will be notified via email upon acceptance into the conference. The Presenter will be able to go to CCRS and will be able to easily register a username and password. Once a Presenter is logged on, the Presenter will be shown all of the information that is necessary for the role. This information includes the time the Presenter will be presenting and the place of the presentation. A Presenter will be able to log out of the system at any time the Presenter wants.

2.7 Vendor

A Vendor is someone who has been given permission by the Conference Chair to attend the conference in order to promote a product or company.

A Vendor will have the ability to go to CCRS and register a unique username and password. Once the Vendor is logged on the Vendor will be presented with material that is unique to the Vendor. When the Vendor is logged on the Vendor will have the option of entering how much space the Vendor needs. The Vendor will also be able to request certain things that the Vendor needs such as audio and visual things. For example these will include televisions, extension cords, speakers, etc... The Vendor will be able to log out of the system at any time the Vendor wants.

2.8 Faculty Advisor

Each programming contest team participating in the CCSCNE contest will have one Faculty Advisor. The Faculty Advisor will be able to register the Faculty Advisor's programming contest team via CCRS. The Faculty Advisor will register team details such as the college the team represents and names and emails of Programming Contest Participants on the team. The Faculty Advisor will pay for the Faculty Advisor's registration fee during this registration. CCRS will handle any input errors committed by

the Faculty Advisor before submission. Once the Faculty Advisor has registered, CCRS will send a confirmation email to the Faculty Advisor.

2.9 Programming Contest Participant

Each Programming Contest Participant must register individually. The Faculty Advisor must register for the conference before the Programming Contest Participant can register for the conference. CCRS will send a link to the CCRS registration page via email to the Programming Contest Participant once the Faculty Advisor registers for the programming contest. The Programming Contest Participant will also be able to go to the CCRS homepage and register as a participant in the programming contest if the Faculty Advisor has already registered. The Programming Contest Participant will be able to fill in the registration form and pay the registration fee. CCRS will handle any errors in user input before form submission by notifying the Programming Contest Participant of the errors. Once the Programming Contest Participant has submitted, CCRS will send a confirmation email to the participant and the Faculty Advisor of the team.

2.10 Submitter

A Submitter is someone who will enter a submission. Submissions can include papers, posters, demos, tutorials, panel, workshop. After the submission is entered the submission will be reviewed. If the submission is accepted the Submitter will become a Presenter.

The Submitter will self register with CCRS. While registering the Submitter will provide information such as name and e-mail address. The Submitter will receive a confirmation email after registration. The Submitter will upload the submission or submissions to be reviewed and provide the topic of each submission. The Submitter will receive an email when the reviews of the submissions are viewable. The Submitter will log in to CCRS to view the reviews. The Submitter will be notified of acceptance or rejection by the Committee Chair.

2.11 Reviewer

A Reviewer is someone who evaluates all submissions that are sent through the system. The Reviewer will not review anything that is from the Reviewer's own affiliated organization, outside the area of the Reviewer's expertise or submission category.

The Reviewer will self register with CCRS. While registering, the Reviewer will provide information such as name, e-mail address, and specific areas of interest that could be subjects of submissions. The Reviewer will receive a confirmation email after registration. The Reviewer will receive an email when there are submissions on CCRS that have been assigned to review. The reviewer will sign in to CCRS and be able to view a list of submissions to review. The Reviewer will download submissions for review. The Reviewer will upload the numerical and written reviews for each submission.

3 Use Case Diagram

A Use Case Diagram shows how users will interact with the system. These users are called actors and can be human or nonhuman. The actors interact with the functions of the system called use cases. The use cases each actor interacts with describes the activities each actor can perform in the system.

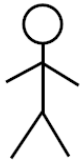
3.1 Use Case Diagram Legend



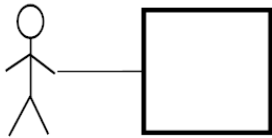
System Boundary: Actors are located to the left and right of the boundary and interact with uses found inside the system boundary.



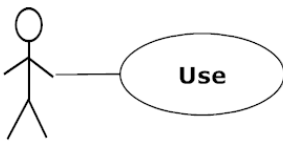
Use Case: Activities that the actors interact with to use the system.



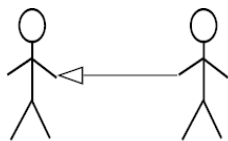
Actor: Interacts with the use cases of the system. Actors to the left of the system boundary are human and actors to the right are non-human actors.



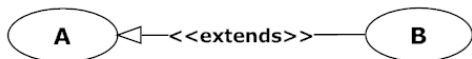
Actor interacts with all use cases in the system



Actor interacts with use case



Right-side actor inherits properties from left-side actor

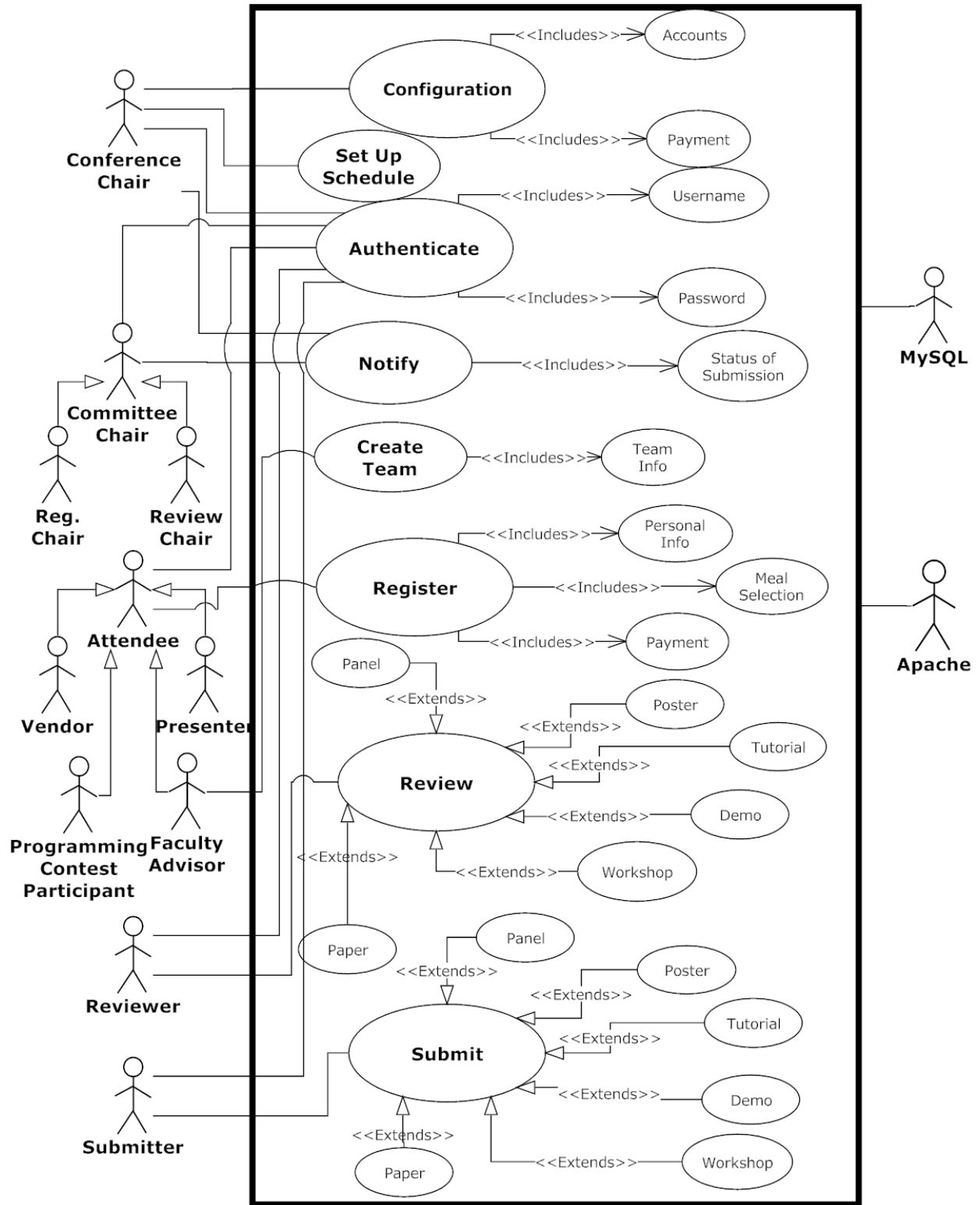


Use case B contains properties of use case A



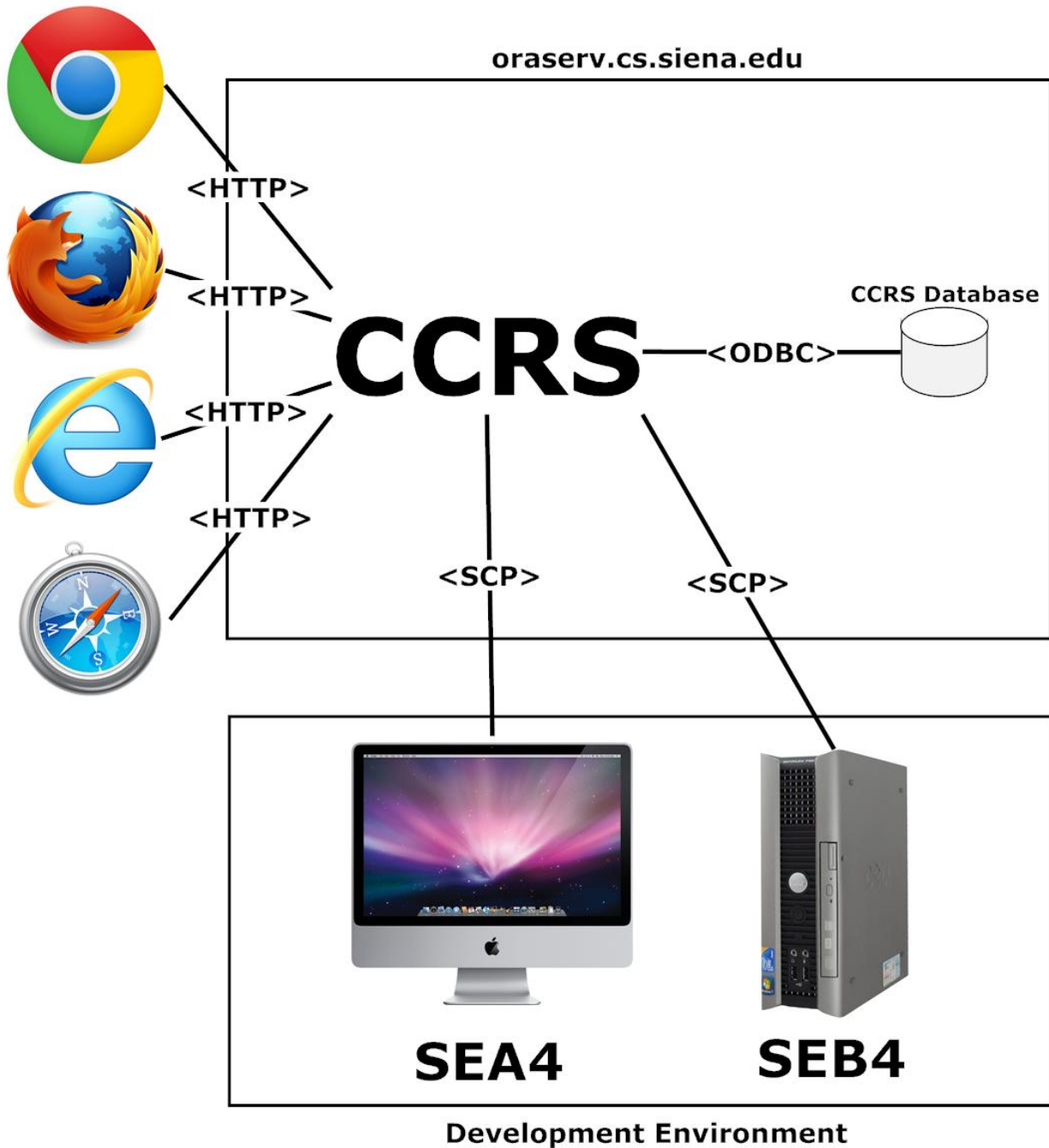
Use case A requires and contains use case B

3.2 UML Use Case Diagram



4 UML Deployment Diagram

Deployment Diagrams are a Unified Modeling Language (UML) based diagram used to show devices and execution environments for a system. The UML Deployment Diagram represents the physical layout of the System. The Deployment Diagram for CCRS below shows the different browsers connecting via HTTP to CCRS. The UML Deployment Diagram also shows the development environment connecting via SCP. Finally CCRS is using other components such as a database connecting via ODBC.



5 Activity Diagram

An Activity Diagram shows how users can interact with the different processes of CCRS. Each diagram shows the flow of control through the process.

5.1 Activity Diagram Legend



Initial Node: Start point to flow of activity



Activity: Actions performed

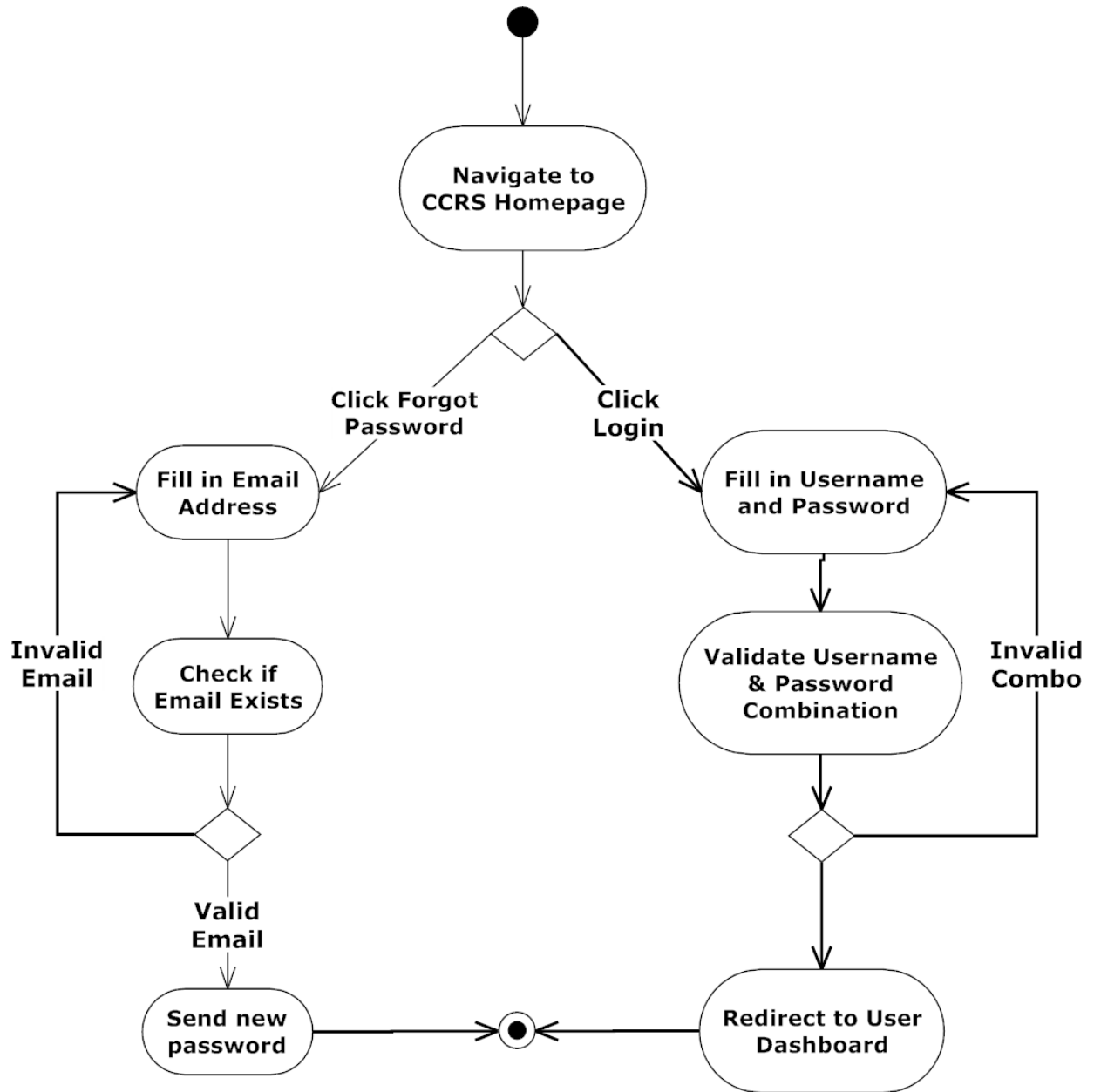


Decision Node: Splits the flow based on decision

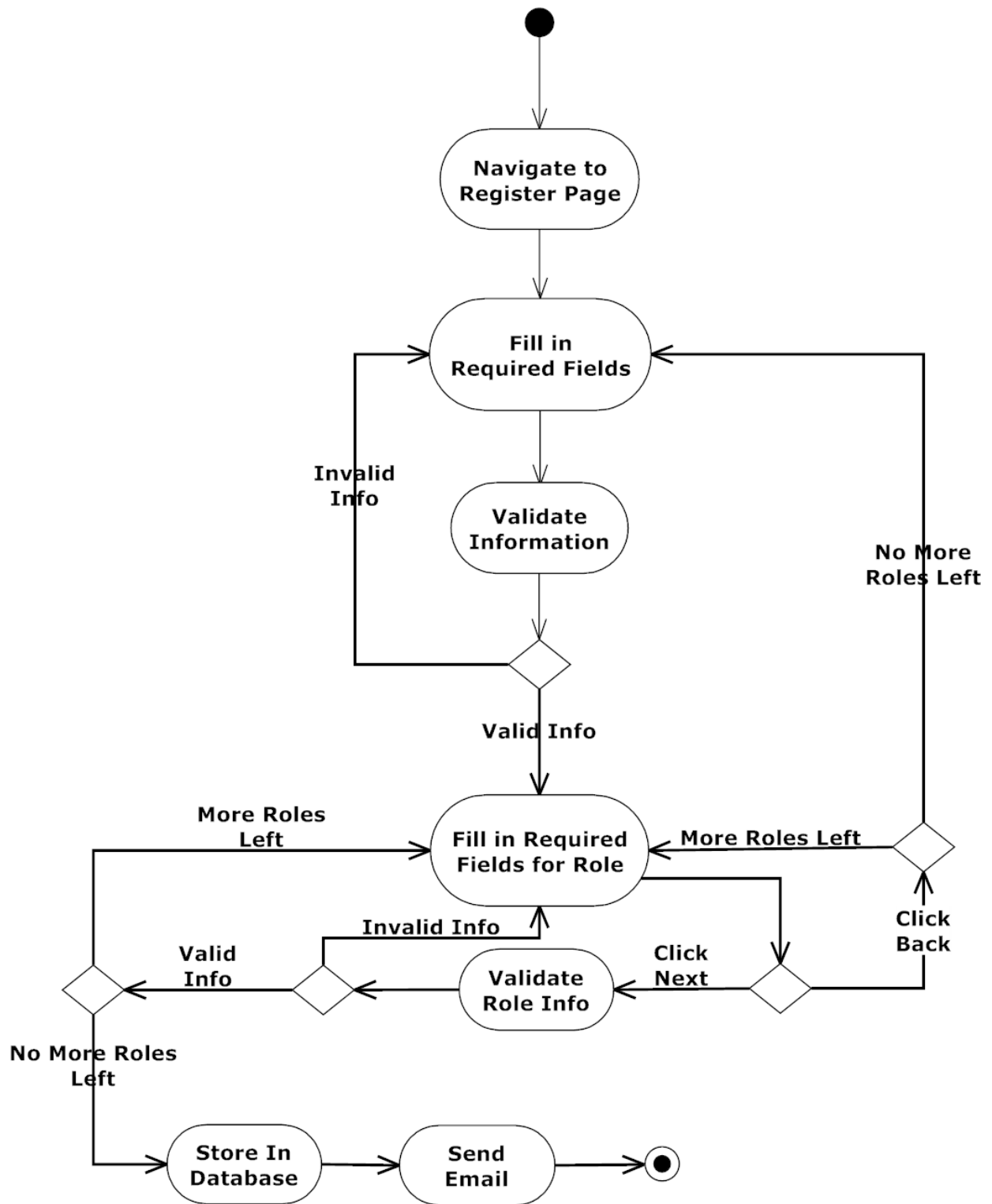


Final Node: End point to all activity

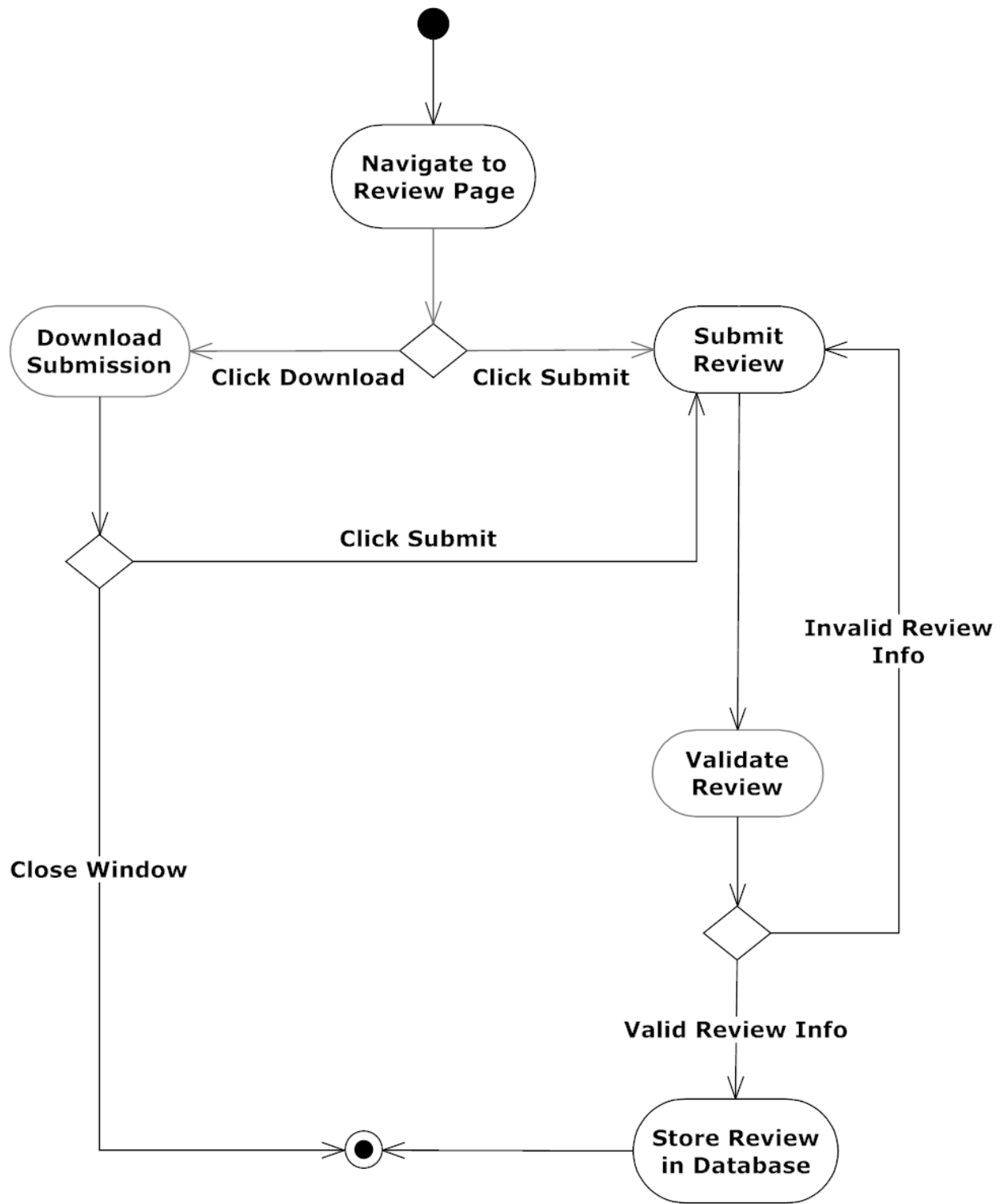
5.2 Authenticate Activity Diagram



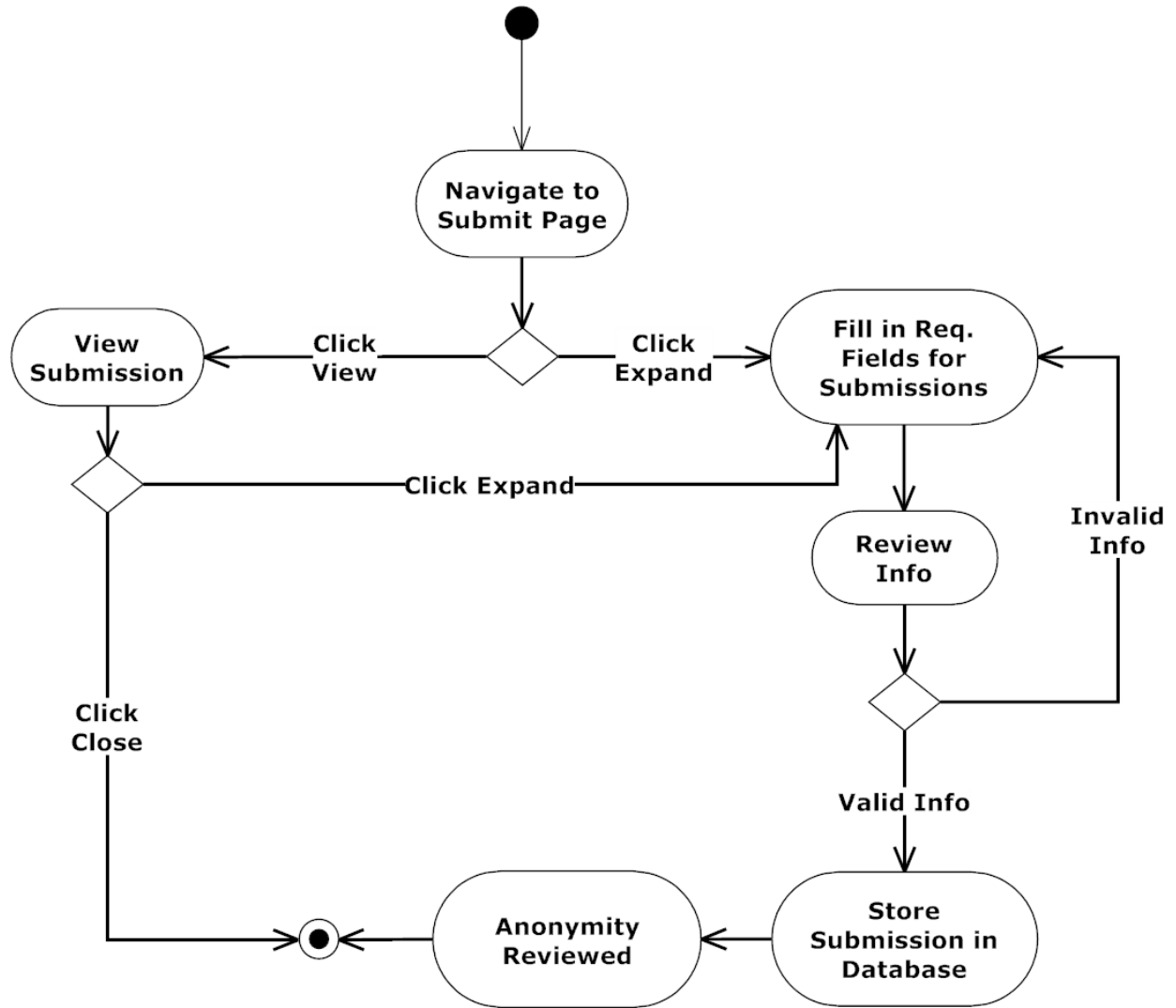
5.3 Register Activity Diagram



5.4 Review Activity Diagram

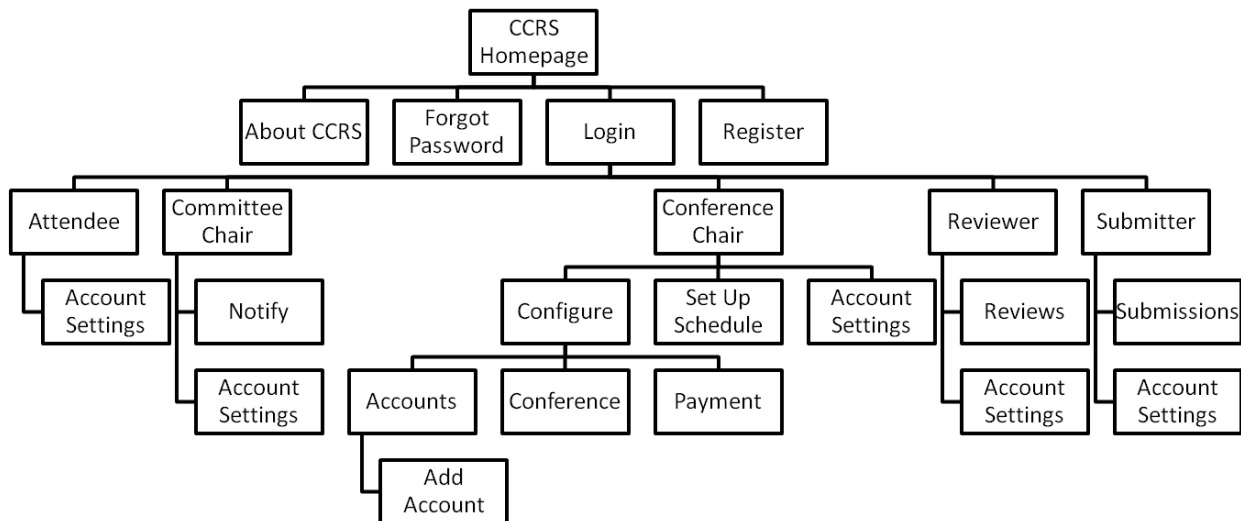


5.5 Submit Activity Diagram



6 Website Map

A website map is a way to show where a link will direct a user in a page. For example if a user is on the CCRS homepage, then the website map will show four different places a user can go. All pages that can be accessed in CCRS is represented in the website map.

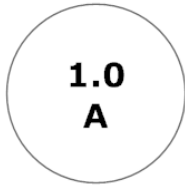


7 Data Flow Diagrams

The following data flow diagrams illustrate the movement of data within CCRS. These diagrams show how CCRS creates, moves, stores, and transform data within the system. The diagrams are broken into multiple levels; each level demonstrates a more specific implementation of the processes from higher levels. Below is the hierarchy of the levels:

- Context Diagram - Overview of the system and the system's interactions with the users and databases.
- Level 0 - Expansion of the CCRS process seen in the Context Diagram
- Level 1 - Expansion of process found in the Level 0 diagrams
- Level 2 & 3 - Further expansion of detail on processes found in higher levels

7.1 Data Flow Legend



Process: Represents a transaction or transformation of the data. Process name and number are shown within circle.



External Entity: A source or sink of data in the system. May added data to the system or receive data from the system. External entity name is shown within rectangle.



Data Flow: Indicates direction of the flow of data in the system. Arrows are labeled with a description of the data that is being passed along.

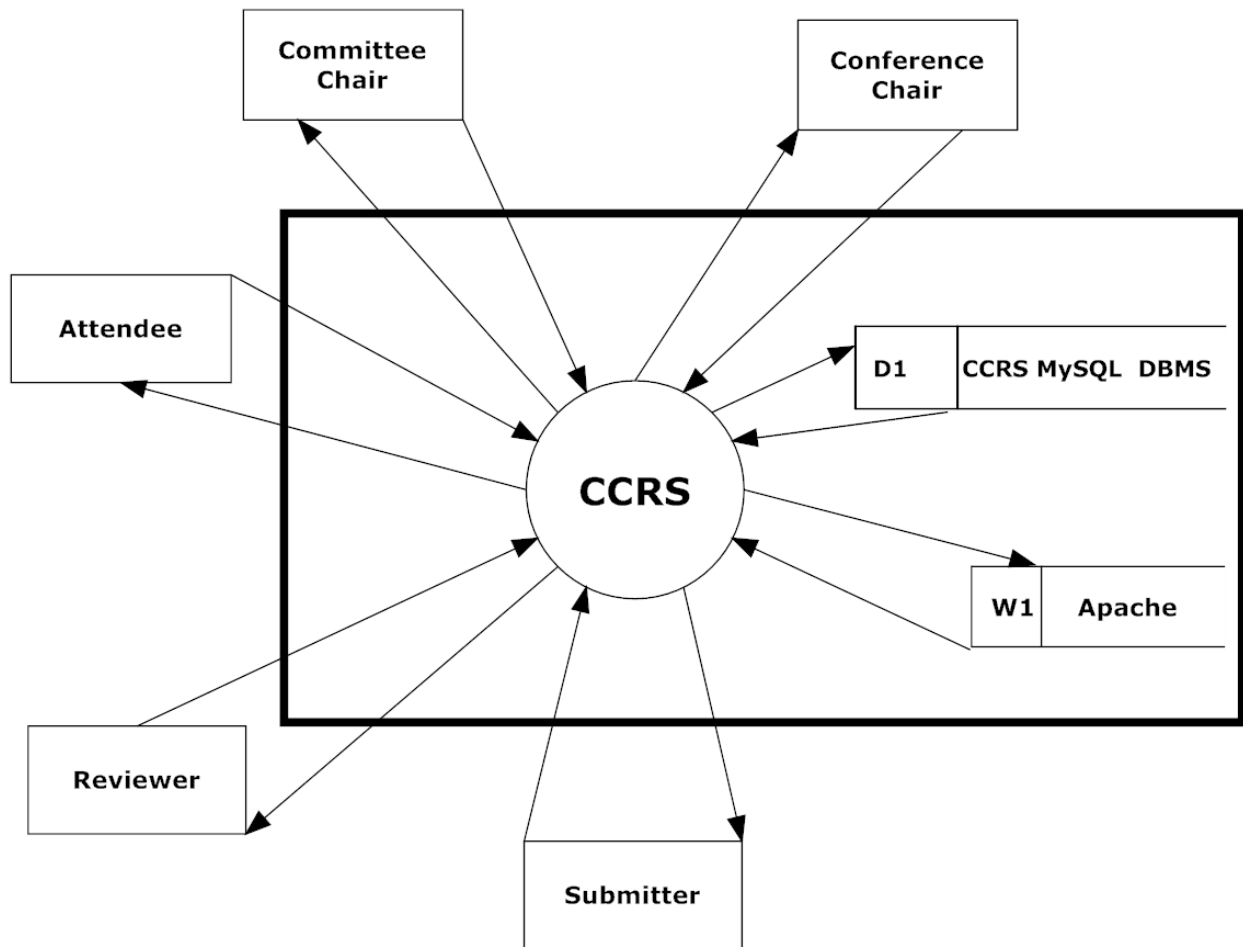


Data Store: Represents area where data is stored. T is the type of data stored and E is the data store name. Types of data stores are D - Database and W - Web server.



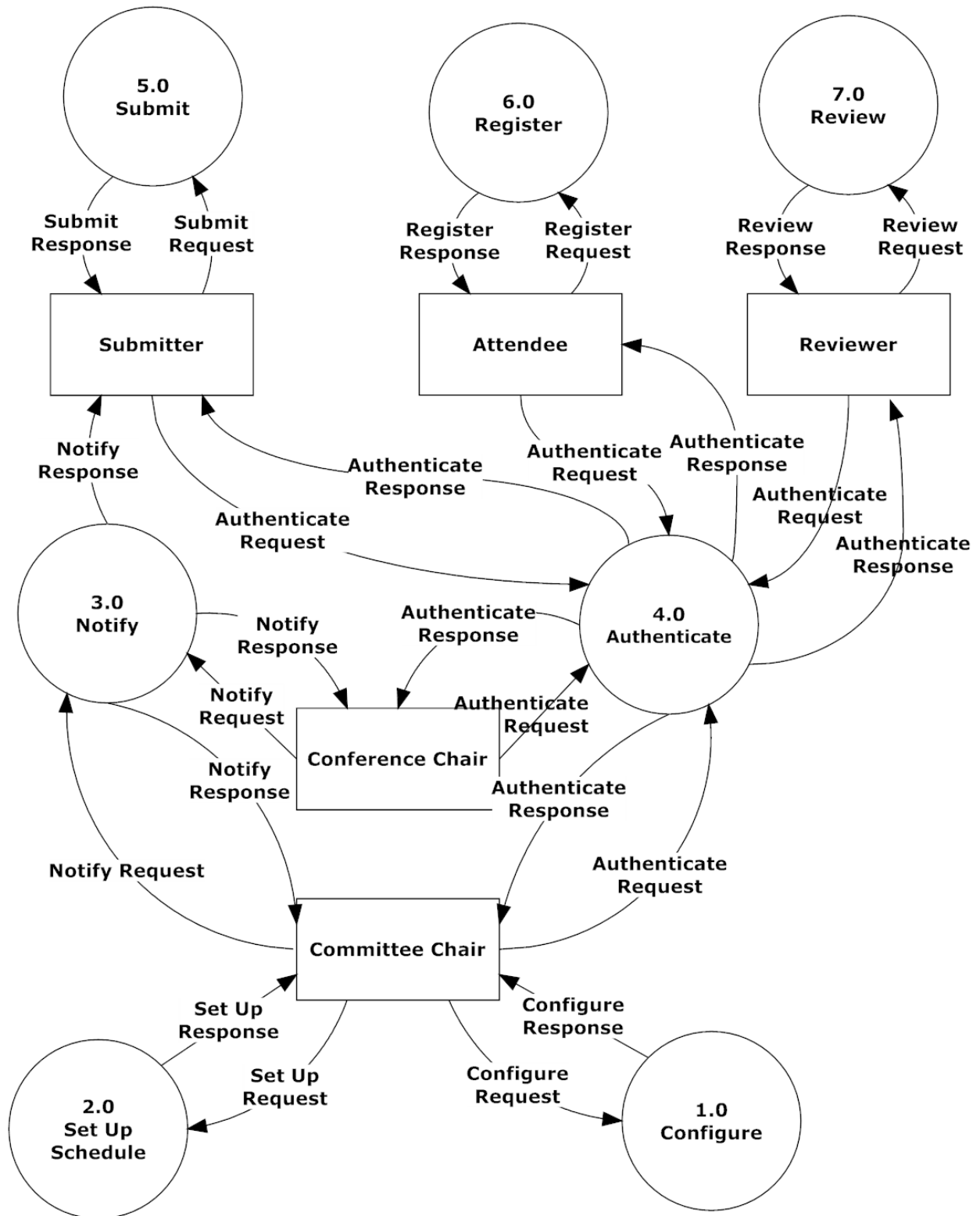
System Boundary: Declares scope of project. Any entity outside of the boundary is outside of CCRS control.

7.2 Context Diagram



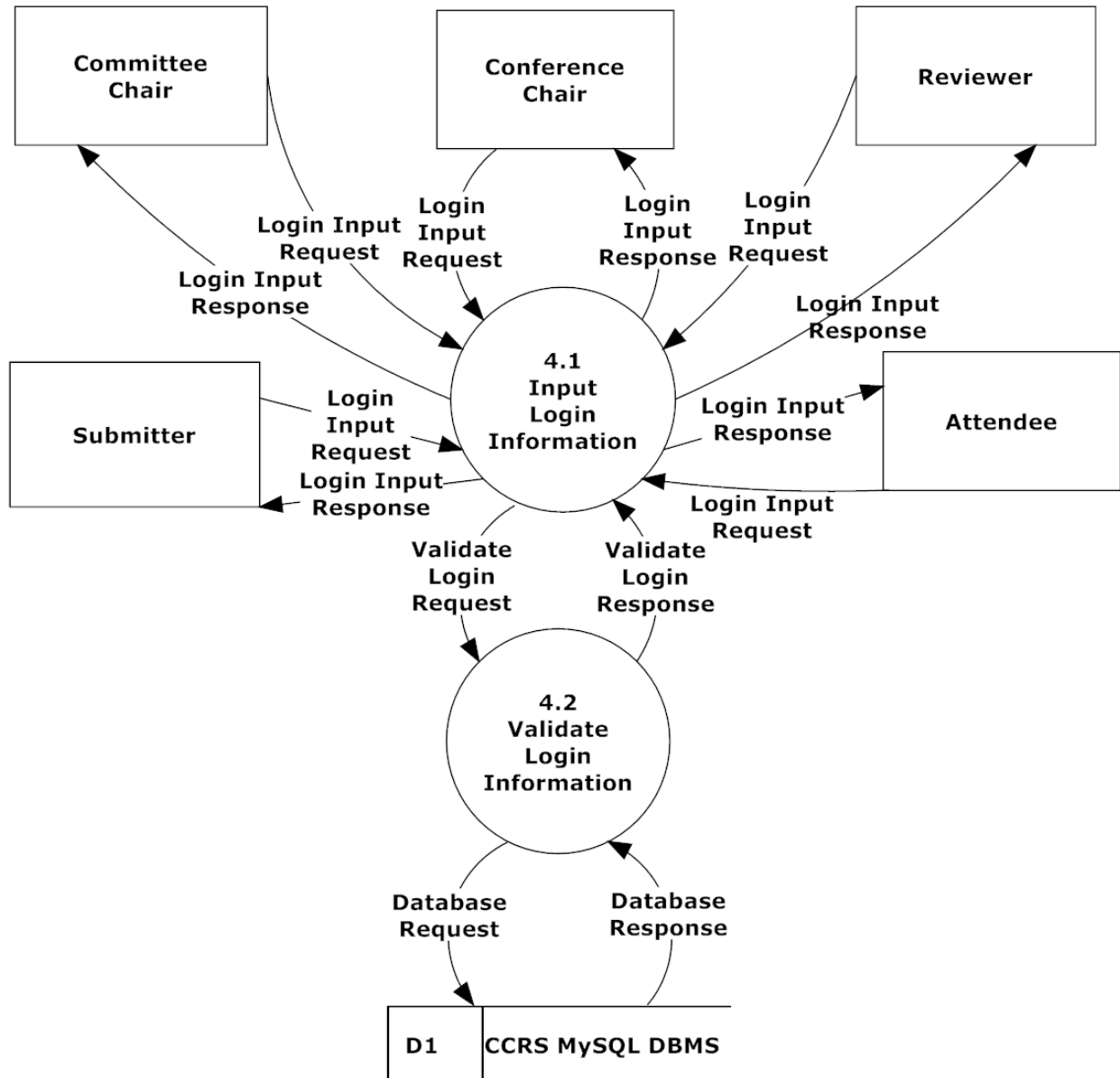
The system boundary will no longer be included on any of the following diagrams. All entities are considered to be external.

7.3 Level 0 Diagram

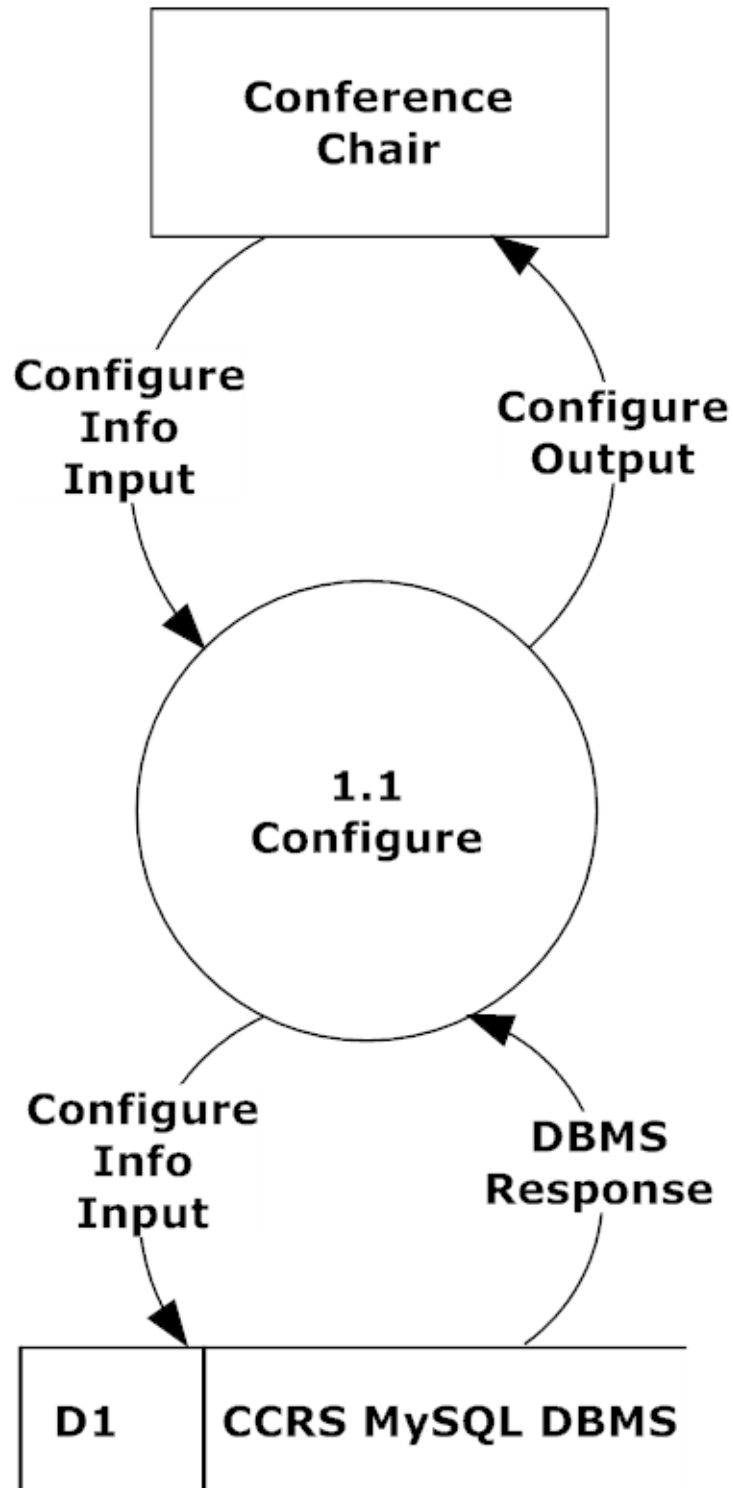


7.4 Level 1 Diagrams

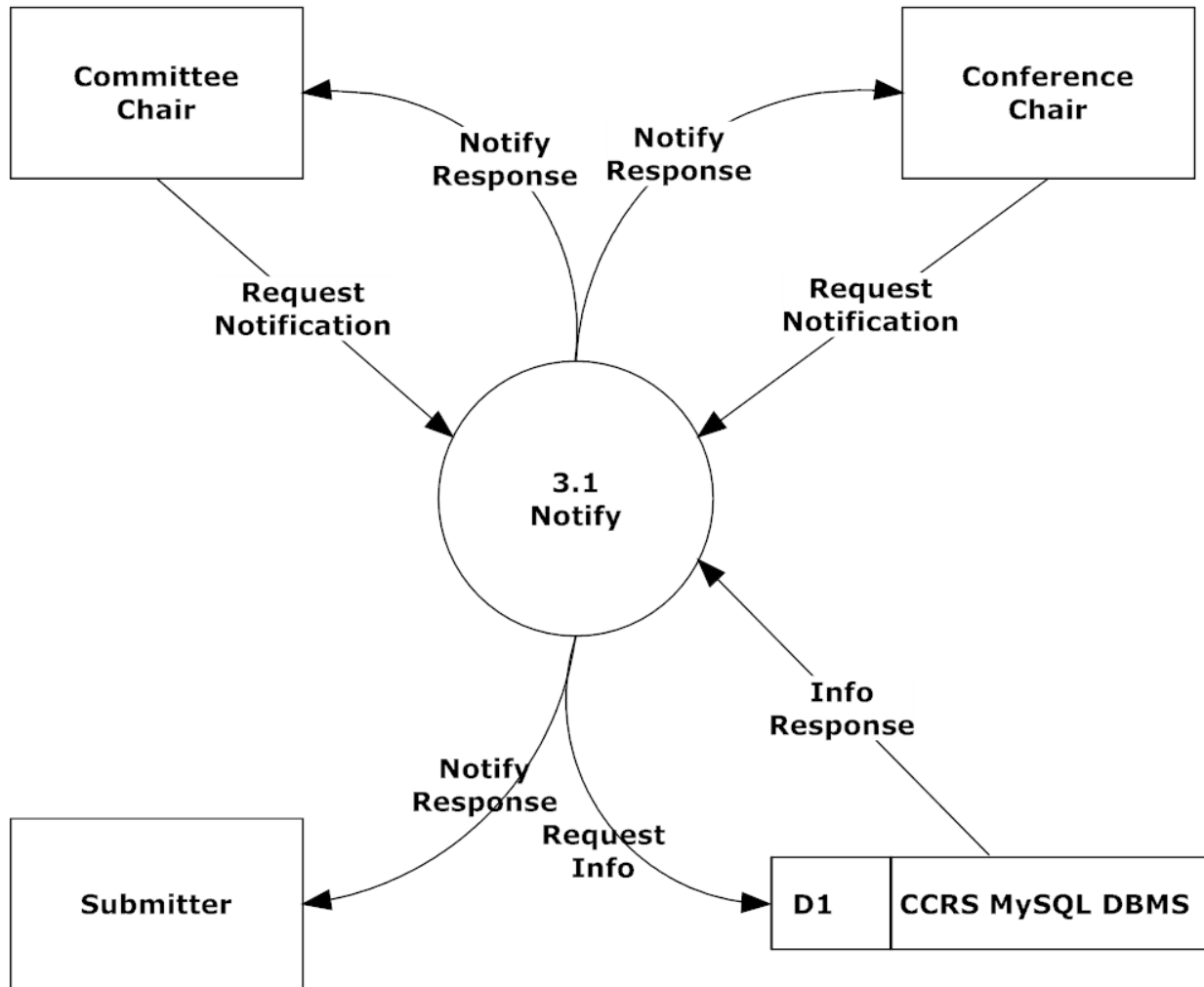
7.4.1 Authenticate Level 1



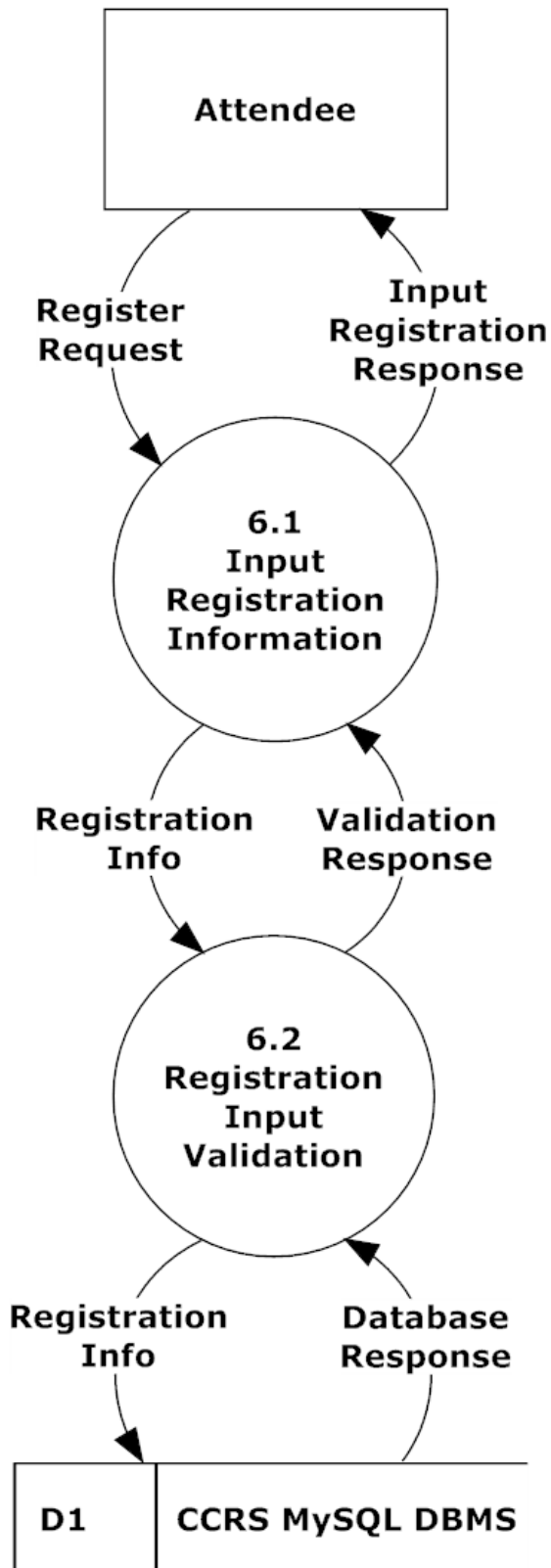
7.4.2 Configure 1.0 Level 1



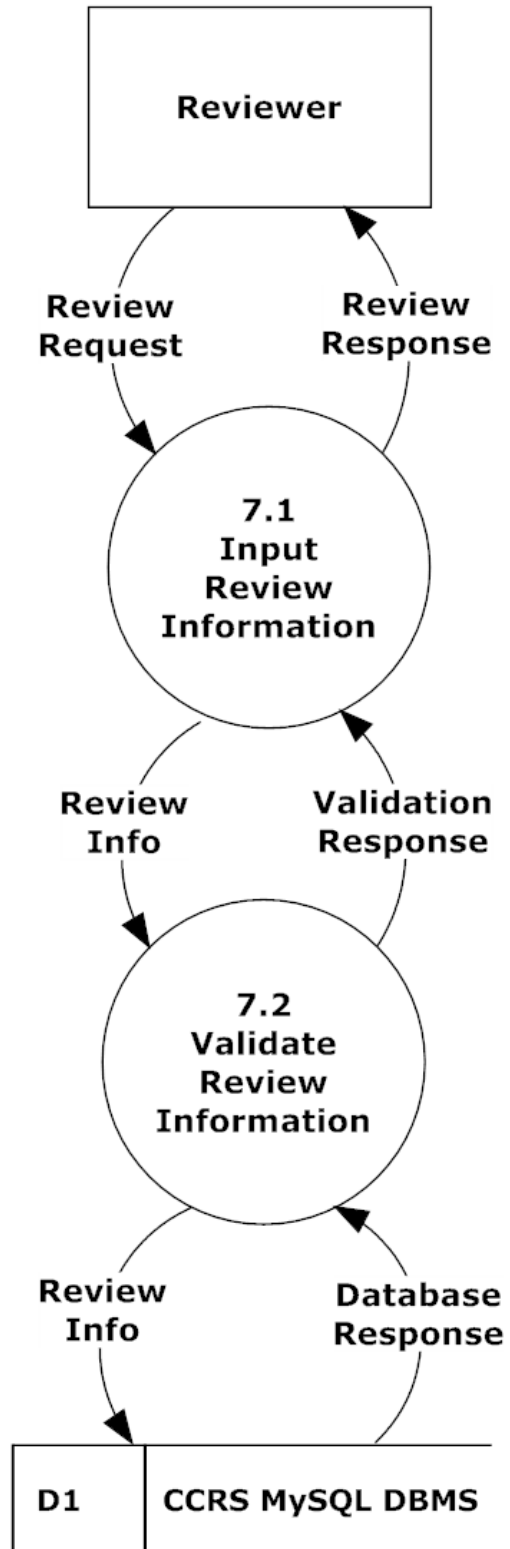
7.4.3 Notify 3.0 Level 1



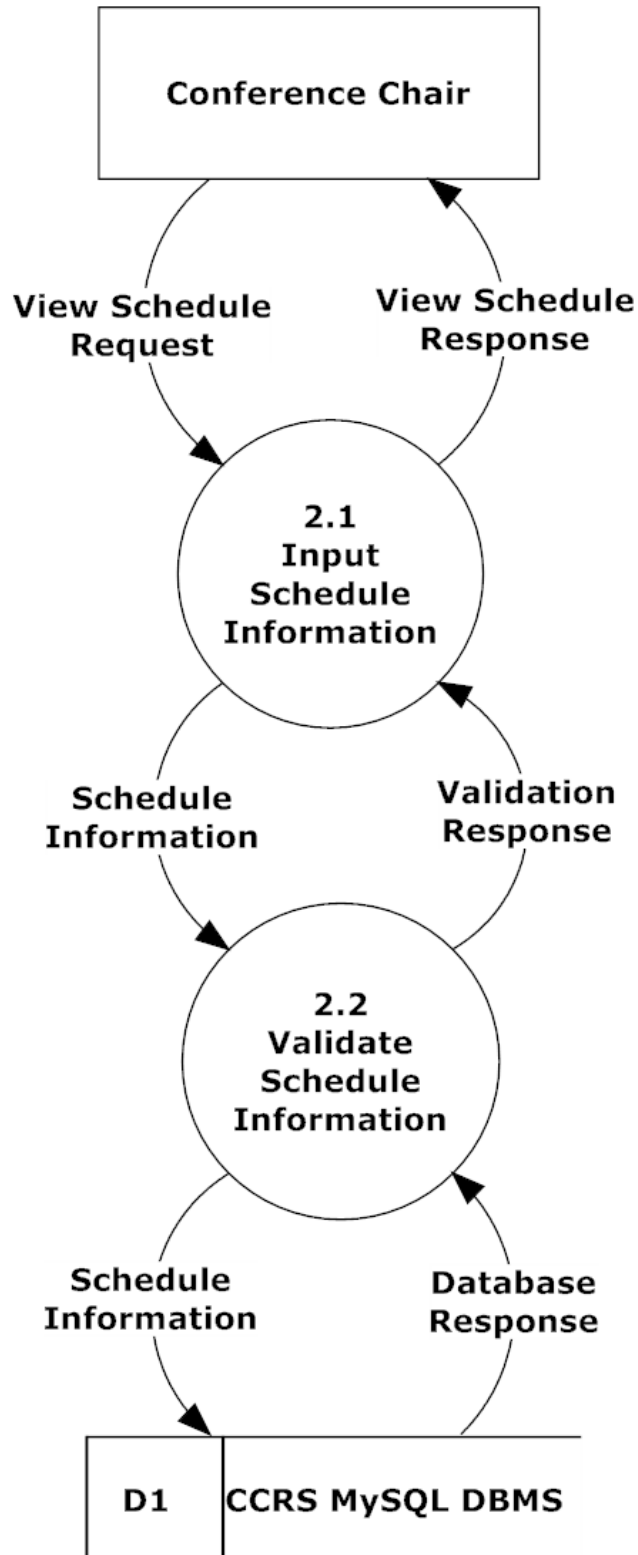
7.4.4 Register 6.0 Level 1



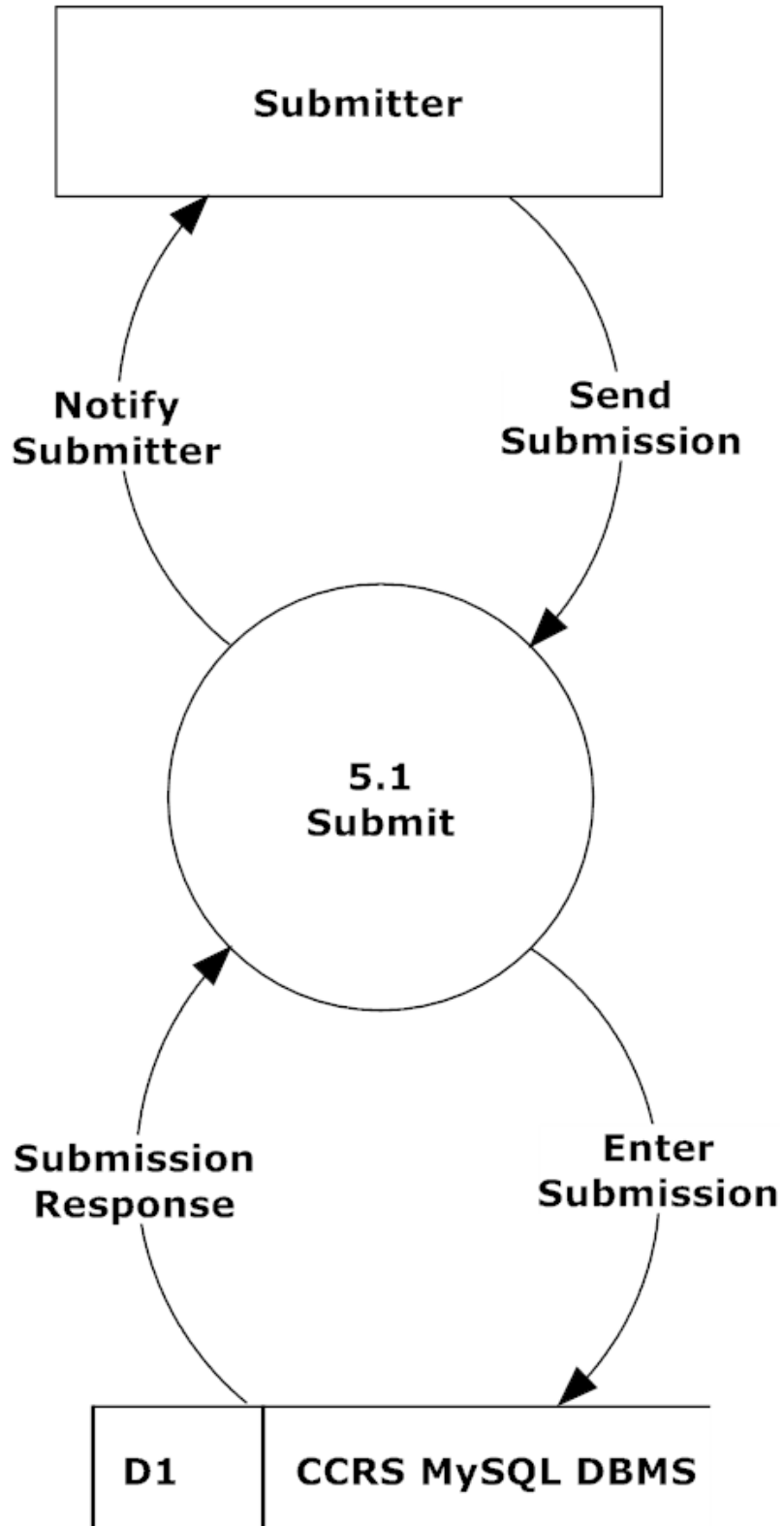
7.4.5 Review 7.0 Level 1



7.4.6 Set Up Schedule 2.0 Level 1

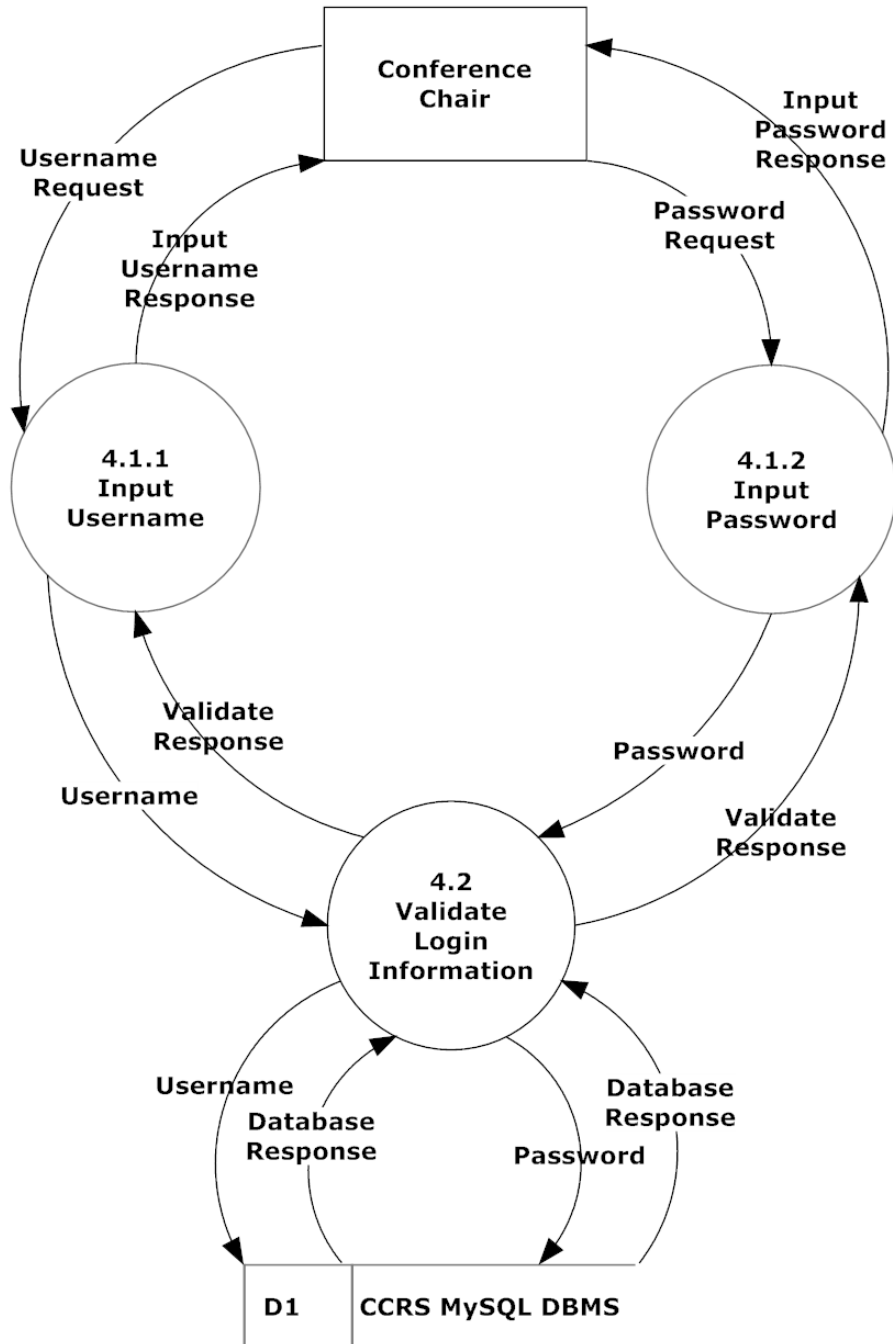


7.4.7 Submit 5.0 Level 1



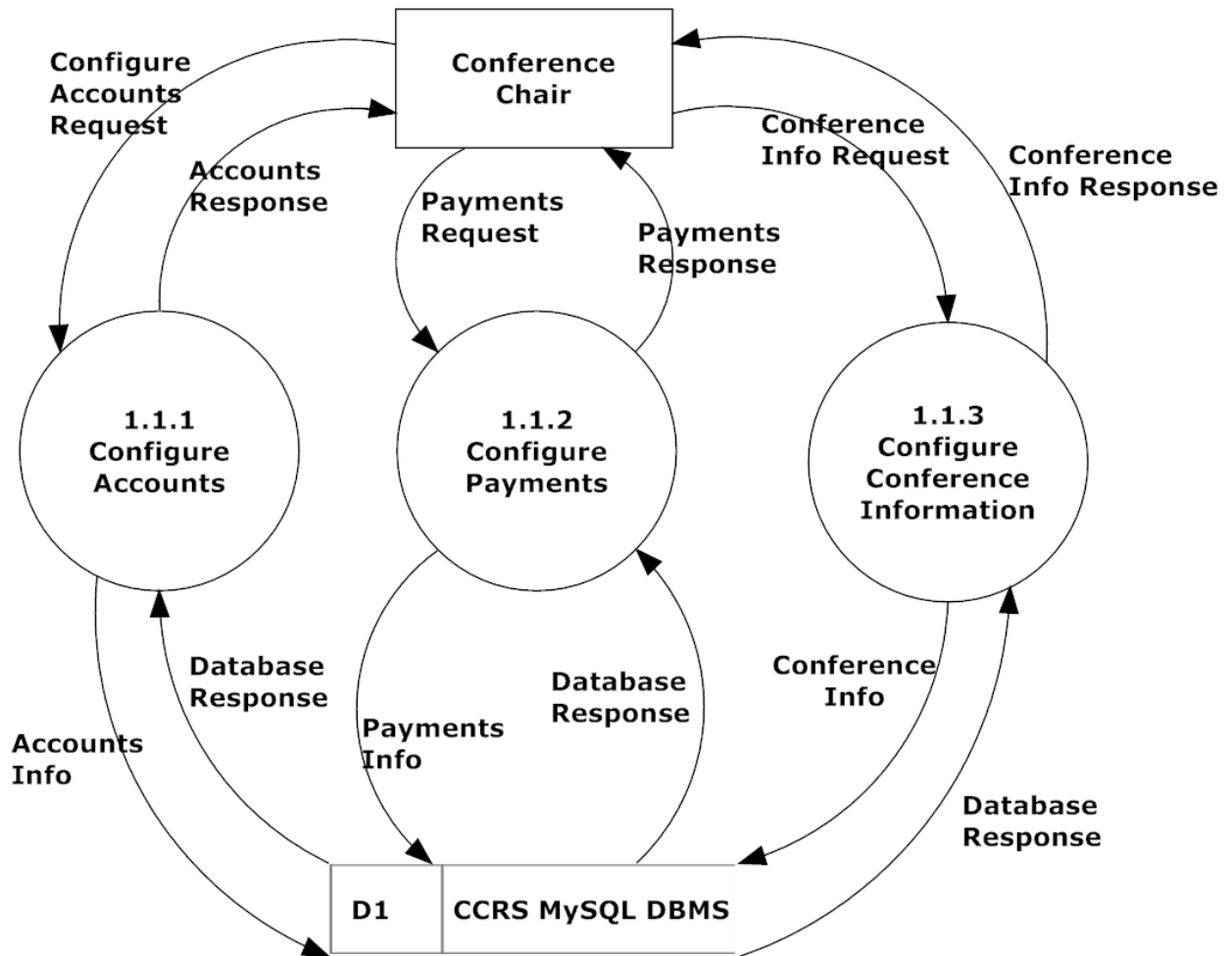
7.5 Level 2 Diagrams

7.5.1 Authenticate 4.1 Level 2

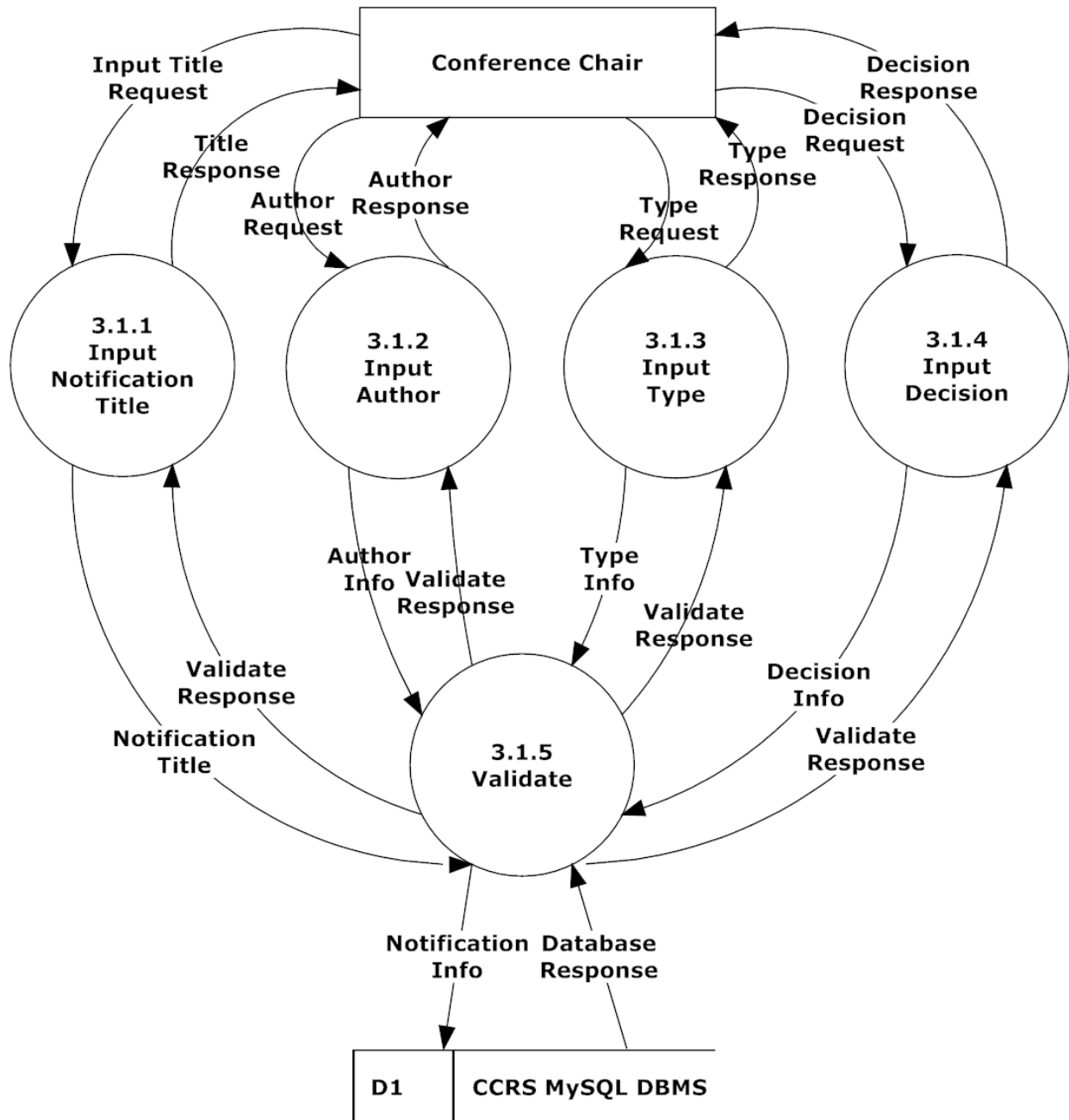


Note: All user will authenticate using this method. Conference Chair is only shown in the diagram for clarity.

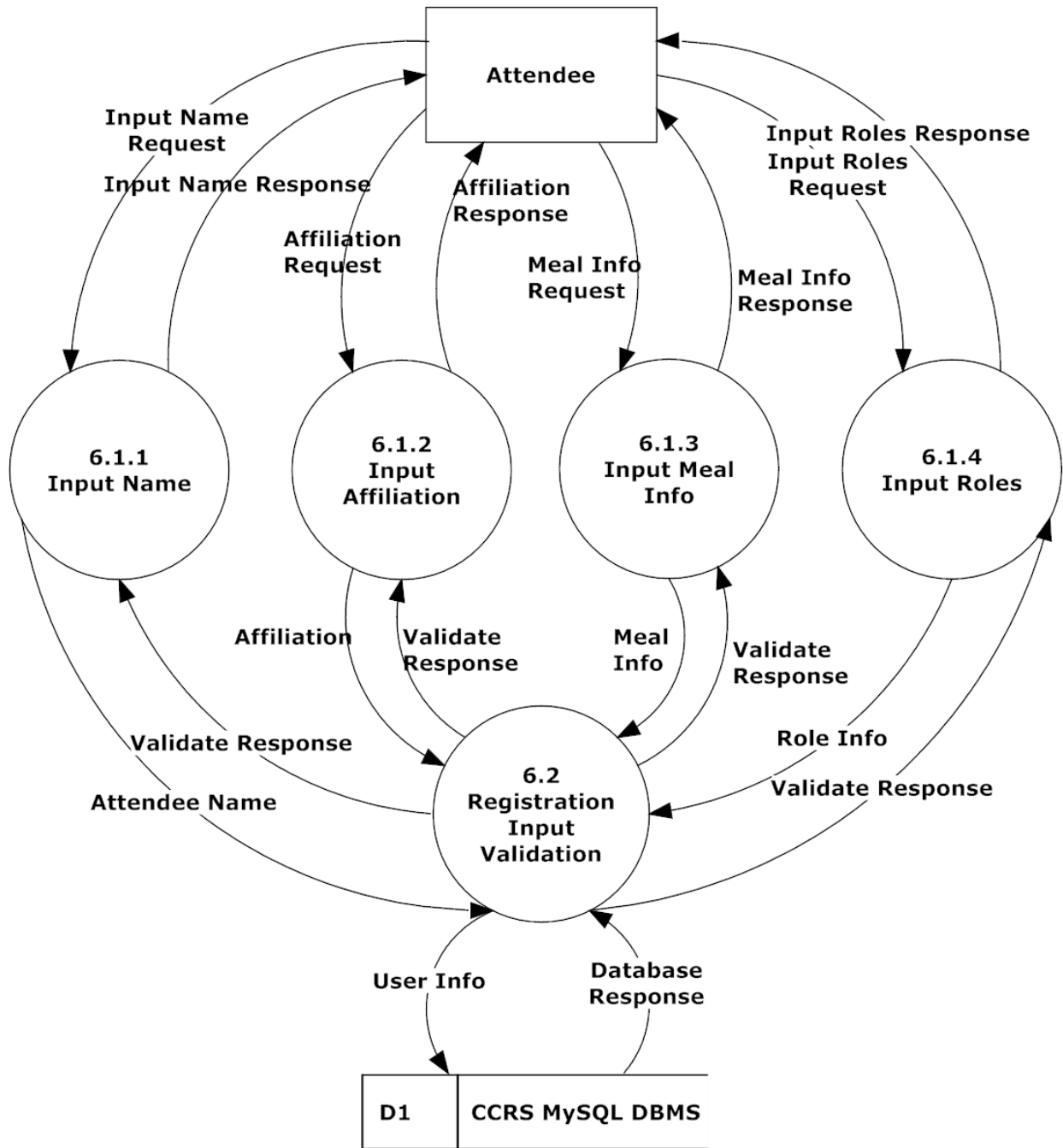
7.5.2 Configure 1.1 Level 2



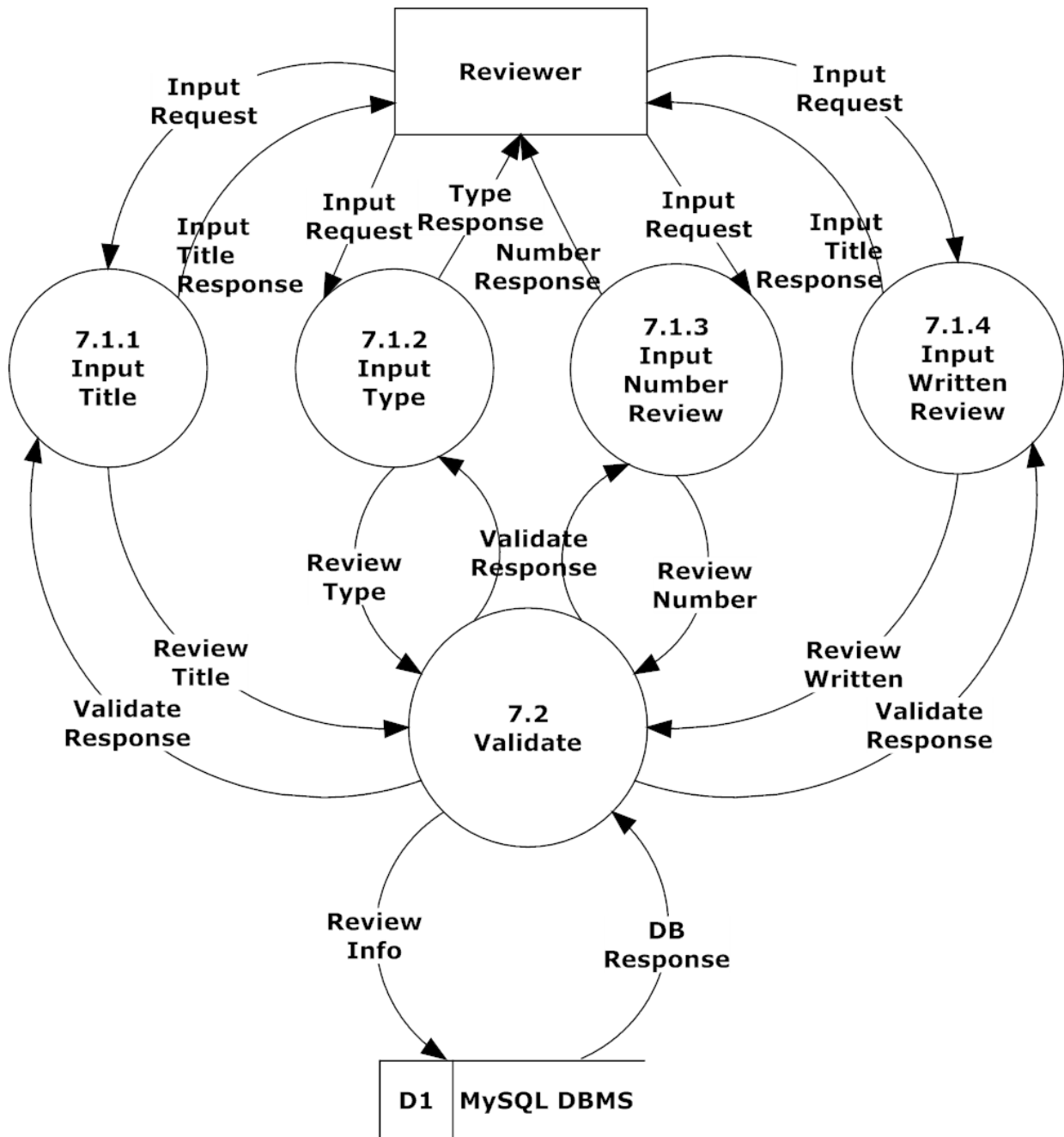
7.5.3 Notify 3.1 Level 2



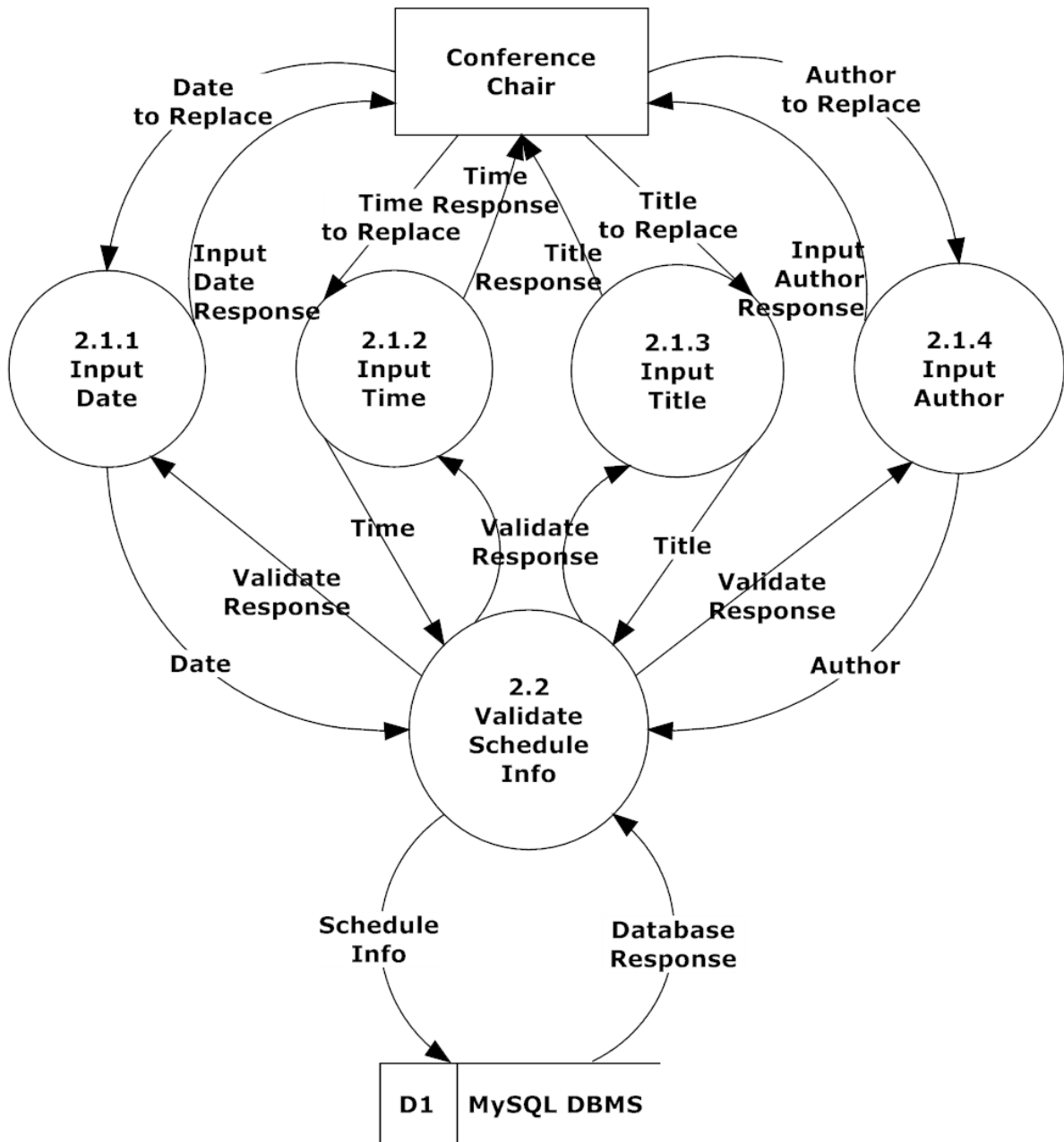
7.5.4 Register 6.1 Level 2



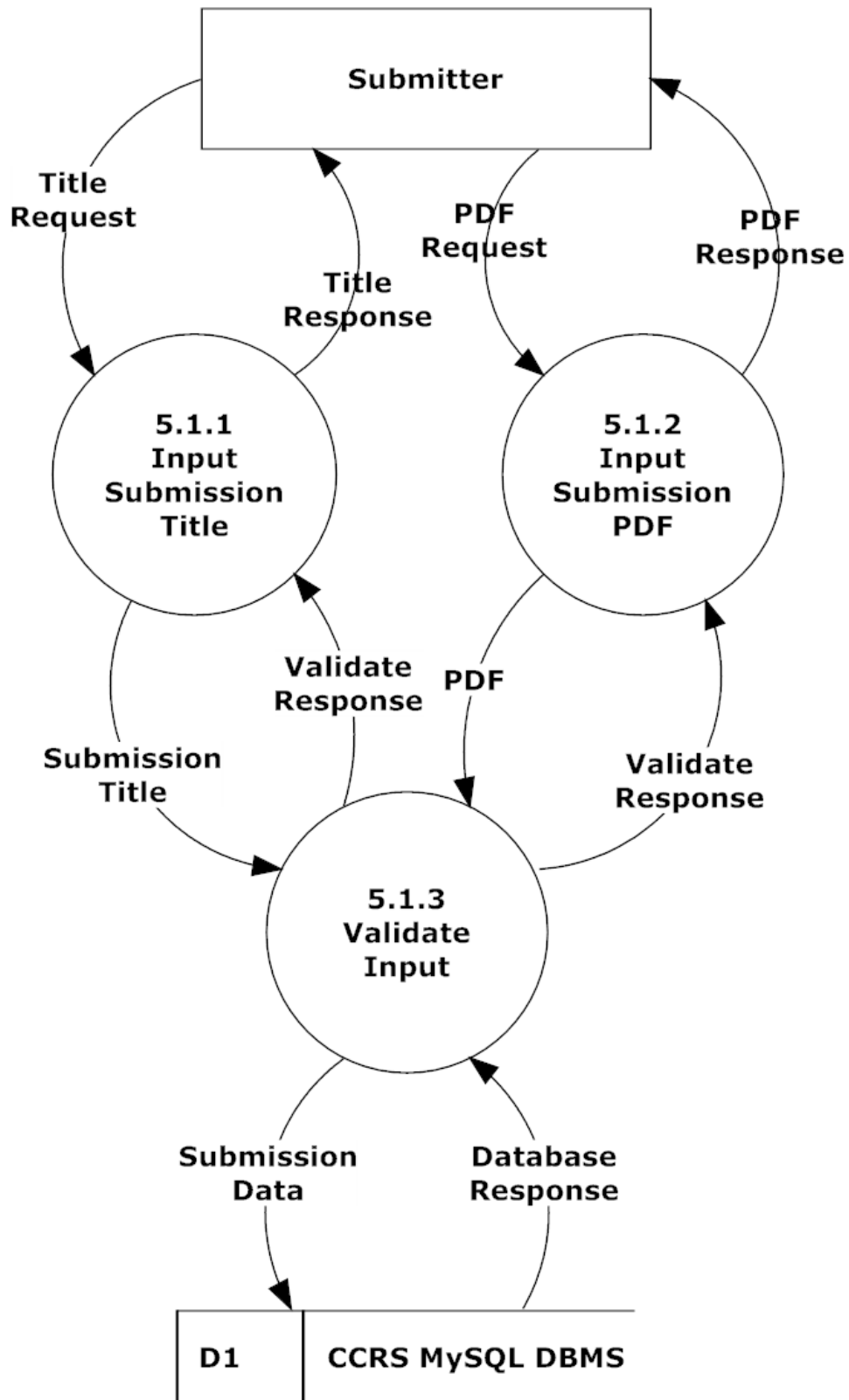
7.5.5 Review 7.1 Level 2



7.5.6 Set Up Schedule 2.1 Level 2

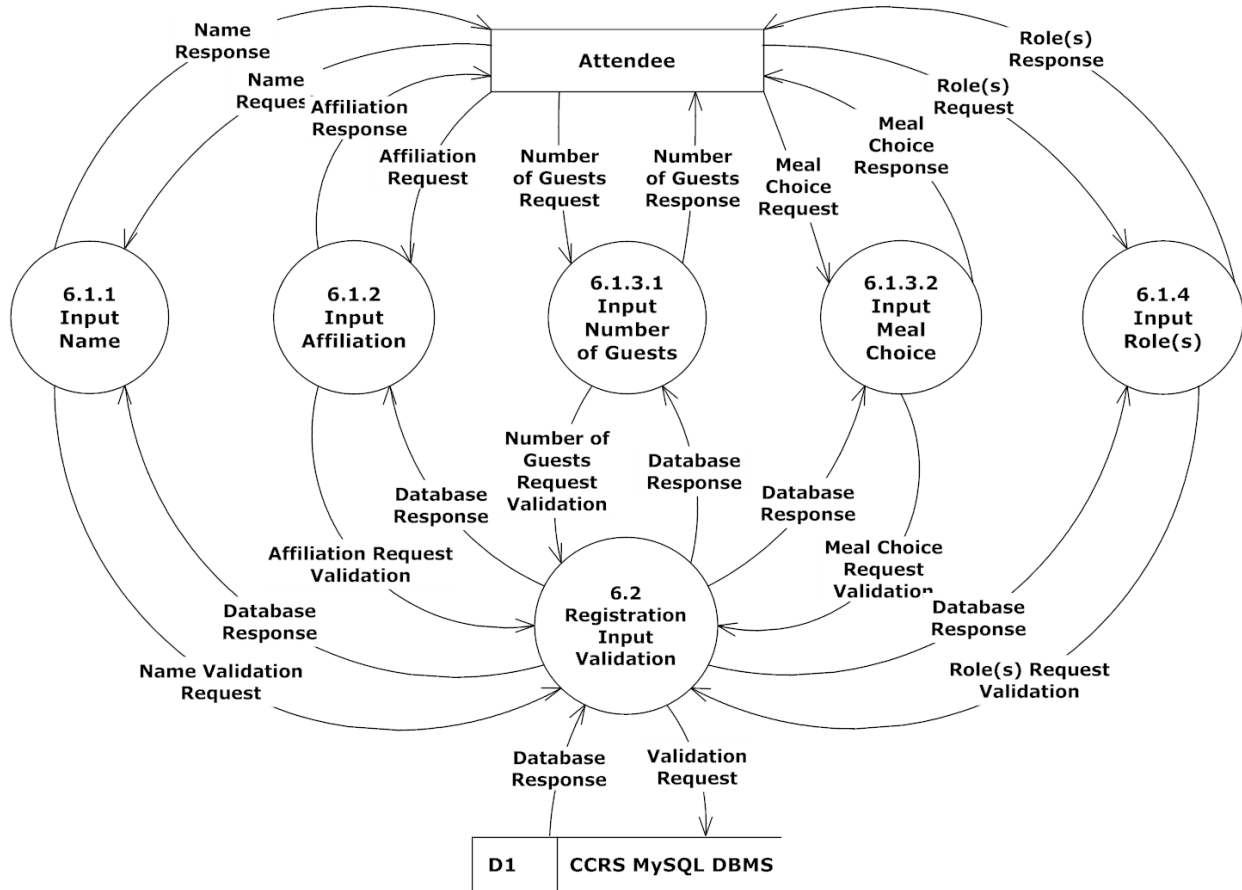


7.5.7 Submit 5.1 Level 2

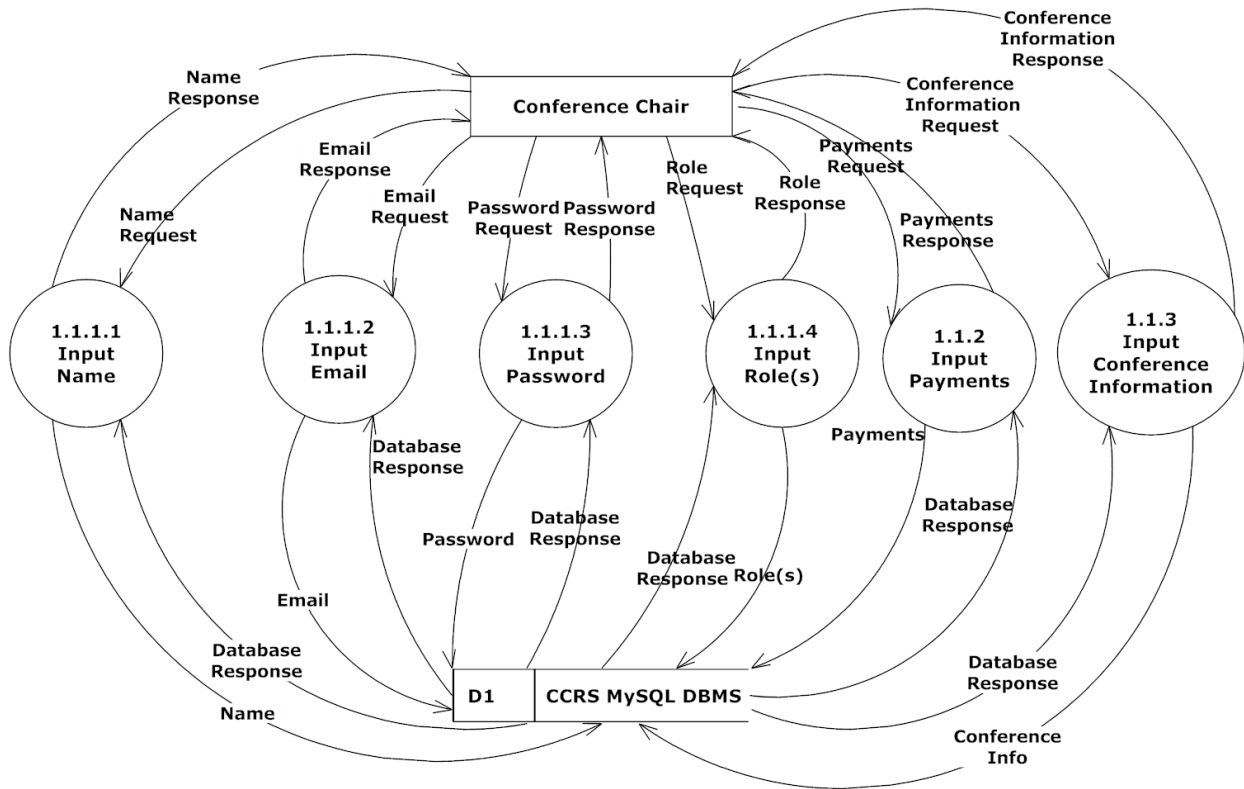


7.6 Level 3 Diagrams

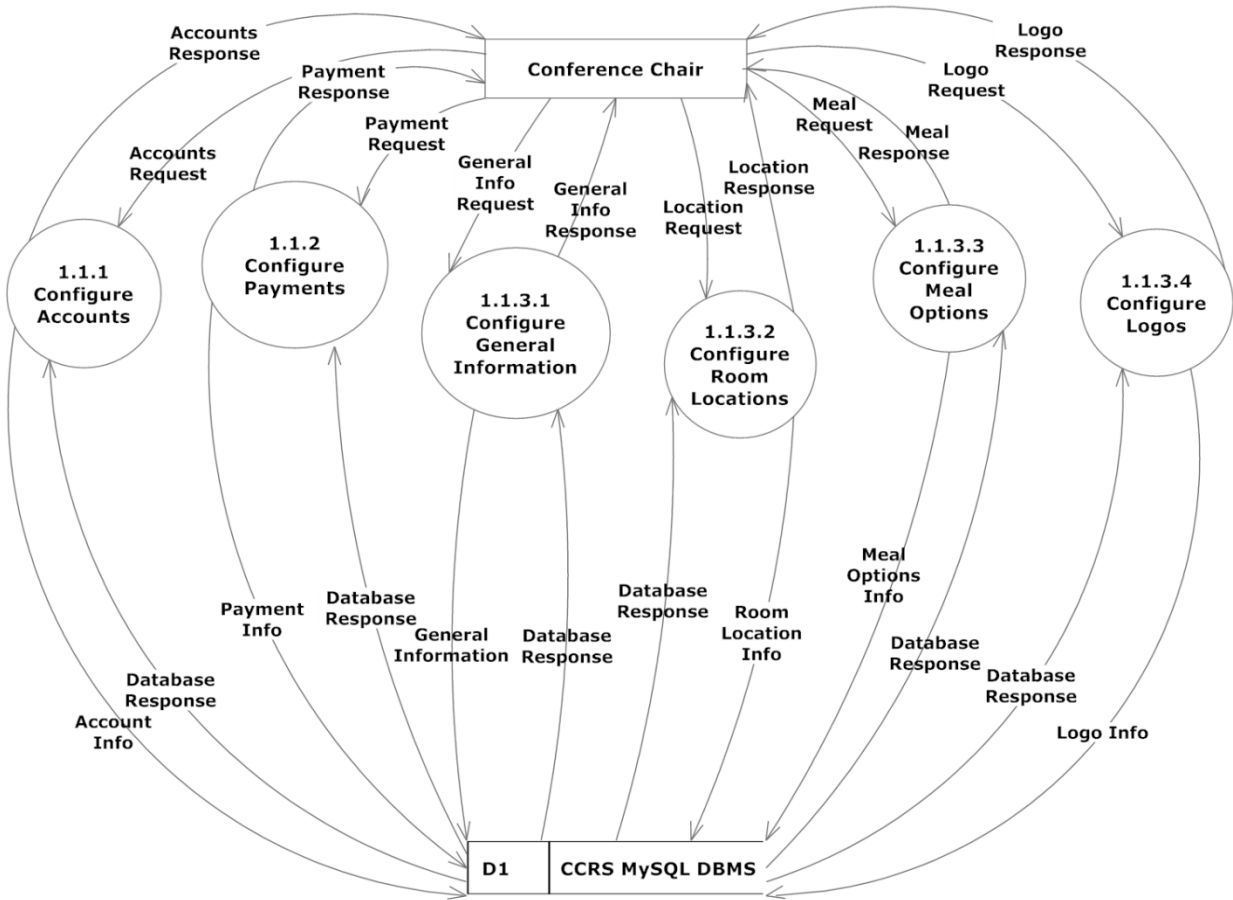
7.6.1 Register Input Meal Info Level 3



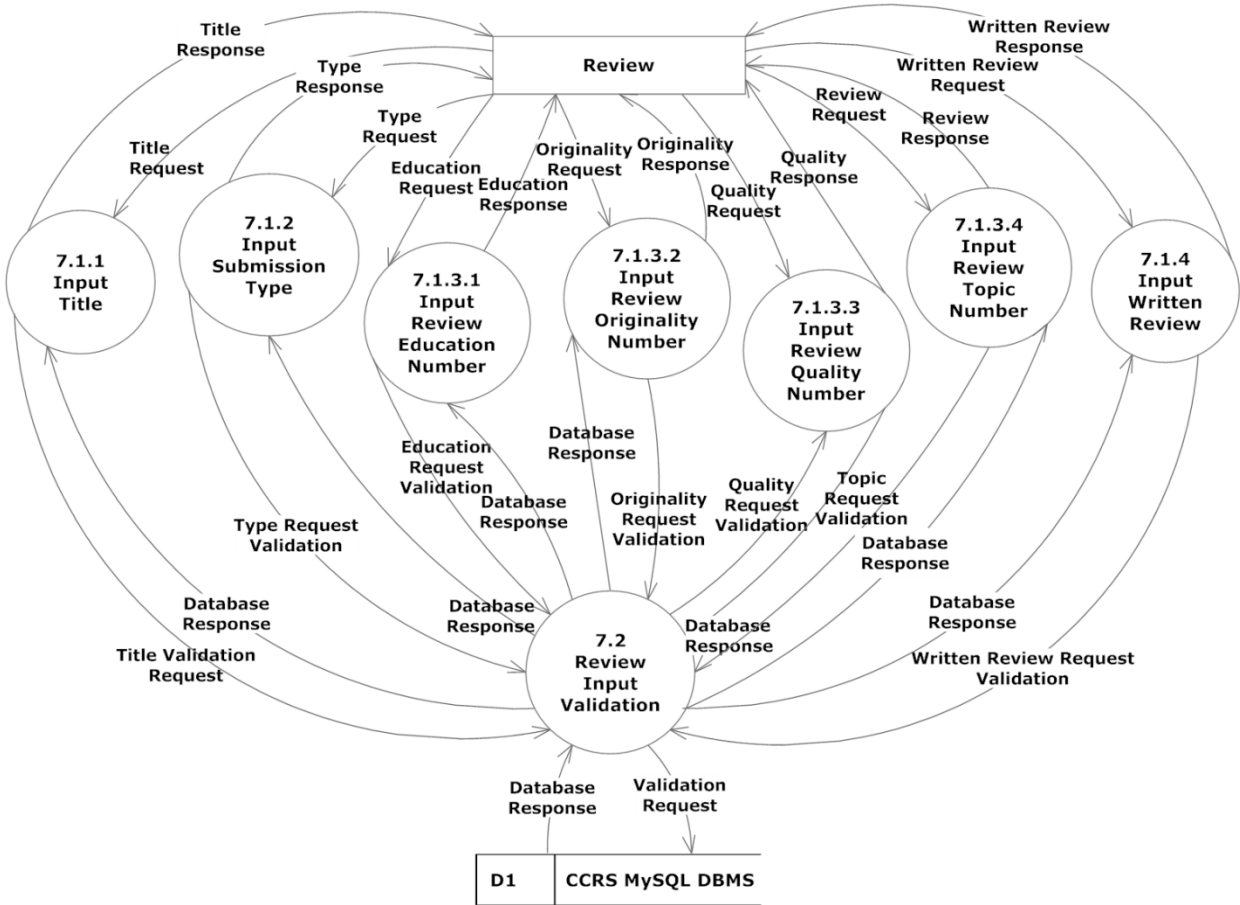
7.6.2 Configure Accounts Level 3



7.6.3 Configure Conference

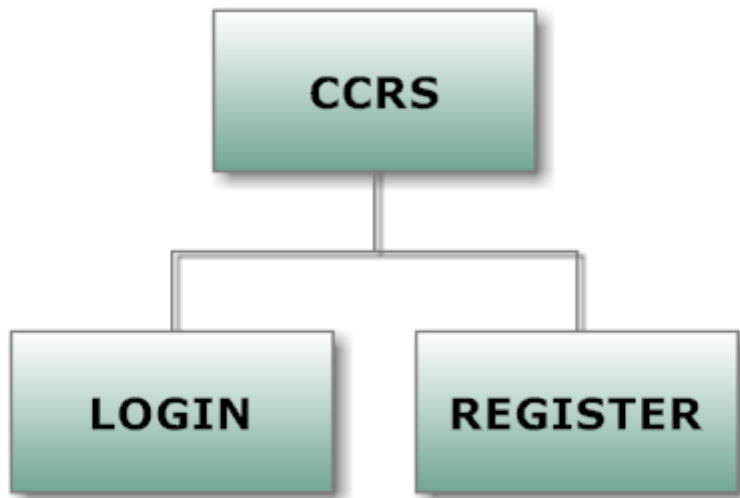


7.6.4 Review Info Level 3

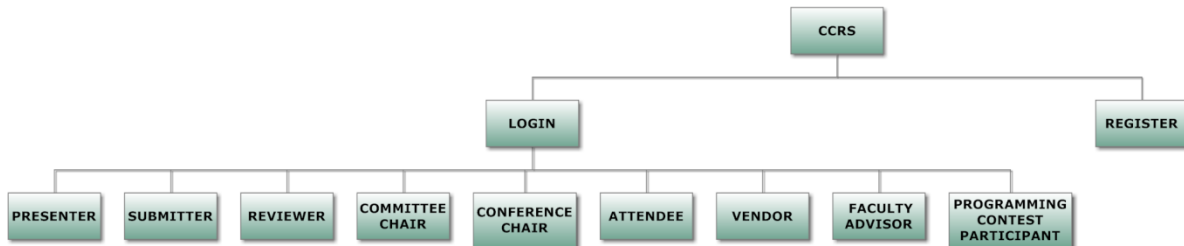


8 Structure Diagrams

A Structure Diagram shows the breakdown of CCRS at the lowest manageable levels. Each rectangular box represents a module while the arrows show the relationships between the modules.

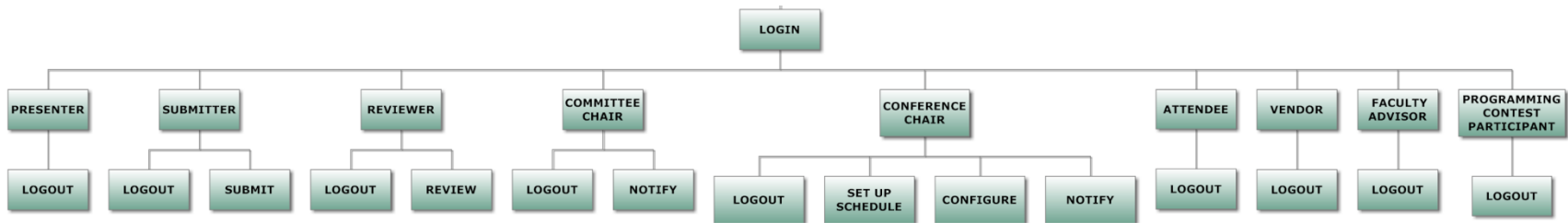


Context of the structure diagram

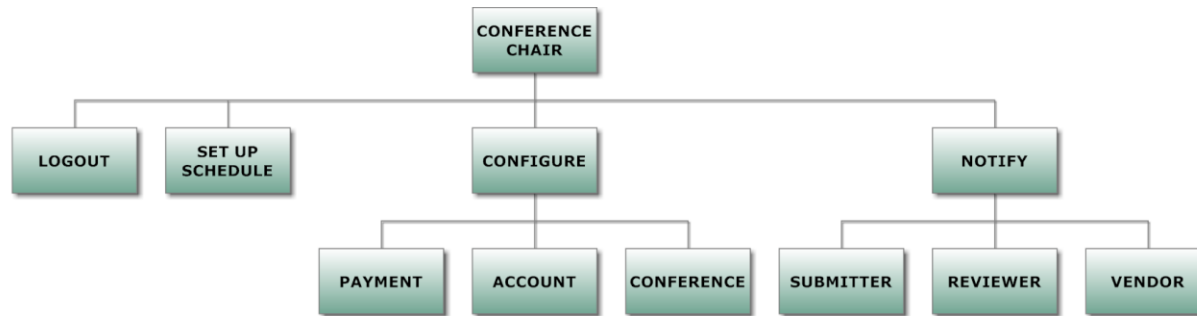


Expansion of the Login module

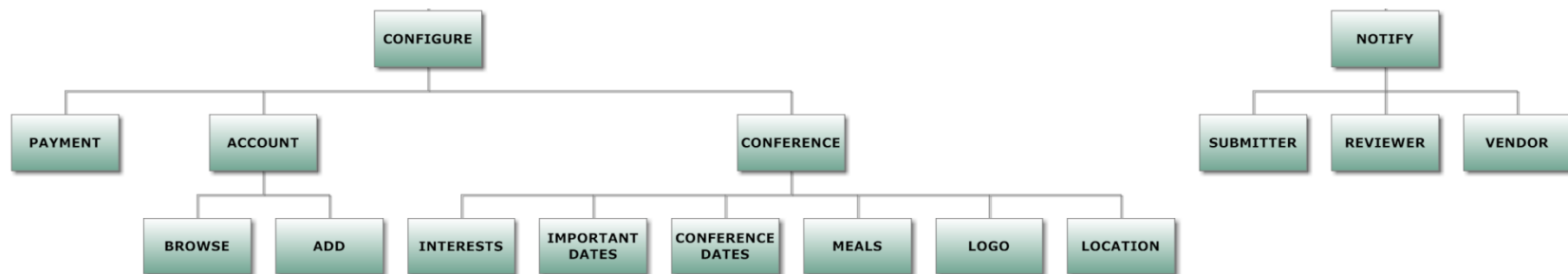
CCRS - Structure Diagrams



Expansion of modules off of the Login module



Expansion of Conference Chair module



Expansion of Configure and Notify Modules

9 Functional Requirements Inventory

CCRS will need to be tested on and function properly on the four most popular browsers: Internet Explorer, Mozilla Firefox, Google Chrome, and Safari.

9.1 System Requirements

- System will automatically generate a schedule
- Schedule will have drag and drop capabilities
- System will assign reviewers submissions
- Pages will load using Ajax
- System will change Submitter to Presenter if and when the Submitter has been accepted
- System will automatically e-mail users when they have been accepted for certain roles

9.2 All Users

- All users have the following functional requirements:
- Will be able to log into CCRS with a provided username and password. An incorrect username and/or password will result in an appropriate error message
- All users will be able to change their account settings such as password and number of guests

9.3 Conference Chair

- Will be able to configure user accounts for other users
- Accounts will be inserted into appropriate database tables
- Will be able to configure payment for users
- Proper fields will be updated in database tables
- Will be able to configure or edit schedule for event
- Will be able to configure meals options for the conference
- Will be able to notify applicants if they have been accepted as a reviewer and a vendor

9.4 Committee Chair

- Will be able to notify appropriate users based on membership in committee.

9.5 Registration Chair

- Will be able to notify appropriate users for required payment.

9.6 Review Chair

- Will be able to notify appropriate reviewers if other reviews are needed.

9.7 Attendee

- Will be able to register for conference including personal information, meal selection, and payment
- All required fields will be checked for proper input for nulls and format and error message produced for any issues
- Accounts and appropriate information will be inserted to appropriate database tables

9.8 Vendor

- Will be able to register for conference including personal information, meal selection, and payment
- All required fields will be checked for proper input for nulls and format
- Accounts and appropriate information will be inserted to appropriate database tables
- Will be able to check the place where they will be set up
- Request Audio/Visual equipment they will need

9.9 Presenter

- Will be able to register for conference including personal information, meal selection, and payment
- All required fields will be checked for proper input for nulls and format
- Accounts and appropriate information will be inserted to appropriate database tables.
- Will be able to check the place where they will be presenting

9.10 Programming Contest Participant

- Will be able to register for conference including personal information, meal selection, and payment
- All required fields will be checked for proper input for nulls and format
- Accounts and appropriate information will be inserted to appropriate database tables

9.11 Faculty Advisor

- Will be able to register for conference including personal information, meal selection, and payment
- All required fields will be checked for proper input for nulls and format
- Accounts and appropriate information will be inserted to appropriate database tables

9.12 Reviewer

- Will be able to review appropriate material (panel, poster, tutorial, demo, workshop, paper submissions) assigned to user
- Reviewed comments and results will be added to appropriate database tables and/or appropriate location on web server
- Cannot review papers if affiliated with the school in the submission.

9.13 Submitter

- Will be able to submit appropriate material (panel, poster, tutorial, demo, workshop, paper submissions) based on submission desire
- Submitted comments and results will be added to appropriate database tables and/or appropriate location on web server

10 Logical Data Dictionary

The data dictionary is a repository that shows information about the data within CCRS, including format, usage, and examples of correct and incorrect input.

Please see the attached sheets for the data dictionary. A Microsoft Excel file of the data dictionary is also available on the S.E.E. Solutions website.

11 Prototypes

The prototypes for CCRS provide a basic look into what each user will be able to see based on role in the conference.

11.1 Login Screen

This screen will appear when CCRS is initially loaded. The user will enter the user's email address and password in order to log in. If the user has not yet registered, "Register for Conference" will be clicked in order to do so.



Email	<input type="text" value="Email"/>
Password	<input type="password" value="Password"/>
<input type="checkbox"/>	Remember me
	Forgot Password?
	Register for Conference
	<input type="button" value="Sign in"/>

11.2 Registration Page

This is the page that will appear when the user clicks “Register for Conference” on the login page. The user will fill in all required fields, check which roles the user wishes to register as, and click next.

First Name *	<input type="text" value="First Name"/>
Last Name *	<input type="text" value="Last Name"/>
Address *	<input type="text" value="Address"/>
P.O. Box/Apt #	<input type="text" value="P.O. Box/Apt #"/>
City *	<input type="text" value="City"/>
State *	AL <input type="button" value="v"/>
Affiliation *	<input type="text" value="Affiliation"/>
Zip *	<input type="text" value="Zip Code"/>
Email *	<input type="text" value="Email Address"/>
Password *	<input type="text" value="Password"/> 8 - 32 characters
Confirm Password *	<input type="text" value="Password"/>

Reviewer Programming Contest Participant
 Attendee Vendor
 Faculty Advisor Submitter

* denotes a required field

11.3 Submission Page

This screen will be seen by a submitter once logged in. When a plus sign on the left of the page is clicked, the correlating category will expand allowing the user to upload the submission.

The screenshot shows the CCSCNE submission page. At the top left is the text "CCSCNE" and at the top right is the "SIENACollege" logo. Below the header is a table with two rows: "Submitter" and "Submissions". To the left of the main content area are three expandable categories: "Demo", "Panel", and "Paper". The "Paper" category is expanded, showing a submission form. The form includes a "Submission Name" input field, a "Topic" dropdown menu set to "Artificial Intelligence", and two upload buttons: "Upload Submission" (with a file icon and "paper_sub_1.pdf" and a green checkmark) and "Upload Anonymous Submission" (with a file icon and "anon_paper_sub_1.pdf" and a green checkmark). Below these are "Submit" and "Cancel" buttons. To the right of the submission form is a "Log Out" button and a large empty rectangular box.

12 Testing Plan

12.1 Overview & Strategy

CCRS will be tested on all four major browsers, as stated in the functional requirements. The testing is not limited to these browsers and CCRS will be tested on more browsers if time allows. S.E.E. Solutions will test all the functional requirements of CCRS. The functional requirements will be broken into modules and each module will be tested separately. Once the module is determined to work completely, the module will be tested with other necessary modules. Once this testing is complete, all the modules of CCRS will be tested together as a system. The Detailed Design document will describe the testing plan in more detail.

S.E.E. Solutions will also test the non-functional requirements of the CCRS. CCRS will be tested for user-friendliness by subjecting new users to the system to various aspects

of the program and have the users perform tasks within the system. CCRS will be tested for stability by running the system with many concurrent users.

12.2 Acceptance Test:

The system will be accepted under the criteria that CCRS meets all of the Functional and Non-Functional Requirements which are listed earlier in this document. These requirements are subject to change before the completion of the project.

12.3 Unit Tests

All units will be tested separately. Once each unit passes all the tests required, S.E.E. Solutions will run a full system test to make sure all the units work correctly together. Please see attached sheets for the unit tests for Login, Set Up Schedule, and Register. The Excel file are also available on the S.E.E. Solutions website.

12.4 Test Cases

Each test case will be numbered and contain a description of the unit involved. The action to be performed, the input entered by the user, the state before the test, and the expected result are described for the three units described in the above section. Results of the tests will be recorded once testing has begun.

12.5 Exception Handling

S.E.E. Solutions will perform checks for all system exceptions and common user errors. System errors include database read and write errors, database connection errors, PHP errors, and server errors. User errors are errors thrown by common wrong entries into the application. All errors will be handled to the furthest extent possible in CCRS. All possible errors will be tested in the unit tests, which will be expanded as S.E.E. Solutions develops the solution.

13 Development and Production Environment

13.1 Development Environment

The development environment of CCRS is the environment(s) in which CCRS will be developed and tested. The development environment includes both the Dell and Apple workstations in the Software Engineering lab and oraserv, the development server that runs Apache, PHP, and MySQL.

Workstations:

Apple iMac

- Apple OS X Lion 10.7.4
- RAM: 4GB DDR3
- Processor: 2.5 GHZ Intel Core i3

Dell Optiplex 760

- Windows Vista Enterprise SP2

CCRS - Development and Production Environment

- RAM: 4GB DDR2
- Processor: 2.93GHZ Intel Core2 Duo

Software: Netbeans, Notepad++

Development Server (oraserv):

- x86 64 PC
- Hostname: oraserv.cs.siena.edu
- CentOS 5.2
- Kernel: 2.6.18-92.el5
- Intel Xeon 2.66 GHz CPU
- 8 GB of Memory
- Apache version 2.2.9
- PHP version 5.2.6
- MySQL version 5.0.45

13.2 Production Environment

The production environment has not been designated at this time. This environment will match the specifications of the running development environment.

Appendix

Appendix A - Glossary of Terms

Appendix B - Project Timeline (Gantt Chart)

Appendix C – Unit Tests

Appendix D – Data Dictionary

Appendix E – Hand-Drawn Prototypes

Appendix A – Glossary of Terms

Actors - An entity in UML Use Case Diagrams describing human and nonhuman users that interact with the system

AJAX - (Asynchronous JavaScript and XML) - A free group of interrelated web development methods used for creating efficient and interactive Web applications

Apache (Web Server) – Web server developed by the Apache Foundation

CCRS (Comprehensive Conference Registration System) - The name of the project S.E.E. Solutions is creating

CCSCNE (Consortium for Computing Sciences in Colleges – Northeastern Region) - The name of the conference CCRS is being made for

Gantt Chart - A chart that illustrates a project schedule by showing the start dates and end dates of the specific elements of a project

HTTP (Hypertext Transfer Protocol) - A protocol used to transfer hypertext requests and information between servers and browsers

MySQL - an open source Relational Database Management System

NetBeans - An integrated development environment used primarily with Java, S.E.E. Solutions will be using NetBeans for developing PHP code

Notepad++ - A tool developed to support scripting of many languages including web development

ODBC (Open Database Connectivity) - A standard API used for connecting to database

PHP (PHP Hypertext Preprocessor) - A server side scripting language used for web development

Prototype - A mock up design for the final project

SCP (Secure Copy) - A network protocol used for secure data communication

UML (Unified Modeling Language) - A standardized modeling language used in software engineering

Unit Testing - A method of testing in which the system is broken down into units and each unit is tested separately

Use Case - An entity in UML Use Case Diagram that describes the functions of the systems that users can interact with

Appendix B - Timeline (Gantt Chart)

Appendix C – Unit Tests

Appendix D – Data Dictionary

Appendix E – Hand-Drawn Prototypes