5 INTERFACE DESCRIPTION A list of error messages [Emsg\_\*], success messages [Smsg\_\*] and communication messages [CCmsg\_\* and SCmsg\_\*] used on the DFD’s can be seen in Appendix-A. All of the communication messages are character strings. The communication of the messages shall be done by using Transmission Control Protocol (TCP) sockets. Some of the details regarding the format of the communication messages are not specified in order to prevent duplication, these details can be found in Appendix-D The complete description for the user interfaces is specified in subsection 3.1.1 of the SRS of ION-CHAT SYSTEM [2].

5.1 Module Interface

**5.1.1 Module 1 Chat Client**

5.1.1.1 Module 1.1 Client Site User Authentication Identification: Module 1.1 Client\_Site\_User\_Authentication Function: This module shall allow the user to enter the User\_id and Password. These inputs are checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.1.a of [2]. If the check succeeds then inputs (CCmsg\_1) shall be sent to the module 2.1, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_1 or SCmsg\_2) shall be waited. If the login failed Emsg\_11 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_1 | To send user\_id and password of the user to the server software to authenticate the user. | None | SCmsg\_1, |
|  |  |  | SCmsg\_2 |
| SCmsg\_1a | To authenticate the user to enter to the COMPANY MANAGEMENT SYSTEM for whom the system group is none | CCmsg\_1 | None |
| SCmsg\_1b | To authenticate the user to enter to the COMPANY MANAGEMENT SYSTEM for whom the system group is instructor | CCmsg\_1 | None |
| SCmsg\_1c | To authenticate the user to enter to the COMPANY MANAGEMENT SYSTEM for whom the system group is customer. Also, to specify the room that the customer is allowed to enter | CCmsg\_1 | None |
| SCmsg\_1d | To authenticate the user to enter to the IONCHAT SYSTEM for whom the system group is student. Also, to specify the rooms that the student is allowed to enter | CCmsg\_1 | None |
| SCmsg\_2 | To indicate the failed authentication of the user to enter to the ION-CHAT SYSTEM | CCmsg\_1 | None |
|  |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_1 | login:user\_id:password: |
| SCmsg\_1a | login:root: |
| SCmsg\_1b | login:instructor |
| SCmsg\_1c l | login:customer:room\_name: |
| SCmsg\_1d | login:student:room\_name\_as\_reviewie\_group: room\_name\_as\_reviewer\_group: |
| SCmsg\_2 | login:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_1 | login: static string |
| SCmsg\_1a | login: static string root: static string |
| SCmsg\_1b | login: static string instructor: static string |
| SCmsg\_1c | login: static string customer: static string |
| SCmsg\_1d | login: static string student: static string |
| SCmsg\_2 | login: static string failed: static string |

5.1.1.2 Module 1.2 Client Site Root Functions 5.1.1.2.1 Module 1.2.1 Client Site Root Console Identification: Module 1.2.1 Client\_Site\_Root\_Console Function: This module shall allow the root to select a basic operation and to enter User\_id, Room\_name, or Chat\_group\_name. This input is checked according to the requirements specified in sublcauses “Data format” and “Valid range” in section 3.1.1.2.a of [2]. If check succeeds then inputs can be the following: • CCmsg\_2 shall be sent to the module 2.2.1, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_3 or SCmsg\_4) shall be waited for basic operations of user. Then if succeeds o User\_id is sent to module 1.2.2, else Emsg\_13 shall be displayed for user addition. o User\_id Password, Real\_name and System\_group are sent to module 1.2.3, else Emsg\_14 shall be displayed for user deletion. o User\_id Password, Real\_name and System\_group are sent to module 1.2.4, else Emsg\_14 shall be displayed for user update. • CCmsg\_3 shall be sent to the module 2.2.1, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_5 or SCmsg\_6) shall be waited for basic operations of room. Then if succeeds o Room\_name is sent to module 1.2.5, else Emsg\_15 shall be displayed for room addition. o Room\_name, Reviewie Group, Reviewer Group and User\_id of Customer are sent to module 1.2.6, else Emsg\_16 shall be displayed for room deletion. o Room\_name, Reviewie Group, Reviewer Group and User\_id of Customer are sent to module 1.2.7, else Emsg\_16 shall be displayed for room update. • CCmsg\_4 shall be sent to the module 2.2.1, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_7 or SCmsg\_8) shall be waited for basic operations of chat group. Then if succeeds

o Chat\_group\_name is sent to module 1.2.8, else Emsg\_17 shall be displayed for chat group addition. o Chat\_group\_name and User\_id\_list are sent to module 1.2.9, else Emsg\_18 shall be displayed for chat group deletion. o Chat\_group\_name and User\_id\_list are sent to module 1.2.10, else Emsg\_18 shall be displayed for chat group update.

Interface:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **use** | | **Predecessor** | | **Successor** |
| CCmsg\_2 | To query the existence of a username | | None | | SCmsg\_3, SCmsg\_4 |
| SCmsg\_3 | To send the information (specified in format of SCmsg\_3) about the user whose user\_id is taken from the client software | | CCmsg\_2 | | None |
| SCmsg\_4 | To indicate the non-existence of the user. | | CCmsg\_2 | | None |
| CCmsg\_3 | To query the existence of a room name | | None | | SCmsg\_5, SCmsg\_6 |
| SCmsg\_5 | To send the information (specified in format of SCmsg\_5) about the room whose room\_name is taken from the client software | | CCmsg\_3 | | None |
| SCmsg\_6 | To indicate the non-existence of the room. | | CCmsg\_3 | | None |
| CCmsg\_4 | To query the existence of a chat group | | None | | SCmsg\_7, SCmsg\_8 |
| SCmsg\_7 | To send the information (specified in format of SCmsg\_7) about the chat group whose chat\_group is taken from the client software | | CCmsg\_4 | | None |
| SCmsg\_8 | To indicate the non-existence of the chat group. | | CCmsg\_4 | | None |
|  |
| **Code** | | | **Format Detail** | |
| CCmsg\_2 | | | askuser:user\_id: | |
| SCmsg\_3 | | | askuser:user\_id:password:real\_name:system\_group: | |
| SCmsg\_4 | | | askuser:failed: | |
| CCmsg\_3 | | | askroom:room\_name: | |
| SCmsg\_5 | | | askroom:room\_name:reviewie\_group:reviewer\_group: | |
|  | | | customer\_user\_id: | |
| SCmsg\_6 | | | askroom:failed: | |
| CCmsg\_4 | | | askchatgroup:chat\_group: | |
| SCmsg\_7 | | | askchatgroup:chat\_group:user\_id\_list: | |
| SCmsg\_8 | | | askchatgroup:failed: | |

|  |  |
| --- | --- |
| Code Format Detail | Code Format Detail |
| CCmsg\_2 | askuser: static string |
| SCmsg\_3 | askuser: static string |
| SCmsg\_4 | askuser: static string  failed: static string |
| CCmsg\_3 | askroom: static string |
| SCmsg\_5 | askroom: static string |
| SCmsg\_6 | askroom: static string  failed: static string |
| CCmsg\_4 | askchatgroup: static string |
| SCmsg\_7 | askchatgroup: static string user\_id: semicolon seperated user\_id list |
| SCmsg\_8 | askchatgroup: static string failed: static string |

5.1.1.2.2 Module 1.2.2 Client Site User Addition

Identification: Module 1.2.2 Client\_Site\_User\_Addition Function: This module shall allow the root to enter the User\_id, Password, Confirm\_password, Real\_name, System\_group. These inputs are checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.2.b of [2]. If the check succeeds then inputs (CCmsg\_5) shall be sent to the module 2.2.2 else Emsg\_1 shall be displayed. Then the server response (SCmsg\_9 or SCmsg\_10) shall be waited. If the add succeeds Smsg\_3, else Emsg\_4 shall be displayed.

Interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_7 | To get the user\_id for deletion of an existing user from the root and send it to server software | None | SCmsg\_13, SCmsg\_14 |
| SCmsg\_13 | To indicate the successful deletion of the user | CCmsg\_7 | None |
| SCmsg\_14 | To indicate the failed deletion of the user. |  | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_7 | deleteuser:user\_id: |
| SCmsg\_13 | deleteuser:successful: |
| SCmsg\_14 | deleteuser:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_7 | deleteuser: static string |
| SCmsg\_13 | deleteuser: static string  successful: static string |
| SCmsg\_14 | deleteuser: static string  failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| Code of Method | Method Name | Method Interface | Method Belongs To |
| f3 | method3 | method3(String user\_id, String password, String real\_name, String system\_group) | Module 1.2.3 |

5.1.1.2.4 Module 1.2.4 Client Site User Update

Identification: Module 1.2.4 Client\_Site\_User\_Update Function: This module shall allow the root to enter the new Password, Confirm\_password, Real\_name, System\_group. These inputs are checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.2.d of [2]. If the check succeeds then inputs (CCmsg\_6) shall be sent to the module 2.2.4, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_11 or SCmsg\_12) shall be waited. If the add succeeds Smsg\_2, else Emsg\_3 shall be displayed.

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_6 | To get the necessary inputs (specified in format of CCmsg\_6) for update of an existing user from the root and send them to server software | None | SCmsg\_11, SCmsg\_12 |
| SCmsg\_11 | To indicate the successful update of the user. | CCmsg\_6 | None |
| SCmsg\_12 | To indicate the failed update of the user. | CCmsg\_6 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_6 | updateuser:user\_id:password:real\_name:system\_group: |
| SCmsg\_11 | updateuser:successful |
| SCmsg\_12 | updateuser:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_6 | updateuser: static string |
| SCmsg\_11 | updateuser: static string successful: static string |
| SCmsg\_12 | updateuser: static string failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| Code of Method | Method Name | Method Interface | Method Belongs To |
| f3 | method3 | method3(String user\_id, String password, String real\_name, String system\_group) | Module 1.2.3 |

5.1.1.2.5 Module 1.2.5 Client Site Room Addition

Identification: Module 1.2.5 Client\_Site\_Room\_Addition Function: This module shall allow the root to enter the Room\_name, Reviewie Group, Reviewer Group and User\_id of Customer. These inputs are checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.2.e of [2]. If the check succeeds then inputs (CCmsg\_8) shall be sent to the module 2.2.5 else Emsg\_1 shall be displayed. Then the server response (SCmsg\_15 or SCmsg\_16) shall be waited. If the add succeeds Smsg\_6, else Emsg\_7 shall be displayed

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_8 | To get the necessary inputs (specified in format of CCmsg\_8) for addition of a new room from the root and send them to server software. | None | SCmsg\_15, SCmsg\_16 |
| SCmsg\_15 | To indicate the successful addition of the room | CCmsg\_8 | None |
| SCmsg\_16 | To indicate the failed addition of the room | CCmsg\_8 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_8 | addroom:room\_name:reviewie\_group:reviewer\_group: customer\_user\_id: |
| SCmsg\_15 | addroom:successful: |
| SCmsg\_16 | addroom:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_8 | addroom: static string |
| SCmsg\_15 | addroom: static string successful: static string |
| SCmsg\_16 | addroom: static string failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| Code of Method | Method Name | Method Interface | Method Belongs To |
| F5 | Method5 | method5(String room\_name)String system\_group) | Module 1.2.5 |

**5.1.1.2.6 Module 1.2.6 Client Site Room Deletion**

Identification: Module 1.2.6 Client\_Site\_Room\_Deletion Function: This module shall allow the root to see the information related to the room to be deleted. The room information shall be composed of Room\_name, Review Group, Reviewer Group, User\_id of Customer parts. The approval message (CCmsg\_10) shall be sent to the module 2.2.6 and the server response (SCmsg\_19 or SCmsg\_20) shall be waited. If the delete succeeds Smsg\_4, else Emsg\_5 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_10 | To get the room\_name for deletion of an existing room from the root and send it to server software. | None | SCmsg\_19, SCmsg\_20 |
| SCmsg\_19 | To indicate the successful deletion of the room. | CCmsg\_10 | None |
| SCmsg\_20 | To indicate the failed deletion of the room. | CCmsg\_10 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_10 | deleteroom:room\_name: |
| SCmsg\_19 | deleteroom:successful: |
| SCmsg\_20 | deleteroom:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_10 | deleteroom: static string |
| SCmsg\_19 | deleteroom: static string  successful: static string |
| SCmsg\_20 | deleteroom: static string  failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| Code of Method | Method Name | Method Interface | Method Belongs To |
| f6 | method6 | method6(String room\_name, String reviewie\_group, String reviewer\_group, String user\_id\_of\_customer) | Module 1.2.6 |

**5.1.1.2.7 Module 1.2.7 Client Site Room Update**

Identification: Module 1.2.7 Client\_Site\_Room\_Update Function: This module shall allow the root to enter the new Review Group, Reviewer Group, User\_id of Customer. These inputs are checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.2.g of [2]. If the check succeeds then inputs (CCsmg\_9) shall be sent to the module 2.2.7, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_17 or SCmsg\_18) shall be waited. If the add succeeds Smsg\_5, else Emsg\_6 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_9 | To get the necessary inputs (specified in format of CCmsg\_9) for update of an existing room from the root and send them to server software. | None | SCmsg\_17 SCmsg\_18 |
| SCmsg\_17 | To indicate the successful update of the room. | CCmsg\_9 | None |
| SCmsg\_18 | To indicate the failed update of the room. | CCmsg\_9 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_9 | updateroom:room\_name:reviewie\_group: reviewer\_group:customer\_user\_id: |
| SCmsg\_17 | updateroom:successful: |
| SCmsg\_18 | updateroom:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_9 | updateroom: static string |
| SCmsg\_17 | updateroom: static string successful: static string |
| SCmsg\_18 | updateroom: static string failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| Code of Method | Method Name | Method Interface | Method Belongs To |
| F7 | Method7 | method7(String room\_name, String reviewie\_group, String reviewer\_group, String user\_id\_of\_customer) | Module 1.2.7 |

**5.1.1.2.8 Module 1.2.8 Client Site Chat Group Addition**

Identification: Module 1.2.8 Client\_Site\_Chat\_Group\_Addition Purpose: To provide an interface, where the root shall enter the necessary inputs in order to add a new Chat\_Group to the ION-CHAT SYSTEM, and to send the inputs entered to the server software. Function: This module shall allow the root to enter the Chat Group Name and User\_id List. These inputs are checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.2.h of [2]. If the check succeeds then inputs (CCmsg\_11) shall be sent to the module 2.2.8 else Emsg\_1 shall be displayed. Then the server response (SCmsg\_21 or SCmsg\_22) shall be waited. If the add succeeds Smsg\_9, else Emsg\_10 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_11 | To get the necessary inputs (specified in format of CCmsg\_11) for addition of a new chat group from the root and send them to server software.. | None | SCmsg\_21, SCmsg\_22 |
| SCmsg\_21 | To indicate the successful addition of the chat group. | CCmsg\_11 | None |
| SCmsg\_22 | To indicate the failed addition of the chat group. | CCmsg\_11 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_11 | addchatgroup:chat\_group:user\_id\_list |
| SCmsg\_21 | addchatgroup:successful: |
| SCmsg\_22 | addchatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_11 | addchatgroup: static string user\_id: semicolon seperated user\_id list |
| SCmsg\_21 | addchatgroup: static string successful: static string |
| SCmsg\_20 | deleteroom: static string  failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| Code of Method | Method Name | Method Interface | Method Belongs To |
| F8 | Method8 | method8(String chat\_group\_name) | Module 1.2.8 |

**5.1.1.2.9 Module 1.2.9 Client Site Chat Group Deletion**

Identification: Module 1.2.9 Client\_Site\_Chat\_Group\_Deletion Purpose: To provide an interface, where the root shall approve deleting an existing Chat\_Group from the COMPANY MANAGEMENT SYSTEM, and to send the delete approval message to the server software. Function: This module shall allow the root to see the information related to the Chat\_Group to be deleted. The Chat\_Group information shall be composed of Chat Group Name and User\_id List. The approval message (CCsmg\_13) shall be sent to the COMPANY MANAGEMENT SYSTEM Software Design Description Version 2.0 33 module 2.2.9 and the server response (SCmsg\_25 or SCmsg\_26) shall be waited. If the delete succeeds Smsg\_7, else Emsg\_8 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_13 | To get the chat\_group for deletion of an existing chat group from the root and send it to server software. | None | SCmsg\_25, SCmsg\_26 |
| SCmsg\_25 | To indicate the successful deletion of the chat group. | CCmsg\_13 | None |
| SCmsg\_26 | To indicate the failed deletion of the chatgroup. | CCmsg\_13 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_13 | deletechatgroup:chat\_group: |
| SCmsg\_25 | deletechatgroup:successful: |
| SCmsg\_26 | deletechatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_13 | deletechatgroup: static string |
| SCmsg\_25 | deletechatgroup: static string successful: static string |
| SCmsg\_26 | deletechatgroup: static string failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| **Code of Method** | **Method Name** | **Method Interface** | **Method Belongs To** |
| F9 | Method9 | method9(String chat\_group\_name, String user\_id\_list) | Module 1.2.9 |

**5.1.1.2.10 Module 1.2.10 Client Site Chat Group Update**

Identification: Module 1.2.10 Client\_Site\_Chat\_Group\_Update Function: This module shall allow the root to enter the new User\_id List. This input is checked according to the requirements specified in subclauses “Data format” and “Valid range” in section 3.1.1.2.j of [2]. If the check succeeds then inputs (CCmsg\_12) shall be sent to the module 2.2.10, else Emsg\_1shall be displayed. Then the server response ION-CHAT SYSTEM Software Design Description Version 2.0 34 (SCmsg\_23 or SCmsg\_24) shall be waited. If the add succeeds Smsg\_8, else Emsg\_9 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_12 | To get the necessary inputs (specified in format of CCmsg\_12) for update of an existing chat group from the root and send them to server software. | None | SCmsg\_23, SCmsg\_24 |
| SCmsg\_23 | To indicate the successful update of the chat group. | CCmsg\_12 | None |
| SCmsg\_24 | To indicate the failed update of the chat group. | CCmsg\_12 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_12 | updatechatgroup:chat\_group:user\_id\_list: |
| SCmsg\_23 | updatechatgroup:successful: |
| SCmsg\_24 | updatechatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_12 | updatechatgroup: static string user\_id: semicolon seperated user\_id list |
| SCmsg\_23 | updatechatgroup: static string successful: static string |
| SCmsg\_24 | updatechatgroup: static string failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| **Code of Method** | **Method Name** | **Method Interface** | **Method Belongs To** |
| F10 | Method10 | method10(String chat\_group\_name, String user\_id\_list) | Module 1.2.10 |

**5.1.1.3 Module 1.3 Client Site Chat**

Identification: Module 1.3 Client\_Site\_Chat Function: This module shall allow the user to enter the message to the User\_area text box. This input is checked according to the requirements specified in subclauses “Data ION-CHAT SYSTEM Software Design Description Version 2.0 35 format” and “Valid range” in section 3.1.1.3.a of [2]. If the check succeeds then inputs can be the following four option

• CCmsg\_14 shall be sent to the module 2.3, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_27) shall be waited. Then if succeeds the message of the user shall be shown in the General\_area text box.

• CCmsg\_15, shall be sent to the module 2.3, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_28) shall be waited. Then if succeeds the message of the user shall be shown in the General\_area text box. • CCmsg\_16, shall be sent to the module 2.3, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_29 and SCmsg\_30 or SCmsg\_31) shall be waited. Then if succeeds the message of the user shall be shown in the General\_area text box.

• CCmsg\_17) shall be sent to the module 2.3, else Emsg\_1 shall be displayed. Then the server response (SCmsg\_32 or SCmsg\_33) shall be waited. Then if succeeds the message of the user shall be shown in the General\_area text box. When user clicks to the Logout\_button to logout from the ION-CHAT SYSTEM and if succeeds the Smsg\_10, else Emsg\_12 shall be displayed.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_14 | To get the message from the user and send it to the server software. | None | SCmsg\_27 |
| SCmsg\_27 | To get the message from the client software and send it to the all client software which are in the same room. | CCmsg\_14 | None |
| CCmsg\_15 | To query the room list of COMPANY MANAGEMENT SYSTEM | None | SCmsg\_28 |
| SCmsg\_28 | To send the room\_list to the client software | CCmsg\_15 | None |
| SCmsg\_16 | To query the user list of COMPANY MANAGEMENT SYSTEM for a specific room name. | None | SCmsg\_29, SCmsg\_31 |
| SCmsg\_29 | To send the user\_list of a specific room to the client software | CCmsg\_16 | None |
| SCmsg\_30 | To send the active user\_list of a specific room to the client software when a new | None | None |
| SCmsg\_31 | To indicate the failed query of the user\_list of a specific room | CCmsg\_16 | None |
| CCmsg\_17 | To send user\_id of the user to the server software to logout the user. | None | SCmsg\_32, SCmsg\_33 |
| SCmsg\_32 | To indicate the successful logout of the user from the COMPANY MANAGEMENT SYSTEM | CCmsg\_17 | None |
| SCmsg\_33 | To indicate the failed logout of the user from the COMPANY MANAGEMENT SYSTEM | CCmsg\_17 | None |
|  |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_14 | chatmsg:chat\_group:real\_name:chat\_message |
| SCmsg\_27 | chatmsg:chat\_group:real\_name:chat\_message |
| CCmsg\_15 | askroomlist: |
| SCmsg\_28 | askroomlist:room\_name\_list: |
| CCmsg\_16 | askalluserlist:room\_name: |
| SCmsg\_29 | askalluserlist:user\_id/chat\_group/real\_name:user\_id/ chat\_group/real\_name:user\_id/customer/real\_name: user\_id/instructor/real\_name: |
| SCmsg\_30 | askactiveuserlist:user\_id\_list |
| SCmsg\_31 | askalluserlist:failed |
| CCmsg\_17 | logout:user\_id: |
| SCm sg\_3 2 | logout:successful: |
| SCmsg\_33 | logout:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_14 | chatmsg: static string |
| SCmsg\_27 | chatmsg: static string |
| CCmsg\_15 | askroomlist: static string |
| SCmsg\_28 | askroomlist: static string room\_name\_list: semicolon seperated room\_name list |
| CCmsg\_16 | askalluserlist: static string |
| SCmsg\_29 | askalluserlist: static string user\_id/chat\_group/real\_name: semicolon seperated list for reviewie group members user\_id/chat\_group/real\_name: semicolon seperated list for reviewier group members user\_id/customer/real\_name: for the customer assigned to the room user\_id/instructor/real\_name: semicolon seperated list for all instructors |
| SCmsg\_30 | askactiveuserlist: static string user\_id: semicolon seperated user\_id list |
| SCmsg\_31 | askalluserlist: static string failed: static string |
| CCmsg\_17 | logout: static string |
| SCmsg\_32 | logout: static string successful: static string |
| SCmsg\_33 | logout: static string failed: static string |

|  |  |  |  |
| --- | --- | --- | --- |
| **Code of Method** | **Method Name** | **Method Interface** | **Method Belongs To** |
| F1 | Method1 | method1(String user\_id, String reviewie\_group\_room\_name, String reviewer\_group\_room\_name, String system\_group) | Module 1.3 |

**5.1.2 Module 2 Chat Server**

**5.1.2.1 Module 2.1 Server Site User Authentication**

Identification: Module 2.1 Server\_Site\_User\_Authentication Function: This module shall get the inputs (CCmsg\_1) from the module 1.1 to check the existence of the user form the User Information File. If the check succeeds then SCmsg\_1 else SCmsg\_2 shall be sent to the module 1.1.

Interface:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Code** | **use** | | **Predecessor** | | **Successor** |
| CCmsg\_1 | To send user\_id and password of the user to the server software to authenticate the user | | None | | SCmsg\_1, SCmsg\_2 |
| SCmsg\_1a | To authenticate the user to enter to the IONCHAT SYSTEM for whom the system group is root | | CCmsg\_1 | | None |
| SCmsg\_1b | To authenticate the user to enter to the IONCHAT SYSTEM for whom the system group is instructor | | CCmsg\_1 | | None |
| SCmsg\_1c | To authenticate the user to enter to the IONCHAT SYSTEM for whom the system group is customer. Also, to specify the room that the customer is allowed to enter | | CCmsg\_1 | | None |
| SCmsg\_1d | To authenticate the user to enter to the IONCHAT SYSTEM for whom the system group is student. Also, to specify the rooms that the student is allowed to enter | | CCmsg\_1 | | None |
| SCmsg\_2 | To indicate the failed authentication of the user to enter to the ION-CHAT SYSTEM | | CCmsg\_1 | | None |
|  |
| **Code** | | | **Format** | |
| CCmsg\_1 | | | login:user\_id:password | |
| SCmsg\_1a | | | login:root: | |
| SCmsg\_1b | | | login:instructor: | |
| SCmsg\_1c | | | login:customer:room\_name: | |
| SCmsg\_1d | | | login:student:room\_name\_as\_reviewie\_group: room\_name\_as\_reviewer\_group: | |
| SCmsg\_2 | | | login:failed: | |
| **Code** | | | **Format Detail** | |
| CCmsg\_1 | | | login: static string | |
| SCmsg\_1a | | | login: static string  root: static string | |
| SCmsg\_1b | | | login: static string  instructor: static string | |
| SCmsg\_1c | | | login: static string  customer: static string | |
| SCmsg\_1d | | | login: static string  student: static string | |
| SCmsg\_2 | | | login: static string  failed: static string | |

**5.1.2.2 Module 2.2 Server Site Root Functions**

**5.1.2.2.1 Module 2.2.1 Server Site Root Console**

Identification: Module 2.2.1 Server\_Site\_Root\_Console Function: This module shall receive

• CCmsg\_2 from the module 1.2.1. User\_id\_list shall be taken from the User Information File to check the existence of the user. If the user exists SCmsg\_3 else SCmsg\_4 shall be sent to the module 1.2.1 for user addition.

• CCmsg\_2 from the module 1.2.1. User\_id, Password, Real\_name and System\_group shall be taken from the User Information File according to the specification given in subsection 3.3.1. If the operation succeeds SCmsg\_3 else SCmsg\_4 shall be sent to the module 1.2.1 for user deletion and user update.

• CCmsg\_3 from the module 1.2.1. Room\_name\_list shall be taken from the Room Information File to check the existence of the room. If the room exists SCmsg\_5 else SCmsg\_6 shall be sent to the module 1.2.1 for room addition.

• CCmsg\_3 from the module 1.2.1. Room\_name, Reviewie Group, Reviewer Group and User\_id of Customer shall be taken from the Room Information File according to the specification given in subsection 3.3.2. If the operation succeeds SCmsg\_5 else SCmsg\_6 shall be sent to the module 1.2.1 for room deletion and room update

• CCmsg\_4 from the module 1.2.1. Chat\_group\_name\_list shall be taken from the User Information File to check the existence of the chat group. If the chat group exists SCmsg\_7 else SCmsg\_8 shall be sent to the module 1.2.1 for chat group addition.

• CCmsg\_4 from the module 1.2.1. Chat\_group\_name and User\_id\_list shall be taken from the User Information File according to the specification given in subsection 3.3.1. If the operation succeeds SCmsg\_7 else SCmsg\_8 shall be sent to the module 1.2.1 for chat group deletion and chat group update.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_2 | To query the existence of a username | None | SCmsg\_3, SCmsg\_4 |
| SCmsg\_3 | To send the information (specified in format of SCmsg\_3) about the user whose user\_id is taken from the client software | CCmsg\_2 | None |
| SCmsg\_4 | To indicate the non-existence of the user. | CCmsg\_2 | None |
| CCmsg\_3 | To query the existence of a room name | None | SCmsg\_5, SCmsg\_6 |
| SCmsg\_5 | To send the information (specified in format of SCmsg\_5) about the room whose room\_name is taken from the client software | CCmsg\_3 | None |
| SCmsg\_6 | To indicate the non-existence of the room. | CCmsg\_3 | None |
| CCmsg\_4 | To query the existence of a chat group | None | SCmsg\_7, SCmsg\_8 |
| SCmsg\_7 | To send the information (specified in format of SCmsg\_7) about the chat group whose chat\_group is taken from the client software | CCmsg\_4 | None |
| SCmsg\_8 | To indicate the non-existence of the chat group. | CCmsg\_4 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_2 | askuser:user\_id: |
| SCmsg\_3 | askuser:user\_id:password:real\_name:system\_group: |
| SCmsg\_4 | askuser:failed: |
| CCmsg\_3 | askroom:room\_name: |
| SCmsg\_5 | askroom:room\_name:reviewie\_group:reviewer\_group: customer\_user\_id: |
| SCmsg\_6 | askroom:failed: |
| CCmsg\_4 | askchatgroup:chat\_group: |
| SCmsg\_7 | askchatgroup:chat\_group:user\_id\_list: |
| SCmsg\_8 | askchatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_2 | askuser: static string |
| SCmsg\_3 | askuser: static string |
| SCmsg\_4 | askuser: static string failed: static string |
| CCmsg\_3 | askroom: static string |
| SCmsg\_5 | askroom: static string |
| SCmsg\_6 | askroom: static string  failed: static string |
| CCmsg\_4 | askchatgroup: static string |
| SCmsg\_7 | askchatgroup: static string  user\_id: semicolon seperated user\_id list |
| SCmsg\_8 | askchatgroup: static string  failed: static string |

**5.1.2.2.2 Module 2.2.2 Server Site User Addition**

Identification: Module 2.2.2 Server\_Site\_User\_Addition Function: This module shall receive the inputs (CCmsg\_5) from the module 1.2.2. The User Information File shall be modified by reformatting User\_id, Password, Real\_name and System Group according to the specification given in subsection 3.3.1. If the operation succeeds SCmsg\_9. else SCmsg\_10 shall be sent to the module 1.2.2.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_5 | To get the necessary inputs (specified in format of CCmsg\_5) for addition of a new user from the root and send them to server software. | None | SCmsg\_9, SCmsg\_10 |
| SCmsg\_9 | To indicate the successful addition of the user. | CCmsg\_5 | None |
| SCmsg\_10 | To indicate the failed addition of the user. | CCmsg\_5 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_5 | adduser:user\_id:password:real\_name:system\_group: |
| SCmsg\_9 | adduser:successful: |
| SCmsg\_10 | adduser:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_5 | askuser: static string |
| SCmsg\_9 | adduser: static string  successful: static string |
| SCmsg\_10 | adduser: static string  failed: static string |

**5.1.2.2.3 Module 2.2.3 Server Site User Deletion**

Identification: Module 2.2.3 Server\_Site\_User\_Deletion Function: This module shall receive the inputs (CCmsg\_7) from the module 1.2.3. The User Information File shall be modified by deleting the user from the User Information File. If the operation succeeds SCmsg\_13 else SCmsg\_14 shall be sent to the module 1.2.3.

Interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_7 | To get the user\_id for deletion of an existing user from the root and send it to server software. | None | SCmsg\_13, SCmsg\_14 |
| SCmsg\_13 | To indicate the successful deletion of the user | CCmsg\_7 | None |
| SCmsg\_14 | To indicate the failed deletion of the user. | CCmsg\_7 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_7 | deleteuser:user\_id: |
| SCmsg\_13 | deleteuser:successful: |
| SCmsg\_14 | deleteuser:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_7 | deleteuser: static string |
| SCmsg\_13 | deleteuser: static string  successful: static string |
| SCmsg\_14 | deleteuser: static string  failed: static string |

**5.1.2.2.4 Module 2.2.4 Server Site User Update**

Identification: Module 2.2.4 Server\_Site\_User\_Update Function: This module shall receive the inputs (CCmsg\_6) from the module 1.2.4. The User Information File shall be modified by reformatting Password, Real\_name and

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System\_group according to the specification given in subsection 3.3.1. If the operation succeeds SCmsg\_11, else SCmsg\_12 shall be sent to the module 1.2.4.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_6 | To get the necessary inputs (specified in format of CCmsg\_6) for update of an existing user from the root and send them to server software. | None | SCmsg\_11, SCmsg\_12 |
| SCmsg\_11 | To indicate the successful update of the user. | CCmsg\_6 | None |
| SCmsg\_12 | To indicate the failed update of the user | CCmsg\_6 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_6 | updateuser:user\_id:password:real\_name:system\_group: |
| SCmsg\_11 | updateuser:successful: |
| SCmsg\_12 | updateuser:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_6 | updateuser: static string |
| SCmsg\_11 | updateuser: static string  successful: static string |
| SCmsg\_12 | updateuser: static string  failed: static string |

**5.1.2.2.5 Module 2.2.5 Server Site Room Addition**

Identification: Module 2.2.5 Server\_Site\_Room\_Addition Function: This module shall receive the inputs (CCmsg\_8) from the module 1.2.5. The Room Information File shall be modified by reformatting Room\_name, Reviewie Group, Reviewer Group and User\_id of Customer according to the specification given in subsection 3.3.2. If the operation succeeds SCmsg\_15. else SCmsg\_16 shall be sent to the module 1.2.5.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_8 | To get the necessary inputs (specified in format of CCmsg\_8) for addition of a new room from the root and send them to server software. | None | SCmsg\_15, |
| SCmsg\_15 | To indicate the successful addition of the room | CCmsg\_8 | None |
| SCmsg\_16 | To indicate the failed addition of the room. | CCmsg\_8 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_8 | addroom:room\_name:reviewie\_group:reviewer\_group: customer\_user\_id: |
| SCmsg\_15 | addroom:successful: |
| SCmsg\_16 | addroom:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_8 | addroom: static string |
| SCmsg\_15 | addroom: static string  successful: static string |
| SCmsg\_16 | addroom: static string  failed: static string |

**5.1.2.2.6 Module 2.2.6 Server Site Room Deletion**

Identification: Module 2.2.6 Server\_Site\_Room\_Deletion Function: This module shall receive the inputs (CCmsg\_10) from the module 1.2.5. The User Information File shall be modified by deleting the user from Room Information File. If the operation succeeds SCmsg\_19, else SCmsg\_20 shall be sent to the module 1.2.5.

Interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_10 | To get the room\_name for deletion of an existing room from the root and send it to server software. | None | SCmsg\_19, SCmsg\_20 |
| SCmsg\_19 | To indicate the successful deletion of the room | CCmsg\_10 | None |
| SCmsg\_20 | To indicate the failed deletion of the room. | CCmsg\_10 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_10 | deleteroom:room\_name: |
| SCmsg\_19 | deleteroom:successful: |
| SCmsg\_20 | deleteroom:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_10 | deleteroom: static string |
| SCmsg\_19 | deleteroom: static string  successful: static string |
| SCmsg\_20 | deleteroom: static string  failed: static string |

**5.1.2.2.7 Module 2.2.7 Server Site Room Update**

Identification: Module 2.2.7 Server\_Site\_Room\_Update Function: This module shall receive the inputs (CCmsg\_9) from the module 1.2.7. The Room Information File shall be modified by reformatting Reviwie Group, Reviwer Group and User\_id of Customer according to the specification given in subsection 3.3.2. If the operation succeeds SCmsg\_17, else SCmsg\_18 shall be sent to the module 1.2.7.

Interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_9 | To get the necessary inputs (specified in format of CCmsg\_9) for update of an existing room from the root and send them to server software. | None | SCmsg\_17, SCmsg\_18 |
| SCmsg\_17 | To indicate the successful update of the room. | CCmsg\_9 | None |
| SCmsg\_18 | To indicate the failed update of the room. | CCmsg\_9 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_9 | updateroom:room\_name:reviewie\_group: reviewer\_group:customer\_user\_id: |
| SCmsg\_17 | updateroom:successful: |
| SCmsg\_18 | updateroom:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_9 | updateroom: static string |
| SCmsg\_17 | updateroom: static string  successful: static string |
| SCmsg\_18 | updateroom: static string  failed: static string |

**5.1.2.2.8 Module 2.2.8 Server Site Chat Group Addition**

Identification: Module 2.2.8 Server\_Site\_Chat\_Group\_Addition Function: This module shall receive the inputs (CCmsg\_11) from the module 1.2.8. The User Information File shall be modified by reformatting Chat\_group\_name User\_id\_list according to the specification given in subsection 3.3.1. If the operation succeeds SCmsg\_21, else SCmsg\_22 shall be sent to the module 1.2.8.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_11 | To get the necessary inputs (specified in format of CCmsg\_11) for addition of a new chat group from the root and send them to server software. | None | SCmsg\_21, SCmsg\_22 |
| SCmsg\_21 | To indicate the successful addition of the chat group. | CCmsg\_11 | None |
| SCmsg\_22 | To indicate the failed addition of the chat group. | CCmsg\_11 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_11 | addchatgroup:chat\_group:user\_id\_list: |
| SCmsg\_21 | addchatgroup:successful: |
| SCmsg\_22 | addchatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_11 | addchatgroup: static string  user\_id: semicolon seperated user\_id list |
| SCmsg\_21 | addchatgroup: static string  successful: static string |
| SCmsg\_22 | addchatgroup: static string  failed: static string |

**5.1.2.2.9 Module 2.2.9 Server Site Chat Group Deletion**

Identification: Module 2.2.9 Server\_Site\_Chat\_Group\_Deletion

Function: This module shall receive the inputs (CCmsg\_13) from the module 1.2.9. The User Information File shall be modified by deleting the Chat\_group\_name from all the entries. If the operation succeeds SCmsg\_25, else SCmsg\_26 shall be sent to the module 1.2.9.

Interface

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_13 | To get the chat\_group for deletion of an existing chat group from the root and send it to server software. | None | SCmsg\_25, SCmsg\_26 |
| SCmsg\_25 | To indicate the successful deletion of the chat group. | CCmsg\_13 | None |
| SCmsg\_26 | To indicate the failed deletion of the chat group | CCmsg\_13 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_13 | deletechatgroup:chat\_group: |
| SCmsg\_25 | deletechatgroup:successful: |
| SCmsg\_26 | deletechatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_13 | deletechatgroup: static string |
| SCmsg\_25 | deletechatgroup: static string  successful: static string |
| SCmsg\_26 | deletechatgroup: static string  failed: static string |

**5.1.2.2.10 Module 2.2.10 Server Site Chat Group Update**

Identification: Module 2.2.10 Server\_Site\_Chat\_Group\_Update Function: This module shall receive the inputs (CCmsg\_12) from the module 1.2.10. The User Information File shall be modified by reformatting User\_id\_list according to the specification given in subsection 3.3.1. If the operation succeeds SCmsg\_23, else SCmsg\_24 shall be sent to the module 1.2.10.

Interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_12 | To get the necessary inputs (specified in format of CCmsg\_12) for update of an existing chat group from the root and send them to server software. | None | SCmsg\_23, SCmsg\_24 |
| SCmsg\_23 | To indicate the successful update of the chat group | CCmsg\_12 | None |
| SCmsg\_24 | To indicate the failed update of the chat group. | CCmsg\_12 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_12 | updatechatgroup:chat\_group:user\_id\_list: |
| SCmsg\_23 | updatechatgroup:successful: |
| SCmsg\_24 | updatechatgroup:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_12 | updatechatgroup: static string  user\_id: semicolon seperated user\_id list |
| SCmsg\_23 | updatechatgroup: static string  successful: static string |
| SCmsg\_24 | updatechatgroup: static string  failed: static string |

**5.1.2.3 Module 2.3 Server Site Chat**

Identification: Module 2.3 Server\_Site\_Chat Function: This module shall receive following four the inputs  CCmsg\_14 form the module 1.3, If the operation succeeds SCmsg\_27 shall be sent to the module 1.3.  CCmsg\_15 form the module 1.3, If the operation succeeds SCmsg\_28 shall be sent to the module 1.3.  CCmsg\_16, form the module 1.3, If the operation succeeds SCmsg\_29 and SCmsg\_30 or SCmsg\_31shall be sent to the module 1.3.  CCmsg\_17 form the module 1.3, If the operation succeeds SCmsg\_32 or SCmsg\_33 shall be sent to the module 1.3.

Interface:

|  |  |  |  |
| --- | --- | --- | --- |
| **Code** | **use** | **Predecessor** | **Successor** |
| CCmsg\_14 | To get the message from the user and send it to the server software | None | SCmsg\_27 |
| SCmsg\_27 | To get the message from the client software and send it to the all client software which are in the same room | CCmsg\_14 | None |
| CCmsg\_15 | To query the room list of ION-CHAT SYSTEM | None | SCmsg\_28 |
| SCmsg\_28 | To send the room\_list to the client software | CCmsg\_15 | None |
| CCmsg\_16 | To query the user list of ION-CHAT SYSTEM for a specific room name. | None | SCmsg\_29, SCmsg\_31 |
| SCmsg\_29 | To send the user\_list of a specific room to the client software. | CCmsg\_16 | None |
| SCmsg\_30 | To send the active user\_list of a specific room to the client software when a new user enter to the room | None | None |
| SCmsg\_31 | To indicate the failed query of the user\_list of a specific room | CCmsg\_16 | None |
| CCmsg\_17 | To send user\_id of the user to the server software to logout the user. | None | SCmsg\_32, SCmsg\_33 |
| SCmsg\_32 | To indicate the successful logout of the user from the ION-CHAT SYSTEM | CCmsg\_17 | None |
| SCmsg\_33 | To indicate the failed logout of the user from the ION-CHAT SYSTEM | CCmsg\_17 | None |

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_14 | chatmsg:chat\_group:real\_name:chat\_message |
| SCmsg\_27 | chatmsg:chat\_group:real\_name:chat\_message |
| CCmsg\_15 | askroomlist: |
| SCmsg\_28 | askroomlist:room\_name\_list: |
| CCmsg\_16 | askalluserlist:room\_name: |
| SCmsg\_29 | askalluserlist:user\_id/chat\_group/real\_name:user\_id/ chat\_group/real\_name:user\_id/customer/real\_name: user\_id/instructor/real\_name: |
| SCmsg\_30 | askactiveuserlist:user\_id\_list |
| SCmsg\_31 | askalluserlist:failed: |
| CCmsg\_17 | logout:user\_id: |
| SCmsg\_32 | logout:successful: |
| SCmsg\_33 | logout:failed: |

|  |  |
| --- | --- |
| **Code** | **Format Detail** |
| CCmsg\_14 | chatmsg: static string |
| SCmsg\_27 | chatmsg: static string |
| CCmsg\_15 | askroomlist: static string |
| SCmsg\_28 | askroomlist: static string  room\_name\_list: semicolon seperated room\_name list |
| CCmsg\_16 | askalluserlist: static string |
| SCmsg\_29 | askalluserlist: static string  user\_id/chat\_group/real\_name: semicolon seperated list for reviewie group members  user\_id/chat\_group/real\_name: semicolon seperated list for reviewier group members  user\_id/customer/real\_name: for the customer assigned to the room user\_id/instructor/real\_name: semicolon seperated list for all instructors |
| SCmsg\_30 | askactiveuserlist: static string  user\_id: semicolon seperated user\_id list |
| SCmsg\_31 | askalluserlist: static string  failed: static string |
| CCmsg\_17 | logout: static string |
| SCm sg\_3 2 | logout: static string  successful: static string |
| SCmsg\_33 | logout: static string  failed: static string |

**6 DETAILED DESIGN**

A list of error messages [Emsg\_\*], success messages [Smsg\_\*] and communication messages [CCmsg\_\* and SCmsg\_\*] used on the DFD’s can be seen in Appendix-A.

The description of common data elements used both in communication messages and in algorithms of modules are given in Appendix-D.

A list of the methods used on the flowcharts’ can be seen in Appendix-I.

**6.1 Module Detailed Design**

**6.1.1 Module 1 Chat Client**

**6.1.1.1 Module 1.1 Client Site User Authentication**

Identification: Module 1.1 Client\_Site\_User\_Authentication Processing: The internal details of this module is given in Figure-27 in Appendix-F.

**6.1.1.2 Module 1.2 Client Site Root Functions**

6.1.1.2.1 Module 1.2.1 Client Site Root Console Identification: Module 1.2.1 Client\_Site\_Root\_Console Processing: The internal details of this module is given in Figure-49 in Appendix-F.

**6.1.1.2.2 Module 1.2.2 Client Site User Addition**

Identification: Module 1.2.2 Client\_Site\_User\_Addition Processing: The internal details of this module is given in Figure-28 in Appendix-F.

**6.1.1.2.3 Module 1.2.3 Client Site User Deletion**

Identification: Module 1.2.3 Client\_Site\_User\_Deletion Processing: The internal details of this module is given in Figure-29 in Appendix-F.

**6.1.1.2.4 Module 1.2.4 Client Site User Update**

Identification: Module 1.2.4 Client\_Site\_User\_Update Processing: The internal details of this module is given in Figure-30 in Appendix-F.

**6.1.1.2.5 Module 1.2.5 Client Site Room Addition**

Identification: Module 1.2.5 Client\_Site\_Room\_Addition Processing: The internal details of this module is given in Figure-31 in Appendix-F.

**6.1.1.2.6 Module 1.2.6 Client Site Room Deletion**

Identification: Module 1.2.6 Client\_Site\_Room\_Deletion Processing: The internal details of this module is given in Figure-32 in Appendix-F.

**6.1.1.2.7 Module 1.2.7 Client Site Room Update**

Identification: Module 1.2.7 Client\_Site\_Room\_Update Processing: The internal details of this module is given in Figure-33 in Appendix-F.

**6.1.1.2.8 Module 1.2.8 Client Site Chat Group Addition**

Identification: Module 1.2.8 Client\_Site\_Chat\_Group\_Addition Processing: The internal details of this module is given in Figure-34 in Appendix-F.

**6.1.1.2.9 Module 1.2.9 Client Site Chat Group Deletion**

Identification: Module 1.2.9 Client\_Site\_Chat\_Group\_Deletion

Processing: The internal details of this module is given in Figure-35 in Appendix-F.

**6.1.1.2.10 Module 1.2.10 Client Site Chat Group Update**

Identification: Module 1.2.10 Client\_Site\_Chat\_Group\_Update Processing: The internal details of this module is given in Figure-36 in Appendix-F.

**6.1.1.3 Module 1.3 Client Site Chat**

Identification: Module 1.3 Client\_Site\_Chat Processing: The internal details of this module is given in Figure-37 in Appendix-F.

**6.1.2 Module 2 Chat Server**

**6.1.2.1 Module 2.1 Server Site User Authentication**

Identification: Module 2.1 Server\_Site\_User\_Authentication Processing: The internal details of this module is given in Figure-38 in Appendix-F.

**6.1.2.2 Module 2.2 Server Site Root Functions**

**6.1.2.2.1 Module 2.2.1 Server Site Root Console**

Identification: Module 2.2.1 Server\_Site\_Root\_Console Processing: The internal details of this module is given in Figure-50 in Appendix-F.

**6.1.2.2.2 Module 2.2.2 Server Site User Addition**

Identification: Module 2.2.2 Server\_Site\_User\_Addition Processing: The internal details of this module is given in Figure-39 in Appendix-F.

**6.1.2.2.3 Module 2.2.3 Server Site User Deletion**

Identification: Module 2.2.3 Server\_Site\_User\_Deletion Processing: The internal details of this module is given in Figure-40 in Appendix-F.

**6.1.2.2.4 Module 2.2.4 Server Site User Update**

Identification: Module 2.2.4 Server\_Site\_User\_Update Processing: The internal details of this module is given in Figure-41 in Appendix-F.

**6.1.2.2.5 Module 2.2.5 Server Site Room Addition**

Identification: Module 2.2.5 Server\_Site\_Room\_Addition Processing: The internal details of this module is given in Figure-42 in Appendix-F.

**6.1.2.2.6 Module 2.2.6 Server Site Room Deletion**

Identification: Module 2.2.6 Server\_Site\_Room\_Deletion Processing: The internal details of this module is given in Figure-43 in Appendix-F.

**6.1.2.2.7 Module 2.2.7 Server Site Room Update**

Identification: Module 2.2.7 Server\_Site\_Room\_Update Processing: The internal details of this module is given in Figure-44 in Appendix-F.

**6.1.2.2.8 Module 2.2.8 Server Site Chat Group Addition**

Identification: Module 2.2.8 Server\_Site\_Chat\_Group\_Addition Processing: The internal details of this module is given in Figure-45 in Appendix-F.

**6.1.2.2.9 Module 2.2.9 Server Site Chat Group Deletion**

Identification: Module 2.2.9 Server\_Site\_Chat\_Group\_Deletion Processing: The internal details of this module is given in Figure-46 in Appendix-F.

**6.1.2.2.10 Module 2.2.10 Server Site Chat Group Update**

Identification: Module 2.2.10 Server\_Site\_Chat\_Group\_Update Processing: The internal details of this module is given in Figure-47 in Appendix-F.

**6.1.2.3 Module 2.3 Server Site Chat**

Identification: Module 2.3 Server\_Site\_Chat Processing: The internal details of this module is given in Figure-48 in Appendix-F.

**6.2 Data Detailed Design**

**6.2.1 Data Entity 1 User Information File**

Identification: Data Entity 1 User\_Information\_File Data: The data must be represented by the following way; room\_name:reviewie\_group:reviewer\_group:customer\_user\_id: The detailed description of data elements used in this data entity is given in Appendix-D.

**6.2.2 Data Entity 2 Room Information File**

Identification: Data Entity 2 Room\_Information\_File Data: The data must be represented by the following way; room\_name:reviewie\_group:reviewer\_group:customer\_user\_id: The detailed description of data elements used in this data entity is given in Appendix-D.

**APPENDIX-A**

**Error messages:**

1. Emsg\_1: “Error: Invalid range or invalid data format for input(s)”

2. Emsg\_2: “Error: User deletion failed”

3. Emsg\_3: “Error: User update failed”

4. Emsg\_4: “Error: User addition failed”

5. Emsg\_5: “Error: Room deletion failed”

6. Emsg\_6: “Error: Room update failed”

7. Emsg\_7: “Error: Room addition failed”

8. Emsg\_8: “Error: Chat\_Group deletion failed”

9. Emsg\_9: “Error: Chat\_Group update failed”

10. Emsg\_10: “Error: Chat\_Group addition failed”

11. Emsg\_11: “Error: Login failed”

12. Emsg\_12: “Error: Logout failed”

13. Emsg\_13: “Error: Existing user”

14. Emsg\_14: “Error: Non-existing user”

15. Emsg\_15: “Error: Existing room”

16. Emsg\_16: “Error: Non-existing room”

17. Emsg\_17: “Error: Existing chat\_group”

18. Emsg\_18: “Error: Non-existing chat\_group”

**Success messages:**

1. Smsg\_1: “User deletion successful”

2. Smsg\_2: “User update successful”

3. Smsg\_3: “User addition successful”

4. Smsg\_4: “Room deletion successful”

5. Smsg\_5: “Room update successful”

6. Smsg\_6: “Room addition successful”

7. Smsg\_7: “Chat\_Group deletion successful”

8. Smsg\_8: “Chat\_Group update successful”

9. Smsg\_9: “Chat\_Group addition successful”

10. Smsg\_10: “Logout successful”

**Communication Messages:**

|  |  |
| --- | --- |
| **Code** | **Format** |
| CCmsg\_1 | login:user\_id:password: |
| SCmsg\_1a | login:root: |
| SCmsg\_1b | login:instructor: |
| SCmsg\_1c | login:customer:room\_name: |
| SCmsg\_1d | login:student:room\_name\_as\_reviewie\_group: room\_name\_as\_reviewer\_group: |
| SCmsg\_2 | login:failed: |
| CCmsg\_2 | askuser:user\_id: |
| SCmsg\_3 | askuser:user\_id:password:real\_name:system\_group: |
| SCmsg\_4 | askuser:failed: |
| CCmsg\_3 | askroom:room\_name: |
| SCmsg\_4 | askuser:failed: |
| CCmsg\_3 | askroom:room\_name: |
| SCmsg\_5 | askroom:room\_name:reviewie\_group:reviewer\_group: customer\_user\_id: |
| SCmsg\_6 | askroom:failed: |
| CCmsg\_4 | askchatgroup:chat\_group: |
| SCmsg\_8 | askchatgroup:failed: |
| CCmsg\_5 | adduser:user\_id:password:real\_name:system\_group: |
| SCmsg\_9 | adduser:successful: |
| SCmsg\_10 | adduser:failed: |
| CCmsg\_6 | updateuser:user\_id:password:real\_name:system\_group: |
| SCmsg\_11 | updateuser:successful: |
| SCmsg\_12 | updateuser:failed: |
| CCmsg\_7 | deleteuser:user\_id: |
| SCmsg\_13 | deleteuser:successful: |
| SCmsg\_14 | deleteuser:failed: |
| CCmsg\_8 | addroom:room\_name:reviewie\_group:reviewer\_group: customer\_user\_id: |
| SCmsg\_15 | addroom:successful: |
| SCmsg\_16 | addroom:failed: |
| CCmsg\_9 | updateroom:room\_name:reviewie\_group: reviewer\_group:customer\_user\_id: |
| SCmsg\_17 | updateroom:successful: |
| SCmsg\_18 | updateroom:failed: |
| CCmsg\_10 | deleteroom:room\_name: |
| SCmsg\_19 | deleteroom:successful: |
| SCmsg\_20 | deleteroom:failed: |
| CCmsg\_11 | addchatgroup:chat\_group:user\_id\_list: |
| SCmsg\_21 | addchatgroup:successful: |
| SCmsg\_22 | addchatgroup:failed: |
| CCmsg\_12 | updatechatgroup:chat\_group:user\_id\_list: |
| SCmsg\_23 | updatechatgroup:successful: |
| SCmsg\_24 | updatechatgroup:failed: |
| CCmsg\_13 | deletechatgroup:chat\_group: |
| SCmsg\_25 | deletechatgroup:successful: |
| SCmsg\_26 | deletechatgroup:failed: |
| CCmsg\_14 | chatmsg:chat\_group:real\_name:chat\_message |
| SCmsg\_27 | chatmsg:chat\_group:real\_name:chat\_message |
| CCmsg\_15 | askroomlist: |
| SCmsg\_28 | askroomlist:room\_name\_list: |
| CCmsg\_16 | askalluserlist:room\_name: |
| SCmsg\_29 | askalluserlist:user\_id/chat\_group/real\_name:user\_id/  chat\_group/real\_name:user\_id/customer/real\_name: user\_id/instructor/real\_name: |
| SCmsg\_30 | askactiveuserlist:user\_id\_list |
| SCmsg\_31 | askalluserlist:failed: |
| CCmsg\_17 | logout:user\_id: |
| SCmsg\_32 | logout:successful: |
| SCmsg\_33 | logout:failed: |

**APPENDIX-B**

**Intermodule Dependencies:**

Emsg\_1

Or

Emsg\_11 c1:

User\_id

System Group

c11: User\_id

Reviewie Group Room\_name Reviewer Group Room\_name

System Group

SCmsg\_1

or CCmsg\_1

Scmsg\_2

Figure 1: Module 1.1 Client\_Site\_User\_Authentication

Emsg\_1,

Emsg\_4,

or Smsg\_3

c2

User\_id

SCmsg\_9 CCmsg\_5

or

SCmsg\_

**Figure 3:** Module 1.2.2 Client\_Site\_User\_Addition

Emsg\_2

or Smsg\_1

c 3:

User\_id,

Password,

Real\_name,

System\_group

SCmsg\_13 CCmsg\_7

or

SCmsg\_14

**Figure 4**: Module 1.2.3 Client\_Site\_User\_Delet

Emsg\_1,

Emsg\_3

or Smsg\_2

c 4:

User\_id,

Password,

Real\_name,

System\_group

SCmsg\_11 CCmsg\_6

or

SCmsg\_12

**Figure 5**: Module 1.2.4 Client\_Site\_User\_Update

Emsg\_1

Emsg\_7

or

c5 Emsg\_6

Room­\_name

SCmsg\_15 CCmsg\_8

or

SCmsg\_16

**Figure 6**: Module 1.2.5 Client\_Site\_Room\_Addition

c 6: Emsg\_5 Room\_name, or

Reviewie Group Emsg\_4

Reviewie Group

User\_id of Customer

SCmsg\_19 CCmsg\_10

or

SCmsg\_20

**Figure 7:** Module 1.2.6 Client\_Site\_Room\_Deletion

Emsg\_1

c 7: Emsg\_5 Room\_name, or

Reviewie Group Emsg\_4

Reviewie Group

User\_id of Customer

SCmsg\_17 CCmsg\_9

or

SCmsg\_18

**Figure 8**: Module 1.2.7 Client\_Site\_Room\_Update

Emsg\_1,

Emsg\_10

or

Smsg\_29

c8:

Chat\_group\_name

SCmsg\_21 CCmsg\_11

or

SCmsg\_22

**Figure 9**: Module 1.2.8 Client\_Site\_Chat\_Group\_Addition

Emsg\_8

or

Smsg\_7

C9:

Chat\_group\_name

User\_id\_list

SCmsg\_25 CCmsg\_13

or

SCmsg\_26

**Figure 10**: Module 1.2.9 Client\_Site\_Chat\_Group\_Deletion

Emsg\_1

Emsg\_9

or

Smsg\_8

C10:

Chat\_group\_name

User\_id\_list

SCmsg\_23 CCmsg\_12

or

SCmsg\_24

**Figure 11:** Module 1.2.10 Client\_Site\_Chat\_Group\_Update

Emsg\_1

c11:

User\_id Emsg\_12

Reviewie Group Room\_name or CCmsg\_15

Reviewie Group Room\_name Smsg\_10

System Group SCmsg\_28

Reviewie Group

SCmsg\_29 and

CCmsg\_14 CCmsg\_16 SCmsg\_30

SCmsg\_27 or SCmsg\_31

CCmsg\_17 SCmsg\_32

or

SCmsg\_33

**Figure 12:** Module 1.3 Client\_Site\_Chat

SCmsg\_1

or CCmsg\_1

Scmsg\_2

Reviewie Group Room\_name User\_id

Password

Reviewer Group Room\_name

User Information File

Room Information File

**Figure 13:** Module 2.1 Server\_Site\_User\_Authentication

SCmsg\_5

or CCmsg\_2 SCmsg\_3

Scmsg\_6 or CCmsg\_2 SCmsg\_7

or

Scmsg\_4 CCmsg\_ SCmsg\_8

User\_id\_list

Room\_name

Chat\_group\_name Reviewie Group

Chat\_group\_name\_list Reviewie Group

Room\_name\_list User\_id of Customer

Room Information File

User Information File

User\_id,

Password,

Real\_name,

System\_group

SCmsg\_9

or CCmsg\_5

Scmsg\_10

User\_id

Password,

Real\_name,

User Information File

Figure 15: Module 2.2.2 Server\_Site\_User\_Addition

SCmsg\_13

or CCmsg\_7

Scmsg\_14

User\_id

User Information File

**Figure 16:** Module 2.2.3 Server\_Site\_User\_Deletion

SCmsg\_11

or CCmsg\_6

Scmsg\_12

Modified

Password,

Real\_name

User Information File

Figure 17: Module 2.2.4 Server\_Site\_User\_Update

SCmsg\_15

or CCmsg\_8

Scmsg\_16

Room\_name

Reviewie Group

Reviewer Group

User\_id of Customer

Room Information File

**Figure 18:** Module 2.2.5 Server\_Site\_Room\_Addition

SCmsg\_19

or CCmsg\_10

Scmsg\_20

Room\_name

Room Information File

**Figure 19:** Module 2.2.6 Server\_Site\_Room\_Deletion

SCmsg\_17

or CCmsg\_9

Scmsg\_18

Modified

Reviewie Group

Reviewer Group

User\_id of Customer

Room Information File

**Figure 20:** Module 2.2.7 Server\_Site\_Room\_Update

SCmsg\_21

or CCmsg\_11

Scmsg\_22

Chat\_group\_name

User\_id\_list

User Information File

**Figure 21:** Module 2.2.8 Server\_Site\_Chat\_Group\_Addition

SCmsg\_25

or CCmsg\_13

Scmsg\_26

Chat\_group\_name

User Information File

**Figure 22:** Module 2.2.9 Server\_Site\_Chat\_Group\_Deletion

SCmsg\_23

or CCmsg\_12

Scmsg\_24

Modified

User\_id\_list

User Information File

**Figure 23**: Module 2.2.10 Server\_Site\_Chat\_Group\_Update

CCmsg\_15

SCmsg\_28

SCmsg\_29 and

SCmsg\_30

Or SCmsg\_31

CCmsg\_14 CCmsg\_16 S

SCmsg\_27 SCmsg\_32

CCmsg\_14 or

SCmsg\_33

**Figure 24**: Module 2.3 Server\_Site\_Chat