| Client | Server Management System |
| --- | --- |
| User | User |
| Functional requirements | Req 1: Server Management  Req RF 1.1: The system shall allow users to add servers to the simulated environment.  Req RF 1.2: The system shall allow users to remove servers from the simulated environment.  Req 2: Connection Management  Req RF 2.1: The system shall allow users to establish connections between servers.  Req RF 2.2: The system shall allow users to remove connections between servers.  Req 3: Connection Speed  Req RF 3.1: The system shall allow user to find the fastest route to send data between to servers. |
| Problem context | In 2023 there’s been a dire need for services that enable companies to quickly know the speeds and routes their servers provide for better use of their immediate resources. Rather than having to manually check every server they would rather set them up in a simulated environment with their respective connection information to quickly learn the fastest route between servers for stability and efficiency. For this problem our company aims to develop a simulated environment that mimics the respective server connections for companies to input their networks to and micromanage their resources.  The system needs a javafx interface with an always showing diagram of all servers and server connections. Must have a add server button which includes name of server, and IP address. Must have a add connection button which links servers through the IP’s. The server diagram must be always adjusting to changes. A server can’t connect to more than 8 adjacent servers. |
| Non-functional requirements | Req NF 1: The system shall have a JavaFX interface.  Req NF 2: User Interface  Req RF 2.1: The interface shall display a diagram showing all servers and their connections.  Req RF 2.1.1: Diagram should be updated with every addition or removal of both servers and connections. |

| Name or identifier | R1.1 | | |
| --- | --- | --- | --- |
| Abstract | The system shall allow users to add servers to the simulated environment. | | |
| Inputs | Input name | Data type | Condition of select or repetition |
| serverName | String | Can’t be null. |
| serverIP | String | Can’t be null, has to have 4 pairs of numbers separated by punctuation ( . ). |
| ServerType | Type | Main, Secondary, Small. Can’t be null. |
| General activities needed to obtain the results | 1. Click add server button 2. Insert inputs 3. Click Confirm | | |
| Result or postcondition | Creates a new server and is shown in diagram | | |
| Outputs | Output name | Data type | Condition of select or repetition |
| MsgConfirmation | String | On successful addicion |

| Name or identifier | R1.2 | | |
| --- | --- | --- | --- |
| Abstract | The system shall allow users to remove servers from the simulated environment. | | |
| Inputs | Input name | Data type | Condition of select or repetition |
| serverIP | String | Can’t be null, has to have 4 pairs of numbers separated by punctuation ( . ). |
| General activities needed to obtain the results | 1. Click remove server button 2. Insert input 3. Click Confirm | | |
| Result or postcondition | Removes server if IP exists | | |
| Outputs | Output name | Data type | Condition of select or repetition |
| MsgConfirmation | String | On successful removal, or error on server not found. |

| Name or identifier | R2.1 | | |
| --- | --- | --- | --- |
| Abstract | The system shall allow users to establish connections between servers. | | |
| Inputs | Input name | Data type | Condition of select or repetition |
| firstServerIP | String | Can’t be null, has to have 4 pairs of numbers separated by punctuation ( . ). |
| secondServerIP | String | Can’t be null, has to have 4 pairs of numbers separated by punctuation ( . ). |
| General activities needed to obtain the results | 1. Click add connection button 2. Insert inputs 3. Click Confirm | | |
| Result or postcondition | Creates new connection and show sin diagram | | |
| Outputs | Output name | Data type | Condition of select or repetition |
| MsgConfirmation | String | On successful connection or error on wrong inputs. |

| Name or identifier | R2.2 | | |
| --- | --- | --- | --- |
| Abstract | The system shall allow users to remove connections between servers. | | |
| Inputs | Input name | Data type | Condition of select or repetition |
| firstServerIP | String | Can’t be null, has to have 4 pairs of numbers separated by punctuation ( . ). |
| secondServerIP | String | Can’t be null, has to have 4 pairs of numbers separated by punctuation ( . ). |
| General activities needed to obtain the results | 1. Click remove connection button 2. Insert inputs 3. Click Confirm | | |
| Result or postcondition | Removes connection and change is shown in diagram | | |
| Outputs | Output name | Data type | Condition of select or repetition |
| MsgConfirmation | String | On successful removal or error on wrong inputs. |

| Name or identifier | R3.1 | | |
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| Abstract | The system shall allow users to find the fastest route to send data between to servers. | | |
| Inputs | Input name | Data type | Condition of select or repetition |
| firstServerIP | Selected Type |  |
| secondServerIP | SelectedType |  |
| dataAmount | double | Cant be null or negative. |
| General activities needed to obtain the results | 1. Click two servers in diagram 2. Click find route 3. Input Amount of data 4. Click confirm | | |
| Result or postcondition | Shows fastests server routes to send that amount of data and shows amount of time it takes to send data. | | |
| Outputs | Output name | Data type | Condition of select or repetition |
| MsgConfirmation | String | Shows fastest route, and route speed of the data. |