Subnet Routing System - Command Documentation

Command List

1. Create Subnet

- **Command:**
  `create subnet <subnet_id> <number_of_systems>`
- **Description:**
  Creates a new subnet with a specified number of systems. The systems are automatically named based on the subnet ID and their index.
- **Example:**
  `create subnet A 3`
  Output:
  `Subnet A with 3 systems created.`

2. Connect Systems

- **Command:**
  `connect <system1_id> <system2_id> <cost>`
- **Description:**
  Connects two systems with a specified cost, allowing communication between them.
- **Example:**
  `connect A1 B2 5`
  Output:
  `Connection established between A1 and B2 with cost 5.`

3. Find Shortest Path

- **Command:**
  `route <source_system_id> <destination_system_id>`
- **Description:**
  Finds and displays the shortest path between two systems based on the connection costs.
- **Example:**
  `route A1 B3`
  Output:
  `Shortest path from A1 to B3: A1 -> B2 -> B3 with cost 7.`

4. Send Packet

- **Command:**
  `send <source_system_id> <destination_system_id> "<message>"`
- **Description:**
  Sends a packet (message) from one system to another via the shortest path.
- **Example:**
  `send A1 B3 "Hello, this is a packet!"`
  Output:

```
Packet sent from A1 to B3 through path: A1 -> B2 -> B3. Message: "Hello,
this is a packet!"
```

5. Remove System

- **Command:**
  `remove system <system_id>`
- **Description:**
  Removes a specific system from the network, along with all its connections.
- **Example:**
  `remove system A1`
  Output:
  `System A1 removed.`

6. Remove Subnet

- **Command:**
  `remove subnet <subnet_id>`
- **Description:**
  Removes an entire subnet and all systems within it.
- **Example:**
  `remove subnet A`
  Output:
  `Subnet A removed.`

7. Show Topology

- **Command:**
  `show`
- **Description:**
  Displays the current network topology, including all subnets, systems, and their connections.
- **Example:**
  `show`
  Output:
- `yaml`
- Copy code
- `Subnets and Systems:Subnet A: A1 A2 A3Subnet B: B1 B2 B3Connections:A1 <-> B2 with cost 5B2 <-> B3 with cost 2`

8. Exit

- **Command:**
  `exit`
- **Description:**
  Exits the system and stops the execution.
- **Example:**
  `exit`
  Output:
  `Exiting...`