**Use Case: Population Information Reporting System**

**1. Use Case Name:**

Generate and Access Population Reports

**2. Actors:**

* **User**: Any individual or organization member who needs to access and generate population reports.
* **System Administrator**: Person responsible for maintaining the system, managing user access, and ensuring data integrity.
* **Database**: The MySQL database containing population data.

**3. Preconditions:**

* Users must have valid credentials to access the system.
* The system must be connected to the MySQL database containing up-to-date population information.

**4. Postconditions:**

* Users can generate various population reports based on the criteria specified.
* Users can access population data at different levels (world, continent, region, country, district, city).
* Reports are generated and displayed or exported in a user-friendly format.

**5. Main Success Scenario:**

1. **User Authentication:**
   * User logs into the system using valid credentials.
2. **Selecting Report Type:**
   * User selects the type of report they wish to generate (e.g., Countries organized by population, Top N populated cities).
3. **Specifying Parameters:**
   * User provides necessary parameters for the report, such as continent, region, country, district, city, or N for top populated entities.
4. **Generating Report:**
   * System retrieves relevant data from the MySQL database based on user inputs.
   * System generates the report and displays it to the user.
5. **Viewing/Exporting Report:**
   * User views the generated report on the screen.
   * Optionally, user exports the report to a file (e.g., PDF, Excel).

**6. Extensions:**

1. **Invalid Credentials:**
   * User enters invalid credentials.
   * System displays an error message and prompts the user to try again.
2. **No Data Found:**
   * User provides parameters that yield no results.
   * System displays a message indicating no data found for the specified criteria.
3. **Database Connection Failure:**
   * System fails to connect to the MySQL database.
   * System displays an error message and logs the issue for the System Administrator to address.
4. **Export Failure:**
   * System encounters an error while exporting the report.
   * System displays an error message and suggests possible resolutions.

**7. Special Requirements:**

* The system should ensure data security and user privacy.
* The system should handle concurrent user requests efficiently.
* Reports should be generated in a timely manner even for large datasets.

**8. Frequency of Use:**

* Daily, depending on user needs for accessing and generating population reports.

**9. Assumptions:**

* The MySQL database is regularly updated with accurate population data.
* Users are familiar with the basic operation of the system and the types of reports available.

**10. Stakeholders:**

* **Users**: Require accurate and timely population information for various purposes (e.g., research, policy making).
* **System Administrators**: Need to ensure the system runs smoothly and securely.
* **Organization**: Benefits from having a reliable system for population reporting to support its operations.