Project requirements

Name:	Md Rezaul Hoque (Reza)
Community & UN SDG(s):	SCWW Saskatchewan Community. UN SDG goal: 3; Good Health and Well-Being
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Project Name	Bingo for Senior Citizens

Functional Requirements

[This section should list the functional requirements for the project including any features or properties of the project's outcomes.]

Generate and download the Bingo Card with unique serial number

User and access management

Secure password management and user authentication must be implemented.

Role: Administrator

System Configuration: Manage and configure system settings, including game rules such as winning patterns and card expiry date modify.

User Management: Create, remove, and assign roles to users.

Role: Bingo Card Generator

Responsibilities:

- **Generate Bingo Cards**: Create and download unique bingo cards for games.
- **Distribute Cards**: Assign and distribute cards based on the orders from players/buyers.
- **Manage Card Inventory**: Keep track of generated cards, their usage, and expiration dates.

Permissions:

- **Access to Card Generation Tool**: Ability to perform the responsibilities required for generating bingo cards.
- **Report Generation**: Ability to generate reports on card usage, distribution, and inventory.

Role: Bingo Caller

Responsibilities:

- **Start Game**: Initiate a new game session.
- **Call Numbers**: Draw and announce bingo numbers.
- **Verify Claims**: Check and verify player claim for bingos.

Permissions:

- **Access to Win Detection Tool**: Ability to perform actions in the Win Detection tool.

Bingo Card Generation

- The system should generate unique bingo cards for each player in a game.
- Cards must follow the standard 5x5 grid format with randomized numbers.
- Download the Bingo Card with unique serial number printed on it.
- Register the bingo cards with the player's name.
- Bingo cards must have an expiration date to ensure they can't be used indefinitely.

Win Detection
- The system must detect winning patterns (e.g., row, column, diagonal) on players' cards.
- Bingo caller can input the drew number
- Immediate notification to the bingo caller when a win is detected.
- Bingo caller can manually search a bingo card by its unique serial number and verify does that card contain winning pattern
- Block the bingo card that has been claimed as bingo to prevent it from being reused in future games.

Technical/Performance Requirements

[This section should list the technical requirements for the project (e.g., the required technology infrastructure) and any performance requirements (e.g., the minimum response time).]

The final solution has 2 main tools
- **Bingo Card Generation tool**
- **Game management/Win detection tool**

Infrastructure: Install the application any local machine - PC or laptop.
Technology stack:
- **Local Databases:** Use SQLite database to store data locally on the user's device.
- **Application Frameworks:** JavaScript/Django.

System Architecture
- **Scalability:** The system must handle up to 10 concurrent users without performance degradation.
- **Reliability:** Ensure 99.9% uptime to provide a seamless gaming experience.

Security
- **Data Encryption:** All user data, including personal information, must be encrypted
- **Secure Authentication:** Strong password base user authentication.

Performance
- **Response Time:** The system must respond to user actions within 2 seconds.

Accuracy
- **Win Detection Accuracy:** 100% accuracy in detecting winning patterns and notify the bingo caller.
- **Unique Serial Numbers:** Ensure that each generated bingo card has a unique serial number.
- **Expiration Management:** Implement automatic expiration for bingo cards after a set period.

User Interface (UI) and User Experience (UX)
- **Responsive Design:** Ensure the UI is responsive and works seamlessly across various devices (desktop, tablet, mobile).
- **Intuitive Navigation:** User-friendly interface and easy to navigate.
- **Download Capability:** Enable users to download generated bingo cards in PDF format.

Reporting and Analytics
- **Usage Reports**: Generate detailed reports on card usage, and game outcomes.

Compliance
- **Regulatory Compliance**: Ensure the system complies with relevant regulations and standards (e.g., SLGA guidelines).