

Database Structure for CRPF Soldier Depression Detection Platform (v2)

1. Users Table

Stores information about all system users (soldiers and administrators)

```
Users
-----
user_id (PK)           // Unique identifier (auto-increment)
force_id               // 9-digit Force ID for soldiers (unique)
password_hash          // Hashed password for authentication
user_type              // 'admin' or 'soldier'
created_at             // Account creation timestamp
last_login             // Last login timestamp
```

2. Questionnaires Table

Stores the questionnaire templates

```
Questionnaires
-----
questionnaire_id (PK)  // Unique identifier
title                  // Questionnaire title
description             // Brief description
status                 // Active, Inactive
created_at             // Creation timestamp
```

3. Questions Table

Stores individual questions that make up questionnaires

```
Questions
-----
question_id (PK)       // Unique identifier
questionnaire_id (FK)  // Reference to parent questionnaire
question_text          // The actual question
created_at             // Creation timestamp
```

4. Weekly_Sessions Table

Tracks weekly questionnaire sessions assigned to soldiers

Weekly_Sessions

session_id (PK)	// Unique identifier
force_id (FK)	// Soldier taking the questionnaire
questionnaire_id (FK)	// Questionnaire assigned
year	// Year of session
start_timestamp	// When session started
completion_timestamp	// When session completed (null if pending)
status	// 'pending', 'completed', 'missed'
nlp_avg_score	// Average NLP depression score for this session
image_avg_score	// Average facial image depression score for this session
combined_avg_score	// Combined (weighted) average depression score

5. Question_Responses Table

Stores individual question responses within a session

Question_Responses

response_id (PK)	// Unique identifier
session_id (FK)	// Reference to weekly session
question_id (FK)	// Question being answered
answer_text	// Transcribed text from voice
nlp_depression_score	// Depression score from NLP analysis
image_depression_score	// Depression score from facial analysis during answer
combined_depression_score	// Combined (weighted) depression score for this answer
timestamp	// When the response was recorded

6. CCTV_Daily_Monitoring Table

Stores daily CCTV monitoring sessions

CCTV_Daily_Monitoring

monitoring_id (PK)	// Unique identifier
date	// Date of monitoring
start_time	// When monitoring started
end_time	// When monitoring ended
status	// 'completed', 'partial', 'failed'

7. CCTV_Detections Table

Stores individual soldier appearances in CCTV

CCTV_Detections	

detection_id (PK)	// Unique identifier
monitoring_id (FK)	// Reference to CCTV daily monitoring session
force_id (FK)	// Soldier detected in CCTV
detection_timestamp	// Time of appearance detection
depression_score	// Depression score from facial analysis

8. Daily_Depression_Scores Table

Stores daily aggregated depression scores from CCTV monitoring

Daily_Depression_Scores	

score_id (PK)	// Unique identifier
force_id (FK)	// Soldier being scored
date	// Date of the score
avg_depression_score	// Average depression score for the day
detection_count	// Number of CCTV detections used in average

9. Weekly_Aggregated_Scores Table

Stores weekly aggregated scores combining questionnaire and CCTV data

Weekly_Aggregated_Scores	

aggregation_id (PK)	// Unique identifier
force_id (FK)	// Soldier being assessed
year	// Year of assessment
questionnaire_score	// Weekly questionnaire combined score
cctv_score	// Weekly average of daily CCTV scores
combined_weekly_score	// Combined final score (questionnaire + CCTV)
risk_level	// 'low', 'medium', 'high', 'critical'

10. System_Settings Table

Stores configurable system parameters

System_Settings

setting_id (PK)	// Unique identifier
setting_name	// Name of the setting
setting_value	// Value of the setting
description	// Description of what the setting controls
updated_at	// When the setting was last updated
updated_by	// User who last updated the setting

Example System Settings:

- `depression_threshold_medium`: Score threshold for medium risk classification
- `depression_threshold_high`: Score threshold for high risk classification
- `depression_threshold_critical`: Score threshold for critical risk classification
- `nlp_weight`: Weight factor for NLP scores in combined calculations
- `facial_weight`: Weight factor for facial emotion scores in combined calculations
- `questionnaire_weight`: Weight for questionnaire scores in weekly aggregation
- `cctv_weight`: Weight for CCTV scores in weekly aggregation

Relationships:

- Each User can be either an Admin or a Soldier
- A Soldier (identified by `force_id`) can have multiple `Weekly_Sessions`
- A `Weekly_Session` contains multiple `Question_Responses`
- A `CCTV_Daily_Monitoring` session contains multiple `CCTV_Detections`
- Each Soldier has one `Daily_Depression_Score` per day
- Each Soldier has one `Weekly_Aggregated_Score` per week
- `System_Settings` store configurable parameters for the platform