FLOOD AID 360

GROUP MEMBERS

NAME	SAP ID	EMAIL ADDRESS
SAKINA MAZHAR	59195	mazharsakina9@gmail.com
MAHTAB MAZHAR	61307	mahtabmazhar1004@gmail.c
IZZA ZIA	59759	ziaizza90@gmail.com

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Dedication/Acknowledgment

Thanks to Allah Almighty who made us able to complete this final project report. Also our course teacher who guided us in this project. All the members of the team who worked hard and diligently to complete this project.

Sakina Mazhar

59195

Izza Zia

59759

Mahtab Mazhar

61307

Abstract

Flood Aid 360 is an integrated digital ecosystem designed to streamline disaster response and recovery operations during large-scale flooding events. Traditional relief efforts often suffer from information silos and logistical bottlenecks; this project addresses these challenges by centralizing data from ground volunteers, government agencies, and donors into a single, cohesive platform. Utilizing real-time geospatial mapping and predictive analytics, Flood Aid 360 enables precise resource allocation, ensuring that food, medical supplies, and rescue teams reach the most vulnerable areas with minimal delay. The system features a multi-tiered interface for administrative oversight, field reporting, and public transparency, ultimately transforming chaotic data into actionable intelligence to save lives and optimize post-flood rehabilitation.

Description:

Flood Aid 360 is an integrated digital ecosystem engineered to revolutionize the landscape of disaster response and humanitarian relief during flooding crises. At its core, the platform serves as a centralized intelligence hub that bridges the critical communication gap between flood victims, rescue teams, government agencies, and global donors. By adopting a "360-degree" approach, the system manages the entire disaster lifecycle from the initial issuance of early warnings and the coordination of high-stakes rescue missions to the long-term logistics of post-flood rehabilitation. Through the use of real-time geospatial mapping and dynamic data visualization, the platform transforms chaotic field reports into an actionable operational picture, ensuring that aid is directed to the most isolated and vulnerable populations who are often overlooked by traditional relief methods.

The platform's strength lies in its ability to synchronize complex logistical operations through a suite of specialized modules. It features a smart resource allocation engine that tracks the movement of essential supplies like food, medicine, and clean water, effectively preventing the common issues of resource hoarding and logistical bottlenecks. Simultaneously, it provides a secure and verified SOS channel for victims to signal for help, utilizing location-based services to prioritize rescue efforts based on the severity of the situation. By digitizing the humanitarian supply chain and offering a transparent portal for financial tracking, Flood Aid 360 not only accelerates the speed of emergency response but also fosters deep institutional trust and accountability. Ultimately, the project aims to replace fragmented manual processes with a unified, scalable infrastructure that maximizes the impact of every helping hand and saves more lives in the face of climate uncertainty.

FLOOD AID 360

Step 1: Requirement Analysis

1. Core Requirements

These are the essential features that the system must support to operate effectively during flood relief operations.

• Store Flood-Affected Area Details

The system must maintain complete information about flood-affected areas, including:

- Area name and geographic location
- Flood severity level (low, medium, high, critical)
- Date and time of flood occurrence
- Current status of the area (active, under control, recovered)

This information helps authorities and relief teams identify the most critical locations and plan relief activities accordingly.

• Register Victims with Personal and Medical Information

The system should allow registration of flood victims by storing:

- Personal details (name, age, gender, contact information)
- Family details and number of dependents
- Medical conditions (injuries, disabilities, chronic illnesses)
- Priority level based on vulnerability (children, elderly, pregnant women, disabled persons)

This ensures that aid is distributed fairly and medical assistance reaches those who need it most.

• Track Relief Resources and Their Distribution

The system must track all relief resources such as:

- Food supplies
- Clean drinking water
- Medicines and medical kits
- Clothing and shelter materials

It should also record:

- Quantity available
- Distribution history
- Which victims or areas received the resources
- Remaining stock levels

This prevents resource wastage, duplication, and shortages.

• Manage Volunteers and Donor Records

The system should store and manage:

- Volunteer details (name, contact, skills, availability)
- Assigned tasks and deployment areas
- Donor information (individuals, NGOs, organizations)
- Type of donations (cash, goods, services)

This ensures proper coordination between volunteers and transparent management of donations.

• Enable Search by Location, Priority Level, and Resource Type

The system should support efficient search functionality, allowing users to:

- Find victims based on location or severity of need
- Identify high-priority cases quickly
- Search available resources by type and quantity

This feature helps decision-makers respond quickly in emergency situations.

2. Stakeholders

Stakeholders are individuals or groups who interact with or benefit from the system.

1. Victims

- Register themselves or be registered by relief workers
- Request help and report urgent needs
- Receive relief resources and medical assistance

2. Relief Workers / Volunteers

- Access victim and area information
- Deliver aid and provide on-ground assistance
- Update distribution status and field reports

3. Donors / NGOs

- Provide financial support, goods, or services
- Track how and where their donations are used
- Ensure transparency and trust in relief operations

4. Government Officials / Administrators

- Monitor overall relief operations
- Approve and supervise resource distribution
- Generate reports for planning and accountability
- Ensure compliance with policies and regulations

3. Functional Requirements

Functional requirements describe **what the system must do**.

• Register Flood-Affected Areas and Victims

The system should allow authorized users to add, update, and delete records of affected areas and victims.

• Track Available Resources and Their Distribution

The system must maintain real-time records of resources, their availability, and distribution status.

• Manage Volunteer Assignments

Administrators should be able to assign volunteers to specific areas or tasks based on skills and availability.

• Record Donations and Donor Details

The system must store complete donation records, including donor information, donation type, and usage details.

• Search Victims by Priority, Location, or Medical Needs

Users should be able to quickly locate victims requiring urgent assistance using filters and search criteria.

• Send Alerts or Updates to Stakeholders

The system should notify stakeholders through alerts or messages about:

- Emergency updates
- Resource shortages
- Distribution schedules
- Important announcements

Step 2: Conceptual Design – ERD

Entities & Attributes

- **Area**(AreaID, District, Village, SeverityLevel, GPSCoordinates)
- **Victim**(VictimID, Name, Age, FamilySize, MedicalNeeds, ShelterStatus, PriorityLevel, AreaID)

- **Resource**(ResourceID, Type, Quantity, ExpiryDate, Source)
- **Distribution**(DistributionID, VictimID, ResourceID, Date, Quantity)
- **Volunteer**(VolunteerID, Name, Skill, Location, Availability)
- **Donor**(DonorID, Name, Contact, DonationType)
- **Donation**(DonationID, DonorID, ResourceID, Amount, Date)

Relationships in Flood Relief Management System

Relationships describe how different entities in the system are connected to each other. These relationships help in designing the **database structure** and ensure **data integrity and consistency**.

• Area 1 : N Victim

One **flood-affected area** can have **many victims**, but each victim is associated with **only one area**.
This relationship helps in:

- Identifying how many victims are affected in a specific area
- Allocating resources based on area severity and population

• Victim 1 : N Distribution

One **victim** can have **multiple distribution records**, representing different relief items received over time.
Each distribution record, however, belongs to **only one victim**.
This allows tracking of:

- What type of aid a victim received
- When and how often aid was provided

• Resource 1 : N Distribution

One **resource type** (e.g., food, medicine, water) can be distributed **multiple times** to different victims.
Each distribution record refers to **only one resource**.
This ensures proper tracking of:

- Resource usage
- Remaining stock levels

• Donor 1 : N Donation

A **donor** (individual, NGO, or organization) can make **multiple donations**.
Each donation record is linked to **one specific donor**.
This relationship supports:

- Donation history tracking
- Transparency and accountability

• Resource 1 : N Donation

One **resource** can be associated with **multiple donations** received at different times or from different donors.
Each donation contributes to **one resource type**.
This helps in:

- Tracking how resources are funded or supplied
- Mapping donations to available relief items

Business Rules for Flood Relief Management System

Business rules define the **constraints, relationships, and policies** that govern how the system operates. These rules ensure **data consistency, fairness, transparency, and controlled access** during flood relief operations.

1. Victim & Area Rules

• A Victim Must Belong to One Flood-Affected Area

Each registered victim is associated with **exactly one flood-affected area**.
This ensures:

- Clear identification of the victim's location
- Proper planning of relief activities
- Avoidance of duplicate registrations across multiple areas

• An Area Can Have Many Victims

A single flood-affected area can include **multiple victims**.
This represents a **one-to-many relationship**, allowing authorities to:

- Analyze the impact level of a specific area
- Allocate resources based on population size and severity

• Each Victim Has a Priority Level Based on Vulnerability

Every victim is assigned a **priority level** determined by vulnerability factors such as:

- Elderly persons
- Children
- Disabled individuals
- Pregnant women or critically ill patients

This rule ensures that **high-risk individuals receive assistance first**, especially during resource shortages.

2. Resource & Distribution Rules

• A Resource Can Be Distributed to Many Victims

One type of resource (e.g., food, water, medicine) can be distributed to **multiple victims**, depending on availability and need.

• A Victim Can Receive Multiple Resources

A single victim may receive **more than one type of resource**, such as:

- Food packages
- Medical supplies
- Shelter items

This supports comprehensive aid delivery.

• Each Distribution Record Must Link a Specific Resource to a Specific Victim

Every distribution entry must clearly identify:

- Which resource was given
- To which victim
- Date and quantity of distribution

This creates a **many-to-many relationship** between victims and resources, resolved through a **distribution record** to maintain traceability.

• Resources Must Be Tracked for Expiry Dates and Source Attribution

Each resource must include:

- Expiry date (especially for food and medicine)
- Source information (donor, NGO, government supply)

This rule helps:

- Prevent distribution of expired items
- Maintain transparency about where resources come from

3. Donor & Donation Rules

• A Donor Can Make Multiple Donations

A single donor (individual, NGO, or organization) may contribute **multiple donations** over time.

• A Donation Must Be Linked to a Specific Resource

Each donation must be associated with a **specific resource type**, such as:

- Food items
- Medical kits
- Cash (converted into resources)

This ensures accurate tracking of donation usage.

• Donations Must Record Amount, Type, and Date

For accountability and auditing purposes, each donation must store:

- Donation amount or quantity
- Type of donation (cash, goods, services)
- Date of donation

This rule supports transparency and reporting.

4. Volunteer Coordination Rules

• A Volunteer Can Be Assigned to Multiple Areas or Tasks

Volunteers may work in:

- Different flood-affected areas
- Multiple tasks such as distribution, medical aid, or rescue

This allows flexible deployment of human resources.

• Volunteers Must Be Matched Based on Skills and Location Proximity

Volunteer assignments should consider:

- Skill set (medical aid, logistics, rescue)
- Distance from affected areas

This improves efficiency and response time during emergencies.

• Availability Status Must Be Updated Regularly

Each volunteer must have an updated availability status such as:

- Available
- Assigned
- Unavailable

This prevents over-allocation and ensures realistic planning.

5. Admin Oversight Rules

• Only Admins Can Approve or Reject Resource Distributions

Final approval authority lies with **system administrators** to:

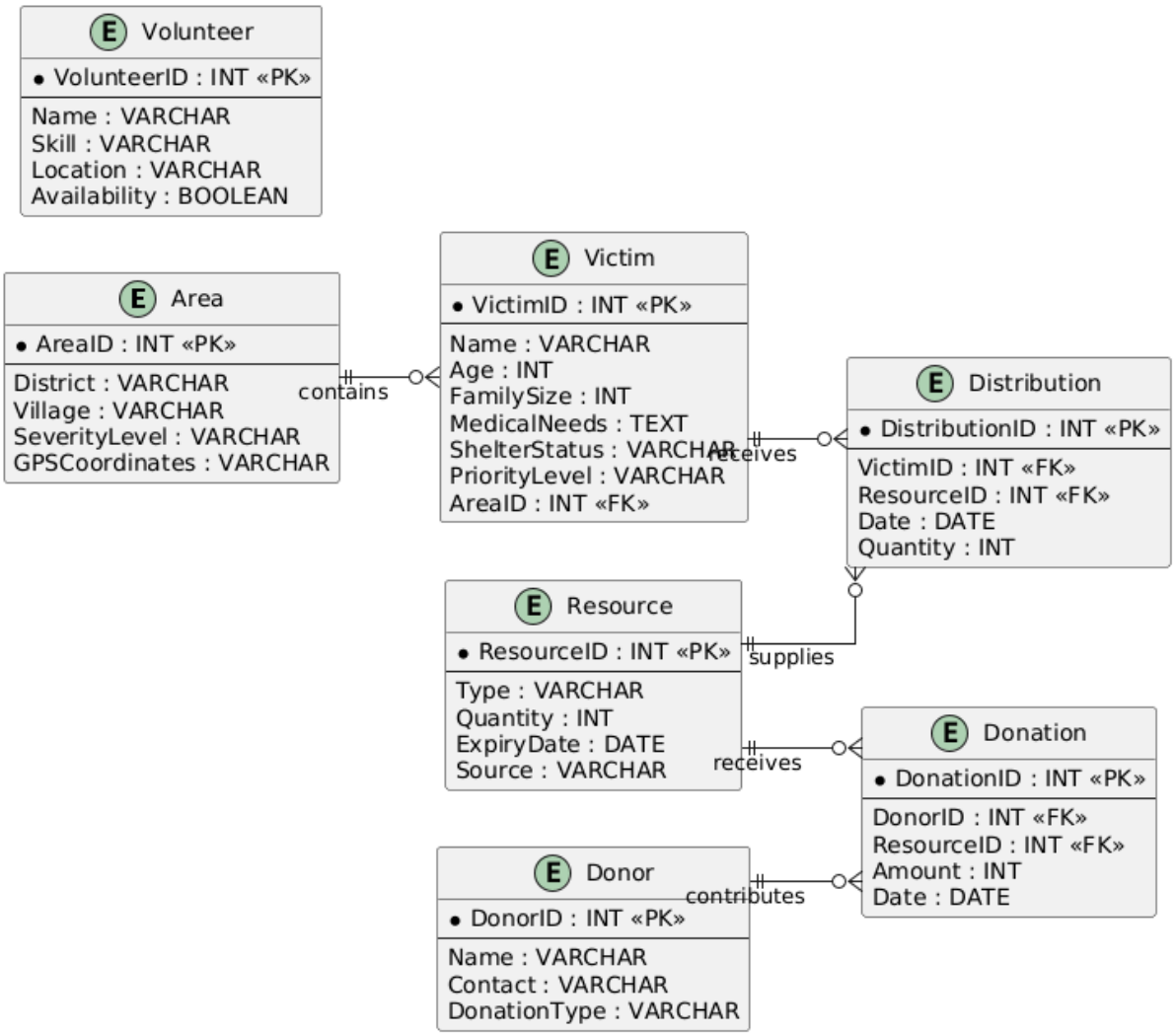
- Prevent misuse or duplication of resources
- Ensure fair and authorized distribution

• Admins Can View Real-Time Dashboards and Query System Logs

Admins must have access to:

- Live dashboards showing relief operations
- System logs for tracking actions and decisions

This supports **monitoring, auditing, and decision-making** at a higher level.



Step 3: Logical Design – Relational Schema (MySQL/PostgreSQL Style)

1. Area Table

```
CREATE TABLE Area (
  AreaID INT PRIMARY KEY AUTO_INCREMENT,
  District VARCHAR(100),
  Village VARCHAR(100),
  SeverityLevel VARCHAR(20),
  GPSCoordinates VARCHAR(50)
);
```

2. Victim Table

```
CREATE TABLE Victim (
  VictimID INT PRIMARY KEY AUTO_INCREMENT,
  Name VARCHAR(100),
  Age INT,
  FamilySize INT,
  MedicalNeeds TEXT,
  ShelterStatus VARCHAR(50),
  PriorityLevel VARCHAR(20),
  AreaID INT,
  FOREIGN KEY (AreaID) REFERENCES Area(AreaID) ON DELETE CASCADE
);
```

3. Resource Table

```
CREATE TABLE Resource (
  ResourceID INT PRIMARY KEY AUTO_INCREMENT,
  Type VARCHAR(100),
  Quantity INT,
  ExpiryDate DATE,
  Source VARCHAR(100)
);
```

4. Distribution Table

```
CREATE TABLE Distribution (
  DistributionID INT PRIMARY KEY AUTO_INCREMENT,
  VictimID INT,
  ResourceID INT,
  Date DATE,
  Quantity INT,
  FOREIGN KEY (VictimID) REFERENCES Victim(VictimID) ON DELETE CASCADE,
  FOREIGN KEY (ResourceID) REFERENCES Resource(ResourceID) ON DELETE CASCADE
);
```

5. Volunteer Table

```
CREATE TABLE Volunteer (
  VolunteerID INT PRIMARY KEY AUTO_INCREMENT,
  Name VARCHAR(100),
  Skill VARCHAR(100),
  Location VARCHAR(100),
  Availability BOOLEAN
);
```

6. Donor Table

```
CREATE TABLE Donor (
  DonorID INT PRIMARY KEY AUTO_INCREMENT,
  Name VARCHAR(100),
  Contact VARCHAR(100),
  DonationType VARCHAR(50)
);
```

7. Donation Table

```
CREATE TABLE Donation (
  DonationID INT PRIMARY KEY AUTO_INCREMENT,
  DonorID INT,
  ResourceID INT,
  Amount INT,
  Date DATE,
  FOREIGN KEY (DonorID) REFERENCES Donor(DonorID) ON DELETE CASCADE,
  FOREIGN KEY (ResourceID) REFERENCES Resource(ResourceID) ON DELETE CASCADE
);
```

Final Relational Schema Summary

Table Name	Attributes
Area	AreaID, District, Village, SeverityLevel, GPSCoordinates
Victim	VictimID, Name, Age, FamilySize, MedicalNeeds, ShelterStatus, PriorityLevel, AreaID FK
Resource	ResourceID, Type, Quantity, ExpiryDate, Source
Distribution	DistributionID, VictimID FK, ResourceID FK, Date, Quantity
Volunteer	VolunteerID, Name, Skill, Location, Availability
Donor	DonorID, Name, Contact, DonationType
Donation	DonationID, DonorID FK, ResourceID FK, Amount, Date

Code:

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql
CREATE DATABASE FloodAid360;
USE FloodAid360;
CREATE TABLE Area (
  AreaID INT PRIMARY KEY AUTO_INCREMENT,
  District VARCHAR(100),
  Village VARCHAR(100),
  SeverityLevel VARCHAR(20),
  GPSCoordinates VARCHAR(50)
);
CREATE TABLE Victim (
  VictimID INT PRIMARY KEY AUTO_INCREMENT,
  Name VARCHAR(100),
  Age INT,
  FamilySize INT,
  MedicalNeeds TEXT,
  ShelterStatus VARCHAR(50),
  PriorityLevel VARCHAR(20),
  AreaID INT,
  FOREIGN KEY (AreaID) REFERENCES Area(AreaID)
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql
  FOREIGN KEY (AreaID) REFERENCES Area(AreaID)
);
CREATE TABLE Resource (
  ResourceID INT PRIMARY KEY AUTO_INCREMENT,
  Type VARCHAR(100),
  Quantity INT,
  ExpiryDate DATE,
  Source VARCHAR(100)
);
CREATE TABLE Distribution (
  DistributionID INT PRIMARY KEY AUTO_INCREMENT,
  VictimID INT,
  ResourceID INT,
  Date DATE,
  Quantity INT,
  FOREIGN KEY (VictimID) REFERENCES Victim(VictimID),
  FOREIGN KEY (ResourceID) REFERENCES Resource(ResourceID)
);
CREATE TABLE Volunteer (
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
    FOREIGN KEY (VictimID) REFERENCES Victim(VictimID),
    FOREIGN KEY (ResourceID) REFERENCES Resource(ResourceID)
);
CREATE TABLE Volunteer (
    VolunteerID INT PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(100),
    Skill VARCHAR(100),
    Location VARCHAR(100),
    Availability BOOLEAN
);
CREATE TABLE Donor (
    DonorID INT PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(100),
    Contact VARCHAR(100),
    DonationType VARCHAR(50)
);
CREATE TABLE Donation (
    DonationID INT PRIMARY KEY AUTO_INCREMENT,
    DonorID INT,
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
    DonorID INT,
    ResourceID INT,
    Amount INT,
    Date DATE,
    FOREIGN KEY (DonorID) REFERENCES Donor(DonorID),
    FOREIGN KEY (ResourceID) REFERENCES Resource(ResourceID)
);
DELIMITER //
CREATE TRIGGER UpdateStockAfterDistribution
AFTER INSERT ON Distribution
FOR EACH ROW
BEGIN
    UPDATE Resource
    SET Quantity = Quantity - NEW.Quantity
    WHERE ResourceID = NEW.ResourceID;
END;
//
DELIMITER ;
CREATE VIEW HighPriorityRescueBoard AS
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql
CREATE VIEW HighPriorityRescueBoard AS
SELECT
    V.Name AS Victim_Name,
    A.District,
    A.SeverityLevel AS Area_Severity,
    V.MedicalNeeds,
    V.PriorityLevel AS Victim_Priority
FROM Victim V
JOIN Area A ON V.AreaID = A.AreaID
WHERE V.PriorityLevel = 'High' OR A.SeverityLevel = 'High';
SHOW TABLES;
INSERT INTO Area (District, Village, SeverityLevel, GPSCoordinates) VALUES
('Swat', 'Kalam', 'High', '35.4902,72.5796'),
('Charsadda', 'Tangi', 'Medium', '34.1490,71.7420'),
('Nowshera', 'Pabbi', 'High', '34.0113,71.7960'),
('Dera Ismail Khan', 'Kulachi', 'Low', '31.8315,70.4590'),
('Chitral', 'Booni', 'Medium', '36.3210,72.8780'),
('Mansehra', 'Balakot', 'High', '34.5471,73.3510'),
('Muzaffargarh', 'Kot Addu', 'High', '30.4697,70.9670'),
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql
('Muzaffargarh', 'Kot Addu', 'High', '30.4697,70.9670'),
('Thatta', 'Makli', 'Medium', '24.7470,67.9230'),
('Badin', 'Talhar', 'High', '24.8845,68.8140'),
('Rajpur', 'Jampur', 'Low', '29.6424,70.5950');
INSERT INTO Victim (Name, Age, FamilySize, MedicalNeeds, ShelterStatus, PriorityLevel, AreaID) VALUES
('Ayesha Khan', 35, 5, 'Diabetic', 'Camp', 'High', 1),
('Ahmed Ali', 60, 4, 'Blood Pressure', 'Camp', 'High', 2),
('Fatima Noor', 28, 3, 'Pregnant', 'Shelter Home', 'High', 3),
('Bilal Hussain', 45, 6, 'Asthma', 'Camp', 'Medium', 4),
('Sana Malik', 19, 2, 'None', 'Relative Home', 'Low', 5),
('Zain Abbas', 7, 5, 'Child Nutrition', 'Camp', 'High', 6),
('Hina Raza', 50, 4, 'Heart Patient', 'Camp', 'High', 7),
('Usman Tariq', 33, 3, 'Injury', 'Shelter Home', 'Medium', 8),
('Nida Farooq', 41, 6, 'Diabetic', 'Camp', 'High', 9),
('Imran Khan', 27, 2, 'None', 'Relative Home', 'Low', 10);
INSERT INTO Resource (Type, Quantity, ExpiryDate, Source) VALUES
('Food Pack', 500, '2026-01-01', 'NGO'),
('Clean Water Bottles', 1000, '2025-12-01', 'Government'),
('Medical Kit', 200, '2026-03-15', 'NGO'),
('Blankets', 300, NULL, 'Donation'),
('Baby Food', 150, '2025-10-10', 'UNICEF'),
('Tents', 100, NULL, 'Government'),
('Clothes', 400, NULL, 'Public'),
('Sanitation Kits', 250, '2025-11-20', 'WHO'),
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
109     ('Tents', 100, NULL, 'Government'),
110     ('Clothes', 400, NULL, 'Public'),
111     ('Sanitation Kits', 250, '2025-11-20', 'WHO'),
112     ('Mosquito Nets', 350, NULL, 'NGO'),
113     ('Cooking Utensils', 180, NULL, 'Donation');
114 •   INSERT INTO Volunteer (Name, Skill, Location, Availability) VALUES
115     ('Ali Ahmed', 'Medical Aid', 'Swat', TRUE),
116     ('Sara Khan', 'Food Distribution', 'Charsadda', TRUE),
117     ('Usman Riaz', 'Rescue', 'Nowshera', FALSE),
118     ('Hassan Ali', 'Logistics', 'DI Khan', TRUE),
119     ('Areeba Noor', 'Child Care', 'Chitral', TRUE),
120     ('Bilal Shah', 'Medical Aid', 'Mansehra', FALSE),
121     ('Zoya Malik', 'Shelter Management', 'Muzaffargarh', TRUE),
122     ('Fahad Iqbal', 'Transport', 'Thatta', TRUE),
123     ('Noor Fatima', 'Health Support', 'Badin', TRUE),
124     ('Kamran Akbar', 'Supply Handling', 'Rajpur', FALSE);
125 •   INSERT INTO Donor (Name, Contact, DonationType) VALUES
126     ('Edhi Foundation', '042-111-111', 'Food'),
127     ('Saylani Welfare', '021-111-222', 'Medical'),
128     ('Al-Khidmat', '051-111-333', 'Shelter'),
129     ('Red Crescent', '051-222-444', 'Relief Goods'),
130     ('UNICEF', '021-333-555', 'Child Care'),
131     ('WHO', '021-444-666', 'Medical'),
132     ('Private Donor A', '0300-1234567', 'Cash'),
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
133     ('Private Donor B', '0301-7654321', 'Food'),
134     ('NGO Care', '042-555-777', 'Sanitation'),
135     ('Local Community', '0302-9998888', 'Clothes');
136 •   INSERT INTO Distribution (VictimID, ResourceID, Date, Quantity) VALUES
137     (1, 1, CURDATE(), 2),
138     (2, 2, CURDATE(), 5),
139     (3, 3, CURDATE(), 1),
140     (4, 4, CURDATE(), 3),
141     (5, 5, CURDATE(), 1),
142     (6, 6, CURDATE(), 1),
143     (7, 7, CURDATE(), 4),
144     (8, 8, CURDATE(), 2),
145     (9, 9, CURDATE(), 3),
146     (10, 10, CURDATE(), 1);
147 •   INSERT INTO Donation (DonorID, ResourceID, Amount, Date) VALUES
148     (1, 1, 200, CURDATE()),
149     (2, 3, 150, CURDATE()),
150     (3, 6, 50, CURDATE()),
151     (4, 2, 300, CURDATE()),
152     (5, 5, 100, CURDATE()),
153     (6, 3, 180, CURDATE()),
154     (7, 1, 250, CURDATE()),
155     (8, 4, 120, CURDATE()),
156     (9, 8, 160, CURDATE()),
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
157     (10, 7, 90, CURDATE());
158 •   SELECT * FROM HighPriorityRescueBoard;
159 •   SELECT
160         D.Name AS Donor_Name,
161         SUM(Don.Amount) AS Total_Items_Donated,
162         ROUND((SUM(Don.Amount) / (SELECT SUM(Amount) FROM Donation) * 100), 2) AS Share_Percentage
163     FROM Donor D
164     JOIN Donation Don ON D.DonorID = Don.DonorID
165     GROUP BY D.Name
166     ORDER BY Share_Percentage DESC;
167 •   SELECT * FROM Area;
168 •   SELECT * FROM Victim;
169 •   SELECT * FROM Resource;
170 •   SELECT * FROM Volunteer;
171 •   SELECT * FROM Donor;
172 •   SELECT * FROM Distribution;
173 •   SELECT * FROM Donation;
174 •   SELECT ResourceID, Type, Quantity, ExpiryDate, Source
175     FROM Resource;
176 •   SELECT Type, ExpiryDate
177     FROM Resource
178     WHERE ExpiryDate IS NOT NULL;
179 •   SELECT
180         Victim.Name AS Victim_Name,
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
181         Resource.Type AS Resource_Type,
182         Distribution.Quantity,
183         Distribution.Date
184     FROM Distribution
185     JOIN Victim ON Distribution.VictimID = Victim.VictimID
186     JOIN Resource ON Distribution.ResourceID = Resource.ResourceID;
187 •   SELECT Name, Skill, Location
188     FROM Volunteer
189     WHERE Availability = TRUE;
190 •   SELECT Name
191     FROM Volunteer
192     WHERE Skill = 'Medical Aid'
193     AND Location = 'Swat'
194     AND Availability = TRUE;
195 •   SELECT
196         Donor.Name AS Donor_Name,
197         Resource.Type AS Resource_Type,
198         Donation.Amount,
199         Donation.Date
200     FROM Donation
201     JOIN Donor ON Donation.DonorID = Donor.DonorID
202     JOIN Resource ON Donation.ResourceID = Resource.ResourceID;
203 •   SELECT Name, PriorityLevel
204     FROM Victim
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
205     WHERE PriorityLevel = 'High';
206 •   SELECT Victim.Name, Area.District
207     FROM Victim
208     JOIN Area ON Victim.AreaID = Area.AreaID
209     WHERE Area.District = 'Swat';
210 •   SELECT Name, MedicalNeeds
211     FROM Victim
212     WHERE MedicalNeeds LIKE '%Diabetic%';
213 •   SELECT Name, MedicalNeeds, ShelterStatus
214     FROM Victim
215     WHERE PriorityLevel = 'High';
216 •   SELECT Type, Quantity
217     FROM Resource
218     WHERE Quantity < 200;
219 •   SELECT Name, Skill
220     FROM Volunteer
221     WHERE Availability = TRUE;
222
223
224     -- ------------------------------
225     -- AREA CRUD
226     -- ------------------------------
227     -- CREATE (Insert new area)
228 •   INSERT INTO Area (District, Village, SeverityLevel, GPSCoordinates)
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
229     VALUES ('New District', 'New Village', 'Medium', '0.0000,0.0000');
230
231     -- READ (View all areas)
232 •   SELECT * FROM Area;
233
234     -- UPDATE (Change severity level of an area)
235 •   UPDATE Area
236     SET SeverityLevel = 'Low'
237     WHERE AreaID = 1;
238
239     -- DELETE (Remove an area)
240 •   DELETE FROM Area
241     WHERE AreaID = 11;
242
243     -- ------------------------------
244     -- VICTIM CRUD
245     -- ------------------------------
246     -- CREATE (Add new victim)
247 •   INSERT INTO Victim (Name, Age, FamilySize, MedicalNeeds, ShelterStatus, PriorityLevel, AreaID)
248     VALUES ('Rabia Shaikh', 40, 6, 'Pregnant', 'Camp', 'High', 1);
249
250     -- READ (View all victims)
251 •   SELECT * FROM Victim;
252
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql
-- READ with JOIN to show victim's area
SELECT Victim.Name, Victim.PriorityLevel, Area.District, Area.Village
FROM Victim
JOIN Area ON Victim.AreaID = Area.AreaID;

-- UPDATE (Change victim shelter)
UPDATE Victim
SET ShelterStatus = 'Hospital'
WHERE VictimID = 1;

-- DELETE (Remove victim)
DELETE FROM Victim
WHERE VictimID = 11;

-- ------------------------------
-- RESOURCE CRUD
-- ------------------------------
-- CREATE (Add new resource)
INSERT INTO Resource (Type, Quantity, ExpiryDate, Source)
VALUES ('Sanitation Kits', 100, '2026-05-01', 'NGO');

-- READ (View all resources)
SELECT * FROM Resource;
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql
-- UPDATE (Update resource quantity)
UPDATE Resource
SET Quantity = Quantity + 50
WHERE ResourceID = 1;

-- DELETE (Remove resource)
DELETE FROM Resource
WHERE ResourceID = 11;

-- ------------------------------
-- DISTRIBUTION CRUD
-- ------------------------------
-- CREATE (Distribute resource to a victim)
INSERT INTO Distribution (VictimID, ResourceID, Date, Quantity)
VALUES (1, 1, CURDATE(), 2);

-- READ (View distributions with victim & resource)
SELECT Victim.Name AS Victim, Resource.Type AS Resource, Distribution.Quantity, Distribution.Date
FROM Distribution
JOIN Victim ON Distribution.VictimID = Victim.VictimID
JOIN Resource ON Distribution.ResourceID = Resource.ResourceID;

-- UPDATE (Update distribution quantity)
UPDATE Distribution
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
301     SET Quantity = 5
302     WHERE DistributionID = 1;
303
304     -- DELETE (Remove a distribution record)
305 •   DELETE FROM Distribution
306     WHERE DistributionID = 11;
307
308     -- ------------------------------
309     -- VOLUNTEER CRUD
310     -- ------------------------------
311     -- CREATE (Add volunteer)
312 •   INSERT INTO Volunteer (Name, Skill, Location, Availability)
313     VALUES ('Adeel Khan', 'Medical Aid', 'Swat', TRUE);
314
315     -- READ (View available volunteers)
316 •   SELECT Name, Skill, Location
317     FROM Volunteer
318     WHERE Availability = TRUE;
319
320     -- UPDATE (Update volunteer availability)
321 •   UPDATE Volunteer
322     SET Availability = FALSE
323     WHERE VolunteerID = 1;
324
```

Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```
325     -- DELETE (Remove volunteer)
326 •   DELETE FROM Volunteer
327     WHERE VolunteerID = 11;
328
329     -- ------------------------------
330     -- DONOR CRUD
331     -- ------------------------------
332     -- CREATE (Add donor)
333 •   INSERT INTO Donor (Name, Contact, DonationType)
334     VALUES ('Global Fund', '0300-1112222', 'Medical');
335
336     -- READ (View all donors)
337 •   SELECT * FROM Donor;
338
339     -- UPDATE (Update donor contact)
340 •   UPDATE Donor
341     SET Contact = '0300-9998888'
342     WHERE DonorID = 1;
343
344     -- DELETE (Remove donor)
345 •   DELETE FROM Donor
346     WHERE DonorID = 11;
347
348     -- ------------------------------
```

Flood Aid 360 dbms project | SQL File 3*

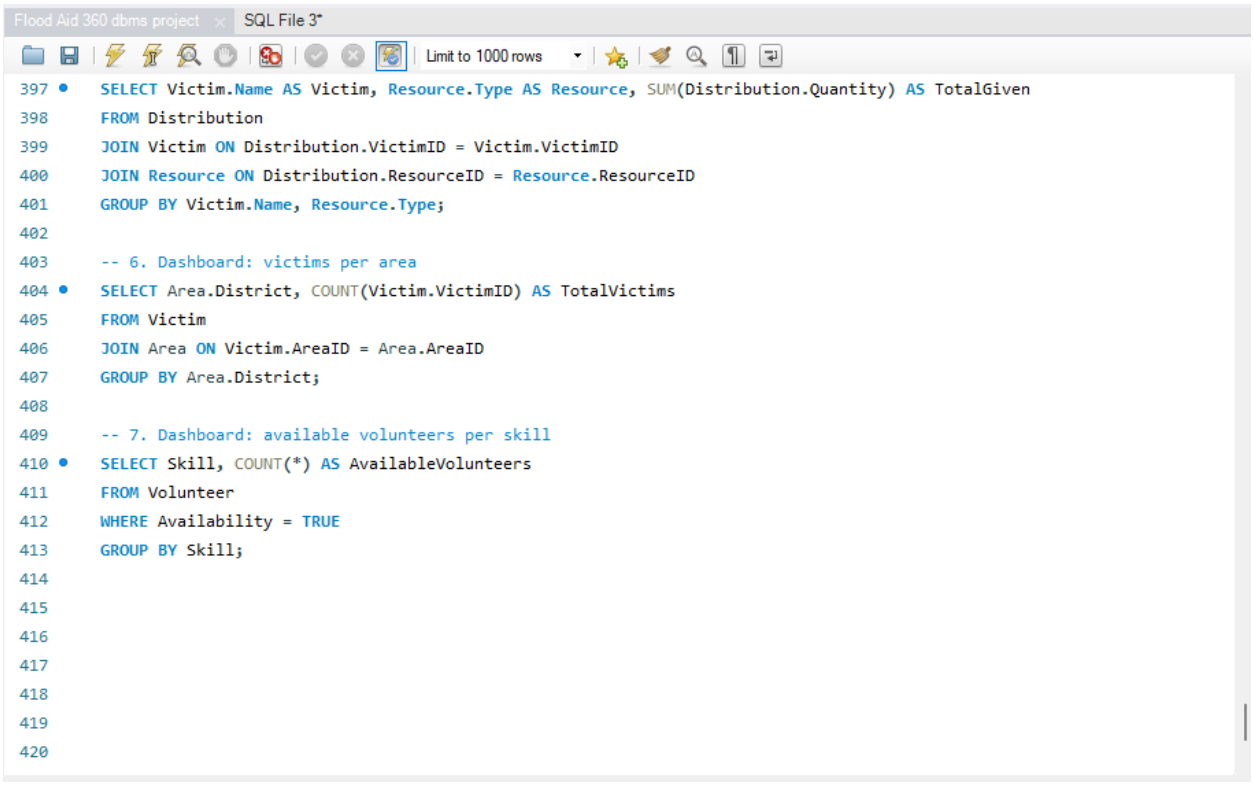
Limit to 1000 rows

```sql
-- DONATION CRUD
-- ------------------------------
-- CREATE (Record donation)
INSERT INTO Donation (DonorID, ResourceID, Amount, Date)
VALUES (1, 1, 300, CURDATE());

-- READ (View donations with donor & resource details)
SELECT Donor.Name AS Donor, Resource.Type AS Resource, Donation.Amount, Donation.Date
FROM Donation
JOIN Donor ON Donation.DonorID = Donor.DonorID
JOIN Resource ON Donation.ResourceID = Resource.ResourceID;

-- UPDATE (Update donation amount)
UPDATE Donation
SET Amount = 500
WHERE DonationID = 1;

-- DELETE (Remove donation)
DELETE FROM Donation
WHERE DonationID = 11;

-- ========================================
-- BUSINESS RULE QUERIES
-- ========================================
```

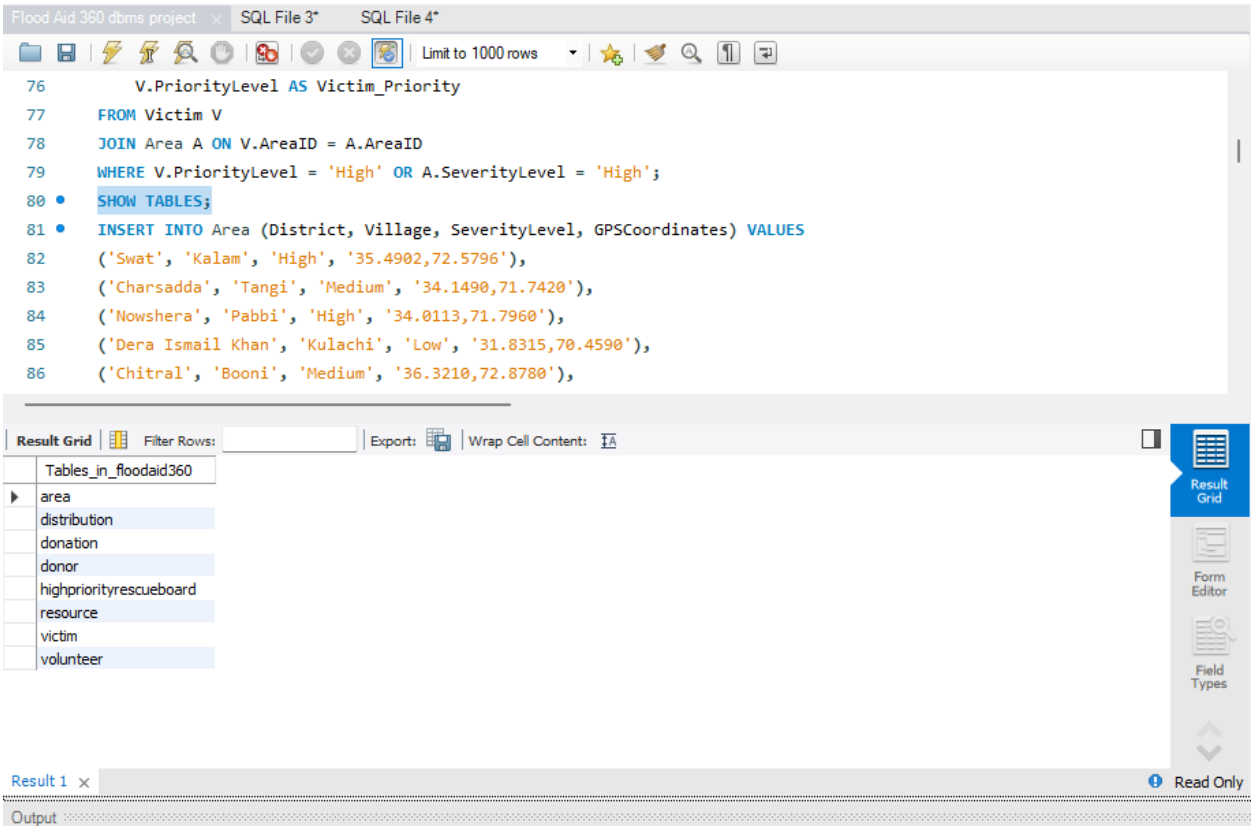
Flood Aid 360 dbms project | SQL File 3*

Limit to 1000 rows

```sql

-- 1. High-priority victims
SELECT Name, PriorityLevel
FROM Victim
WHERE PriorityLevel = 'High';

-- 2. Resources about to expire
SELECT Type, ExpiryDate
FROM Resource
WHERE ExpiryDate IS NOT NULL
ORDER BY ExpiryDate ASC;

-- 3. Volunteers by skill and location
SELECT Name, Skill
FROM Volunteer
WHERE Skill = 'Medical Aid' AND Location = 'Swat' AND Availability = TRUE;

-- 4. Donations summary by donor
SELECT Donor.Name, SUM(Donation.Amount) AS TotalAmount
FROM Donation
JOIN Donor ON Donation.DonorID = Donor.DonorID
GROUP BY Donor.Name;

-- 5. Resources distributed per victim
```


Flood Aid 360 dbms project
SQL File 3*
Limit to 1000 rows
SELECT Victim.Name AS Victim, Resource.Type AS Resource, SUM(Distribution.Quantity) AS TotalGiven
FROM Distribution
JOIN Victim ON Distribution.VictimID = Victim.VictimID
JOIN Resource ON Distribution.ResourceID = Resource.ResourceID
GROUP BY Victim.Name, Resource.Type;
-- 6. Dashboard: victims per area
SELECT Area.District, COUNT(Victim.VictimID) AS TotalVictims
FROM Victim
JOIN Area ON Victim.AreaID = Area.AreaID
GROUP BY Area.District;
-- 7. Dashboard: available volunteers per skill
SELECT Skill, COUNT(*) AS AvailableVolunteers
FROM Volunteer
WHERE Availability = TRUE
GROUP BY Skill;

Output:



```
Flood Aid 360 dbms project | SQL File 3* | SQL File 4*
Limit to 1000 rows

76      V.PriorityLevel AS Victim_Priority
77  FROM Victim V
78  JOIN Area A ON V.AreaID = A.AreaID
79  WHERE V.PriorityLevel = 'High' OR A.SeverityLevel = 'High';
80  SHOW TABLES;
81  INSERT INTO Area (District, Village, SeverityLevel, GPSCoordinates) VALUES
82  ('Swat', 'Kalam', 'High', '35.4902,72.5796'),
83  ('Charsadda', 'Tangi', 'Medium', '34.1490,71.7420'),
84  ('Nowshera', 'Pabbi', 'High', '34.0113,71.7960'),
85  ('Dera Ismail Khan', 'Kulachi', 'Low', '31.8315,70.4590'),
86  ('Chitral', 'Booni', 'Medium', '36.3210,72.8780'),
```

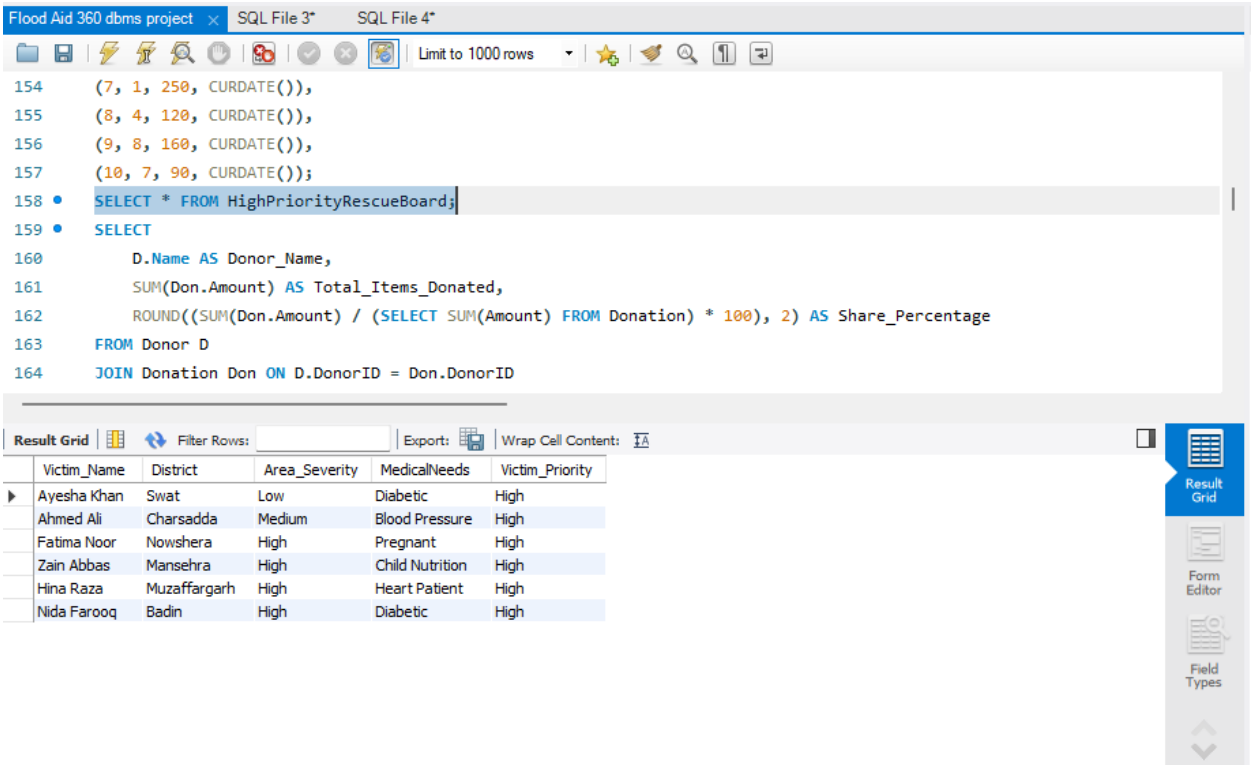
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Tables_in_floodaid360
area
distribution
donation
donor
highpriorityrescueboard
resource
victim
volunteer

Result Grid | Form Editor | Field Types

Result 1 | Read Only

Output



```
Flood Aid 360 dbms project | SQL File 3* | SQL File 4*
Limit to 1000 rows

154 (7, 1, 250, CURDATE()),
155 (8, 4, 120, CURDATE()),
156 (9, 8, 160, CURDATE()),
157 (10, 7, 90, CURDATE());
158 SELECT * FROM HighPriorityRescueBoard;
159 SELECT
160     D.Name AS Donor_Name,
161     SUM(Don.Amount) AS Total_Items_Donated,
162     ROUND((SUM(Don.Amount) / (SELECT SUM(Amount) FROM Donation) * 100), 2) AS Share_Percentage
163 FROM Donor D
164 JOIN Donation Don ON D.DonorID = Don.DonorID
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Victim_Name	District	Area_Severity	MedicalNeeds	Victim_Priority
Ayesha Khan	Swat	Low	Diabetic	High
Ahmed Ali	Charsadda	Medium	Blood Pressure	High
Fatima Noor	Nowshera	High	Pregnant	High
Zain Abbas	Mansehra	High	Child Nutrition	High
Hina Raza	Muzaffargarh	High	Heart Patient	High
Nida Farooq	Badin	High	Diabetic	High

Result Grid | Form Editor | Field Types

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
157     (10, 7, 90, CURDATE());
158 •   SELECT * FROM HighPriorityRescueBoard;
159 •   SELECT
160         D.Name AS Donor_Name,
161         SUM(Don.Amount) AS Total_Items_Donated,
162         ROUND((SUM(Don.Amount) / (SELECT SUM(Amount) FROM Donation) * 100), 2) AS Share_Percentage
163     FROM Donor D
164     JOIN Donation Don ON D.DonorID = Don.DonorID
165     GROUP BY D.Name
166     ORDER BY Share_Percentage DESC;
167 •   SELECT * FROM Area;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Donor_Name	Total_Items_Donated	Share_Percentage
Edhi Foundation	500	26.32
Red Crescent	300	15.79
Private Donor A	250	13.16
WHO	180	9.47
NGO Care	160	8.42
Saylani Welfare	150	7.89
Private Donor B	120	6.32
UNICEF	100	5.26
Local Community	90	4.74
Al-Khidmat	50	2.63

Result Grid | Form Editor | Field Types

Result 3 | Read Only

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

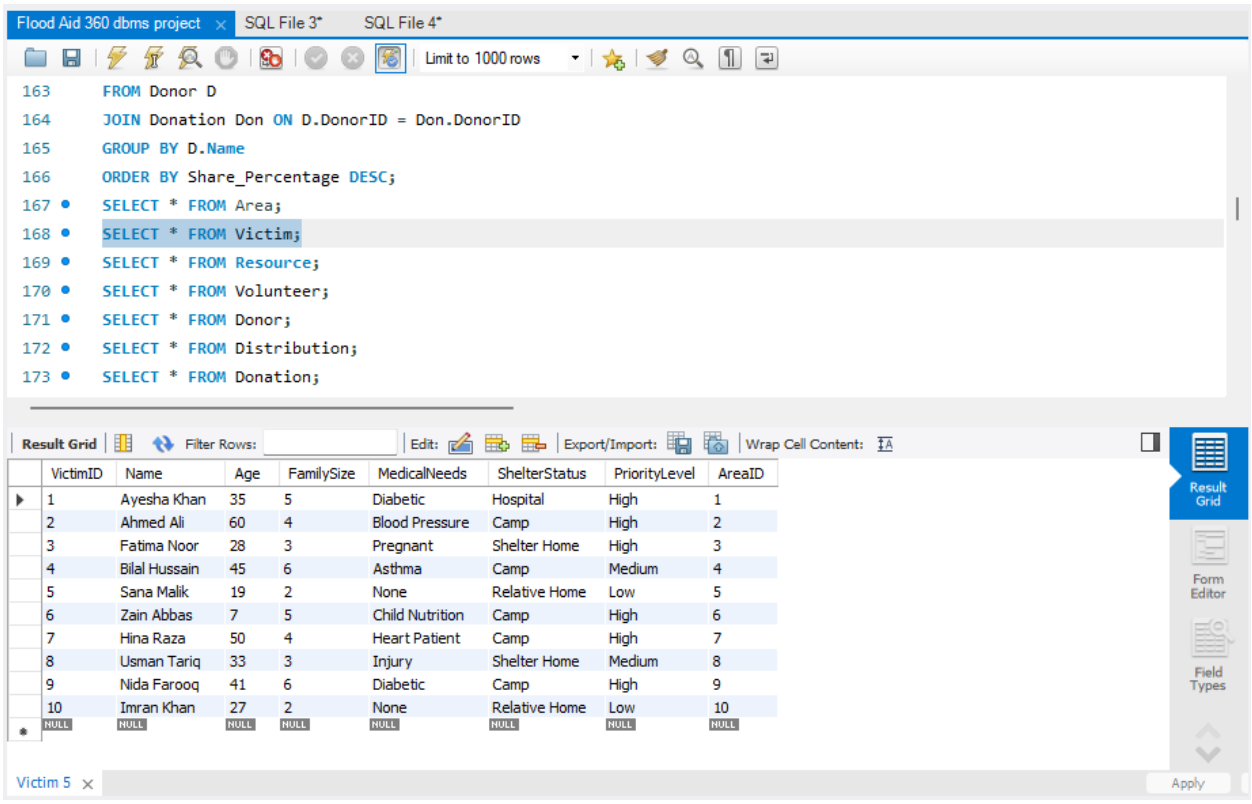
```
163     FROM Donor D
164     JOIN Donation Don ON D.DonorID = Don.DonorID
165     GROUP BY D.Name
166     ORDER BY Share_Percentage DESC;
167 •   SELECT * FROM Area;
168 •   SELECT * FROM Victim;
169 •   SELECT * FROM Resource;
170 •   SELECT * FROM Volunteer;
171 •   SELECT * FROM Donor;
172 •   SELECT * FROM Distribution;
173 •   SELECT * FROM Donation;
```

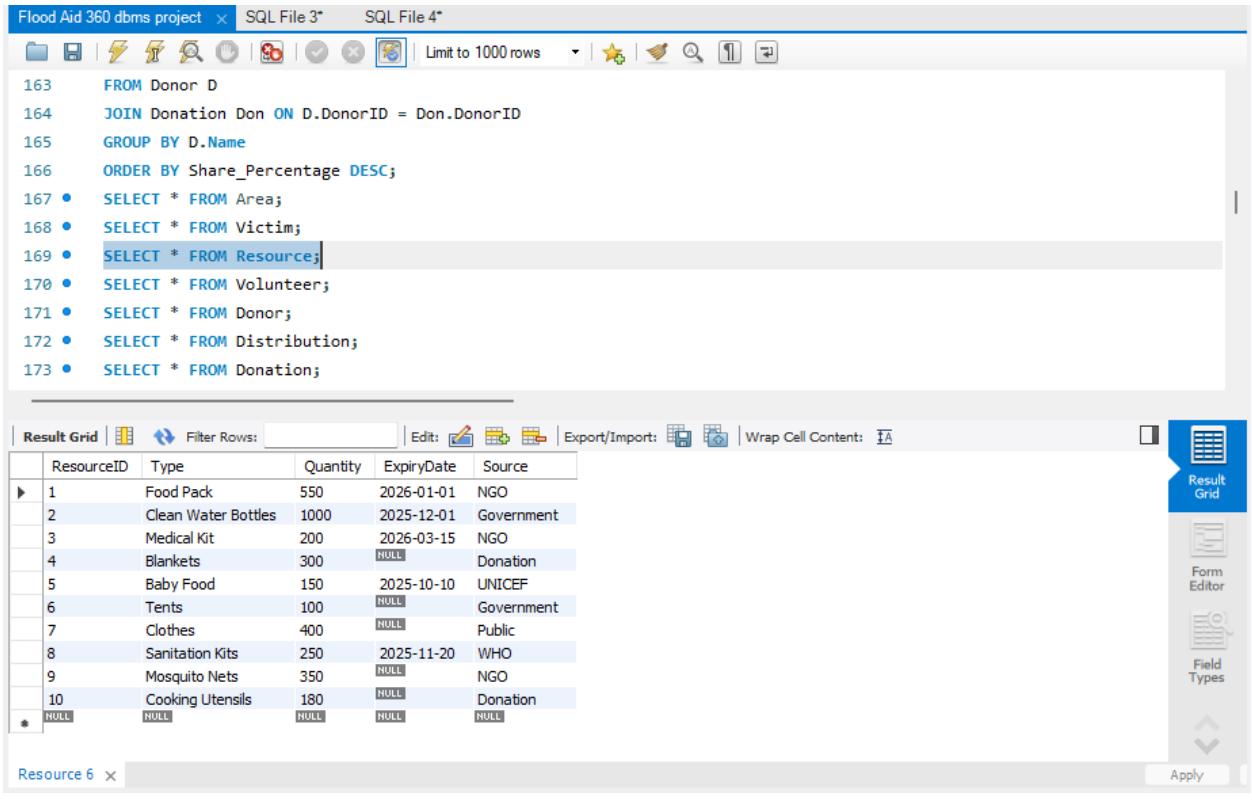
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

AreaID	District	Village	SeverityLevel	GPSCoordinates
1	Swat	Kalam	Low	35.4902,72.5796
2	Charsadda	Tangi	Medium	34.1490,71.7420
3	Nowshera	Pabbi	High	34.0113,71.7960
4	Dera Ismail Khan	Kulachi	Low	31.8315,70.4590
5	Chitral	Booni	Medium	36.3210,72.8780
6	Mansehra	Balakot	High	34.5471,73.3510
7	Muzaffargarh	Kot Addu	High	30.4697,70.9670
8	Thatta	Makli	Medium	24.7470,67.9230
9	Badin	Talhar	High	24.8845,68.8140
10	Rajpur	Jampur	Low	29.6424,70.5950
NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

Area 4 | Apply


Flood Aid 360 dbms project
SQL File 3*
SQL File 4*
Limit to 1000 rows
163 FROM Donor D
164 JOIN Donation Don ON D.DonorID = Don.DonorID
165 GROUP BY D.Name
166 ORDER BY Share_Percentage DESC;
167 SELECT * FROM Area;
168 SELECT * FROM Victim;
169 SELECT * FROM Resource;
170 SELECT * FROM Volunteer;
171 SELECT * FROM Donor;
172 SELECT * FROM Distribution;
173 SELECT * FROM Donation;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
VictimID Name Age FamilySize MedicalNeeds ShelterStatus PriorityLevel AreaID
1 Ayesha Khan 35 5 Diabetic Hospital High 1
2 Ahmed Ali 60 4 Blood Pressure Camp High 2
3 Fatima Noor 28 3 Pregnant Shelter Home High 3
4 Bilal Hussain 45 6 Asthma Camp Medium 4
5 Sana Malik 19 2 None Relative Home Low 5
6 Zain Abbas 7 5 Child Nutrition Camp High 6
7 Hina Raza 50 4 Heart Patient Camp High 7
8 Usman Tariq 33 3 Injury Shelter Home Medium 8
9 Nida Farooq 41 6 Diabetic Camp High 9
10 Imran Khan 27 2 None Relative Home Low 10
Result Grid
Form Editor
Field Types
Victim 5
Apply


Flood Aid 360 dbms project
SQL File 3*
SQL File 4*
Limit to 1000 rows
163 FROM Donor D
164 JOIN Donation Don ON D.DonorID = Don.DonorID
165 GROUP BY D.Name
166 ORDER BY Share_Percentage DESC;
167 SELECT * FROM Area;
168 SELECT * FROM Victim;
169 SELECT * FROM Resource;
170 SELECT * FROM Volunteer;
171 SELECT * FROM Donor;
172 SELECT * FROM Distribution;
173 SELECT * FROM Donation;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
ResourceID Type Quantity ExpiryDate Source
1 Food Pack 550 2026-01-01 NGO
2 Clean Water Bottles 1000 2025-12-01 Government
3 Medical Kit 200 2026-03-15 NGO
4 Blankets 300 NULL Donation
5 Baby Food 150 2025-10-10 UNICEF
6 Tents 100 NULL Government
7 Clothes 400 NULL Public
8 Sanitation Kits 250 2025-11-20 WHO
9 Mosquito Nets 350 NULL NGO
10 Cooking Utensils 180 NULL Donation
Result Grid
Form Editor
Field Types
Resource 6
Apply

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
163    FROM Donor D
164    JOIN Donation Don ON D.DonorID = Don.DonorID
165    GROUP BY D.Name
166    ORDER BY Share_Percentage DESC;
167    SELECT * FROM Area;
168    SELECT * FROM Victim;
169    SELECT * FROM Resource;
170    SELECT * FROM Volunteer;
171    SELECT * FROM Donor;
172    SELECT * FROM Distribution;
173    SELECT * FROM Donation;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

VolunteerID	Name	Skill	Location	Availability
1	Ali Ahmed	Medical Aid	Swat	0
2	Sara Khan	Food Distribution	Charsadda	1
3	Usman Riaz	Rescue	Nowshera	0
4	Hassan Ali	Logistics	DI Khan	1
5	Areeba Noor	Child Care	Chitral	1
6	Bilal Shah	Medical Aid	Mansehra	0
7	Zoya Malik	Shelter Management	Muzaffargarh	1
8	Fahad Iqbal	Transport	Thatta	1
9	Noor Fatima	Health Support	Badin	1
10	Kamran Akbar	Supply Handling	Rajpur	0
NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

Volunteer 7 | Apply

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
163    FROM Donor D
164    JOIN Donation Don ON D.DonorID = Don.DonorID
165    GROUP BY D.Name
166    ORDER BY Share_Percentage DESC;
167    SELECT * FROM Area;
168    SELECT * FROM Victim;
169    SELECT * FROM Resource;
170    SELECT * FROM Volunteer;
171    SELECT * FROM Donor;
172    SELECT * FROM Distribution;
173    SELECT * FROM Donation;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

DonorID	Name	Contact	DonationType
1	Edhi Foundation	0300-9998888	Food
2	Saylani Welfare	021-111-222	Medical
3	Al-Khidmat	051-111-333	Shelter
4	Red Crescent	051-222-444	Relief Goods
5	UNICEF	021-333-555	Child Care
6	WHO	021-444-666	Medical
7	Private Donor A	0300-1234567	Cash
8	Private Donor B	0301-7654321	Food
9	NGO Care	042-555-777	Sanitation
10	Local Community	0302-9998888	Clothes
NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

Donor 8 | Apply

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
166     ORDER BY Share_Percentage DESC;
167 •   SELECT * FROM Area;
168 •   SELECT * FROM Victim;
169 •   SELECT * FROM Resource;
170 •   SELECT * FROM Volunteer;
171 •   SELECT * FROM Donor;
172 •   SELECT * FROM Distribution;
173 •   SELECT * FROM Donation;
174 •   SELECT ResourceID, Type, Quantity, ExpiryDate, Source
175     FROM Resource;
176 •   SELECT Type, ExpiryDate
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

DistributionID	VictimID	ResourceID	Date	Quantity
1	1	1	2025-12-23	5
2	2	2	2025-12-23	5
3	3	3	2025-12-23	1
4	4	4	2025-12-23	3
5	5	5	2025-12-23	1
6	6	6	2025-12-23	1
7	7	7	2025-12-23	4
8	8	8	2025-12-23	2
9	9	9	2025-12-23	3
10	10	10	2025-12-23	1
NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

Distribution 9 | Apply

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
169 •   SELECT * FROM Resource;
170 •   SELECT * FROM Volunteer;
171 •   SELECT * FROM Donor;
172 •   SELECT * FROM Distribution;
173 •   SELECT * FROM Donation;
174 •   SELECT ResourceID, Type, Quantity, ExpiryDate, Source
175     FROM Resource;
176 •   SELECT Type, ExpiryDate
177     FROM Resource
178     WHERE ExpiryDate IS NOT NULL;
179 •   SELECT
```

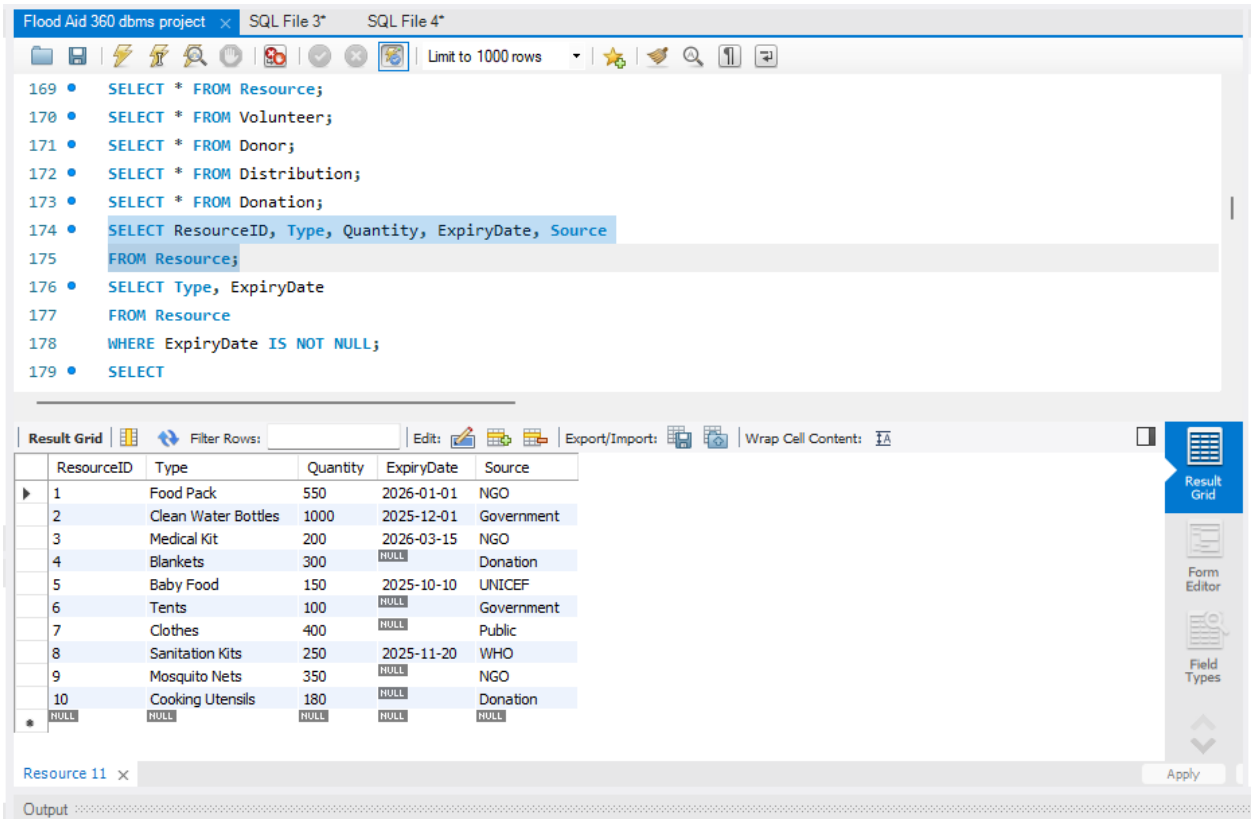
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

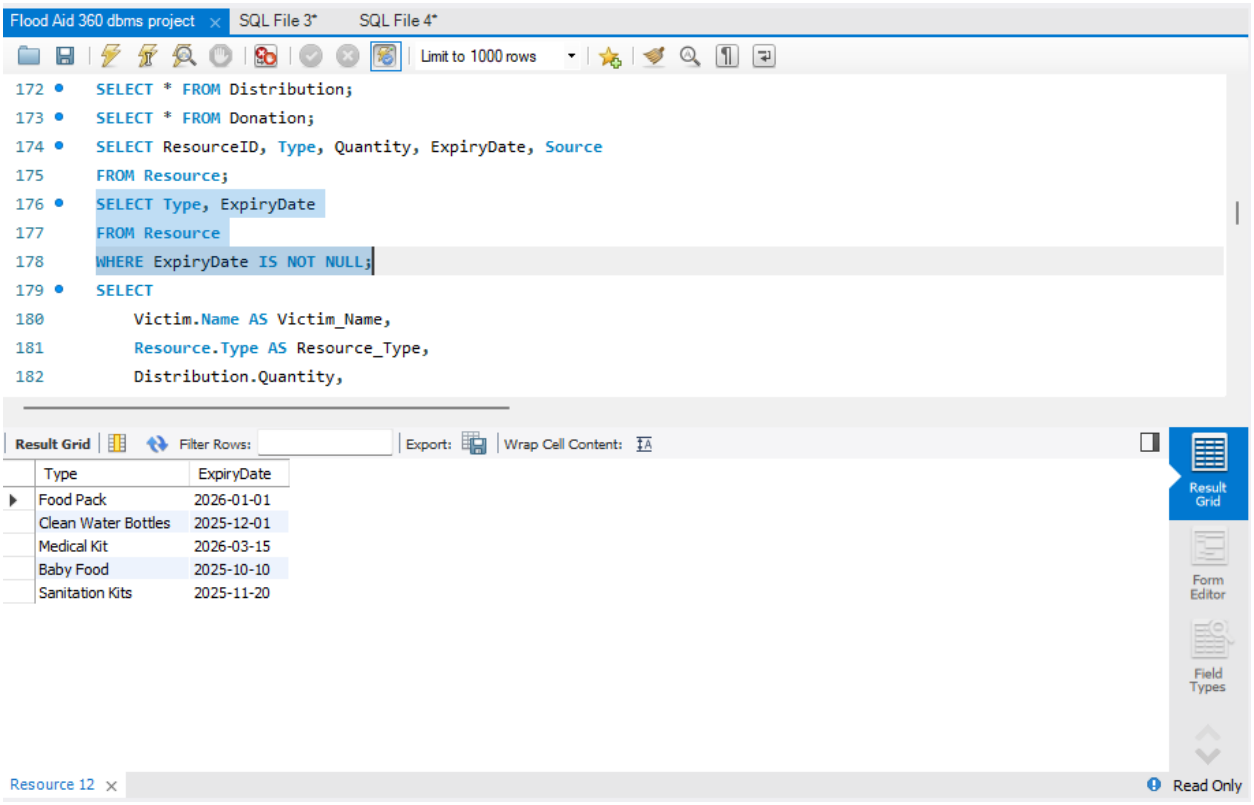
DonationID	DonorID	ResourceID	Amount	Date
1	1	1	500	2025-12-23
2	2	3	150	2025-12-23
3	3	6	50	2025-12-23
4	4	2	300	2025-12-23
5	5	5	100	2025-12-23
6	6	3	180	2025-12-23
7	7	1	250	2025-12-23
8	8	4	120	2025-12-23
9	9	8	160	2025-12-23
10	10	7	90	2025-12-23
NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

Donation 10 | Apply

Output


Flood Aid 360 dbms project
SQL File 3*
SQL File 4*
Limit to 1000 rows
169 SELECT * FROM Resource;
170 SELECT * FROM Volunteer;
171 SELECT * FROM Donor;
172 SELECT * FROM Distribution;
173 SELECT * FROM Donation;
174 SELECT ResourceID, Type, Quantity, ExpiryDate, Source
175 FROM Resource;
176 SELECT Type, ExpiryDate
177 FROM Resource
178 WHERE ExpiryDate IS NOT NULL;
179 SELECT
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
ResourceID Type Quantity ExpiryDate Source
1 Food Pack 550 2026-01-01 NGO
2 Clean Water Bottles 1000 2025-12-01 Government
3 Medical Kit 200 2026-03-15 NGO
4 Blankets 300 NULL Donation
5 Baby Food 150 2025-10-10 UNICEF
6 Tents 100 NULL Government
7 Clothes 400 NULL Public
8 Sanitation Kits 250 2025-11-20 WHO
9 Mosquito Nets 350 NULL NGO
10 Cooking Utensils 180 NULL Donation
Result Grid
Form Editor
Field Types
Resource 11
Apply
Output


Flood Aid 360 dbms project
SQL File 3*
SQL File 4*
Limit to 1000 rows
172 SELECT * FROM Distribution;
173 SELECT * FROM Donation;
174 SELECT ResourceID, Type, Quantity, ExpiryDate, Source
175 FROM Resource;
176 SELECT Type, ExpiryDate
177 FROM Resource
178 WHERE ExpiryDate IS NOT NULL;
179 SELECT
180 Victim.Name AS Victim_Name,
181 Resource.Type AS Resource_Type,
182 Distribution.Quantity,
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Type ExpiryDate
Food Pack 2026-01-01
Clean Water Bottles 2025-12-01
Medical Kit 2026-03-15
Baby Food 2025-10-10
Sanitation Kits 2025-11-20
Result Grid
Form Editor
Field Types
Resource 12
Read Only

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
178    WHERE ExpiryDate IS NOT NULL;
179    SELECT
180        Victim.Name AS Victim_Name,
181        Resource.Type AS Resource_Type,
182        Distribution.Quantity,
183        Distribution.Date
184    FROM Distribution
185    JOIN Victim ON Distribution.VictimID = Victim.VictimID
186    JOIN Resource ON Distribution.ResourceID = Resource.ResourceID;
187    SELECT Name, Skill, Location
188    FROM Volunteer
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Victim_Name	Resource_Type	Quantity	Date
Ayesha Khan	Food Pack	5	2025-12-23
Ahmed Ali	Clean Water Bottles	5	2025-12-23
Fatima Noor	Medical Kit	1	2025-12-23
Bilal Hussain	Blankets	3	2025-12-23
Sana Malik	Baby Food	1	2025-12-23
Zain Abbas	Tents	1	2025-12-23
Hina Raza	Clothes	4	2025-12-23
Usman Tariq	Sanitation Kits	2	2025-12-23
Nida Farooq	Mosquito Nets	3	2025-12-23
Imran Khan	Cooking Utensils	1	2025-12-23

Result Grid | Form Editor | Field Types

Result 13 | Read Only

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
184    FROM Distribution
185    JOIN Victim ON Distribution.VictimID = Victim.VictimID
186    JOIN Resource ON Distribution.ResourceID = Resource.ResourceID;
187    SELECT Name, Skill, Location
188    FROM Volunteer
189    WHERE Availability = TRUE;
190    SELECT Name
191    FROM Volunteer
192    WHERE Skill = 'Medical Aid'
193    AND Location = 'Swat'
194    AND Availability = TRUE;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	Skill	Location
Sara Khan	Food Distribution	Charsadda
Hassan Ali	Logistics	DI Khan
Areeba Noor	Child Care	Chitral
Zoya Malik	Shelter Management	Muzaffargarh
Fahad Iqbal	Transport	Thatta
Noor Fatima	Health Support	Badin

Result Grid | Form Editor | Field Types

Volunteer 14 | Read Only

Output

```sql
SELECT Name, Skill, Location
FROM Volunteer
WHERE Availability = TRUE;
SELECT Name
FROM Volunteer
WHERE Skill LIKE '%Medical%'
AND Location = 'Swat';

SELECT
    Donor.Name AS Donor_Name,
    Resource.Type AS Resource_Type,
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name
Ali Ahmed

Result Grid

Flood Aid 360 dbms project | SQL File 3* | SQL File 4*

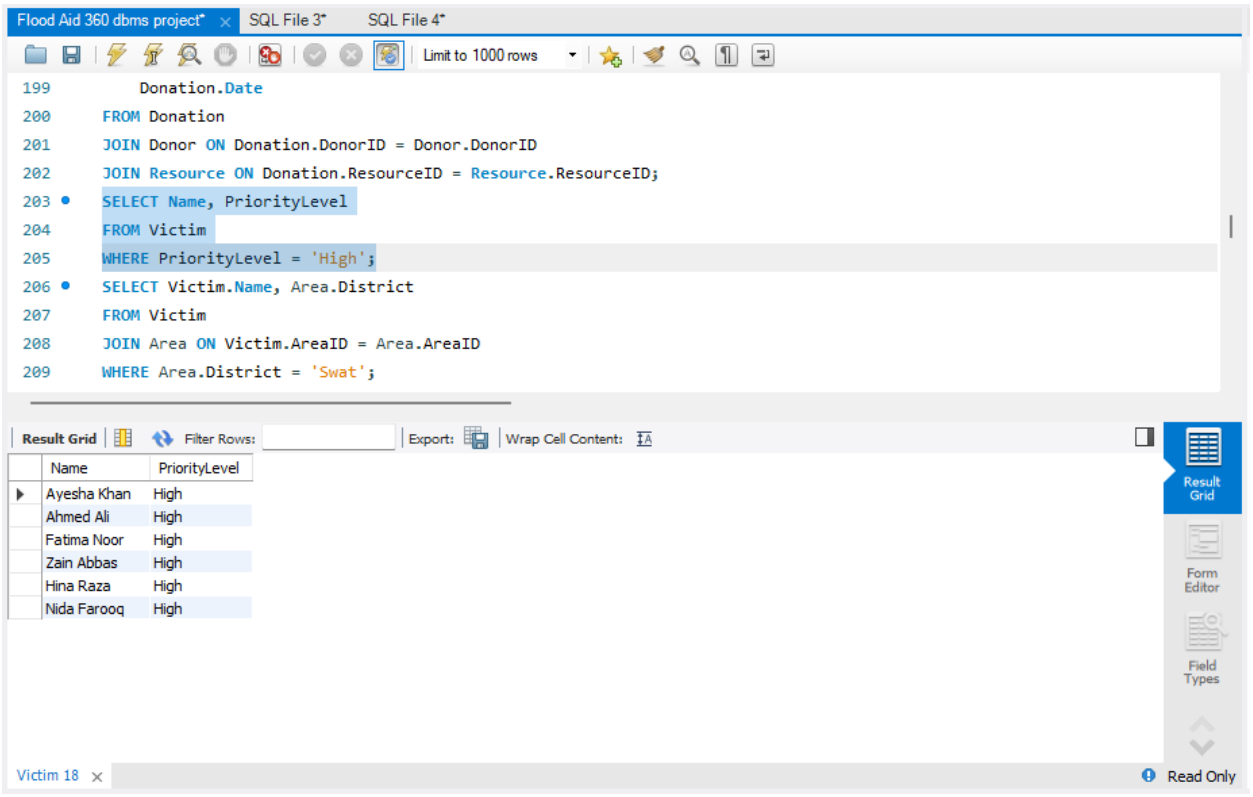
```sql
AND Location = 'Swat'
AND Availability = TRUE;
SELECT
    Donor.Name AS Donor_Name,
    Resource.Type AS Resource_Type,
    Donation.Amount,
    Donation.Date
FROM Donation
JOIN Donor ON Donation.DonorID = Donor.DonorID
JOIN Resource ON Donation.ResourceID = Resource.ResourceID;
SELECT Name, PriorityLevel
```

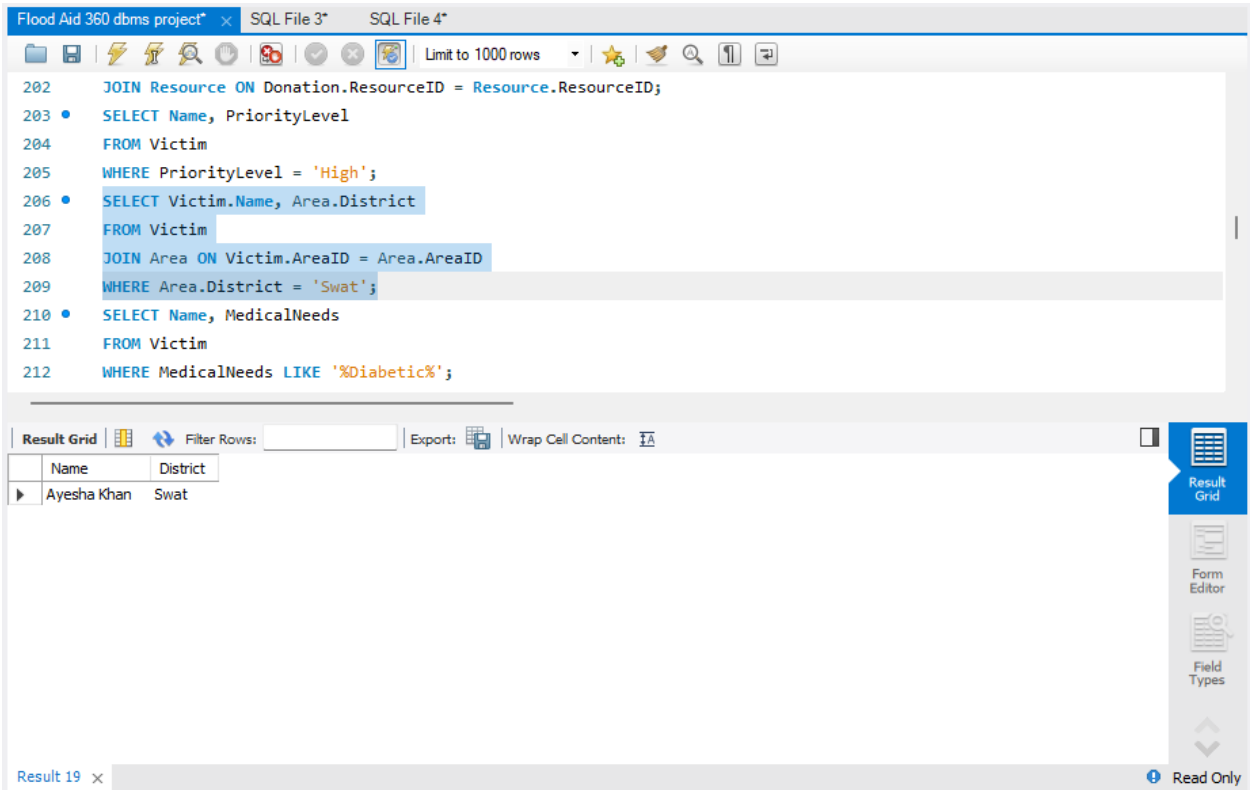
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

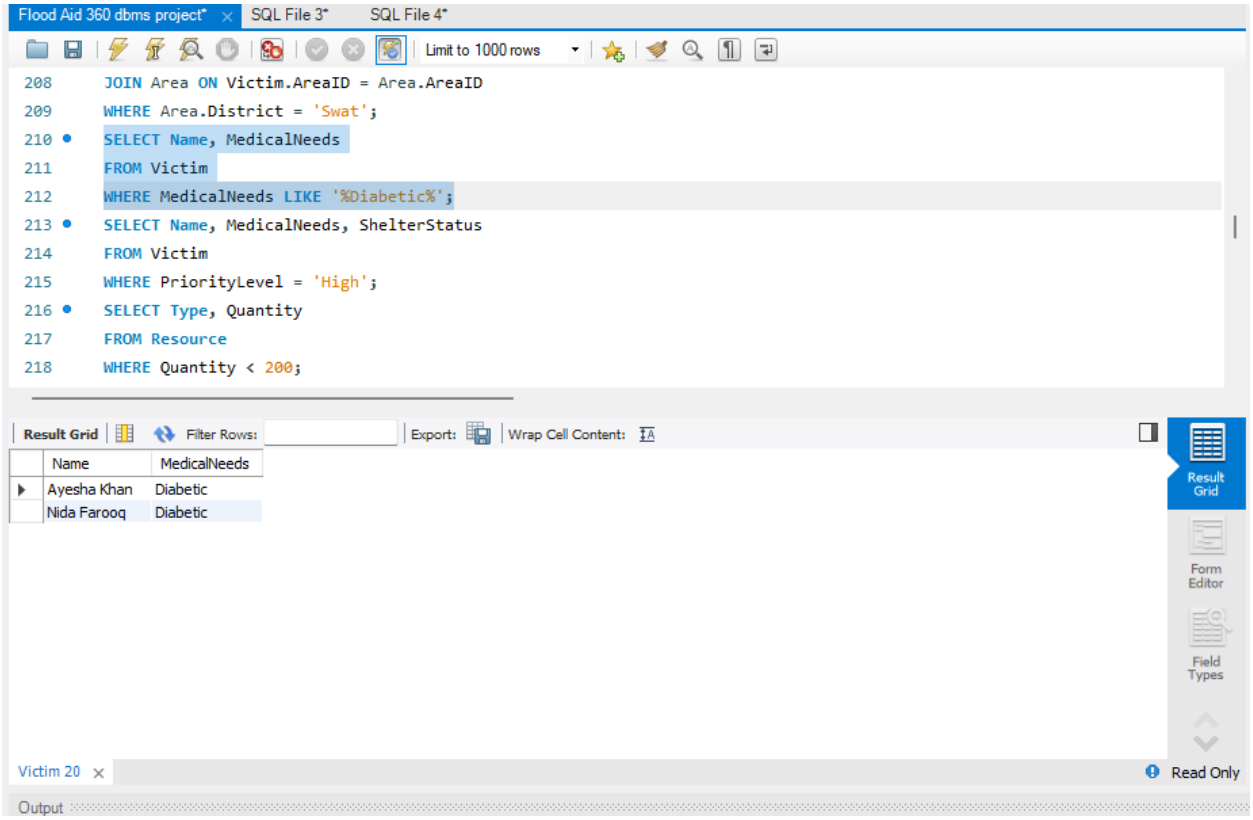
Donor_Name	Resource_Type	Amount	Date
Edhi Foundation	Food Pack	500	2025-12-23
Saylani Welfare	Medical Kit	150	2025-12-23
Al-Khidmat	Tents	50	2025-12-23
Red Crescent	Clean Water Bottles	300	2025-12-23
UNICEF	Baby Food	100	2025-12-23
WHO	Medical Kit	180	2025-12-23
Private Donor A	Food Pack	250	2025-12-23
Private Donor B	Blankets	120	2025-12-23
NGO Care	Sanitation Kits	160	2025-12-23
Local Community	Clothes	90	2025-12-23

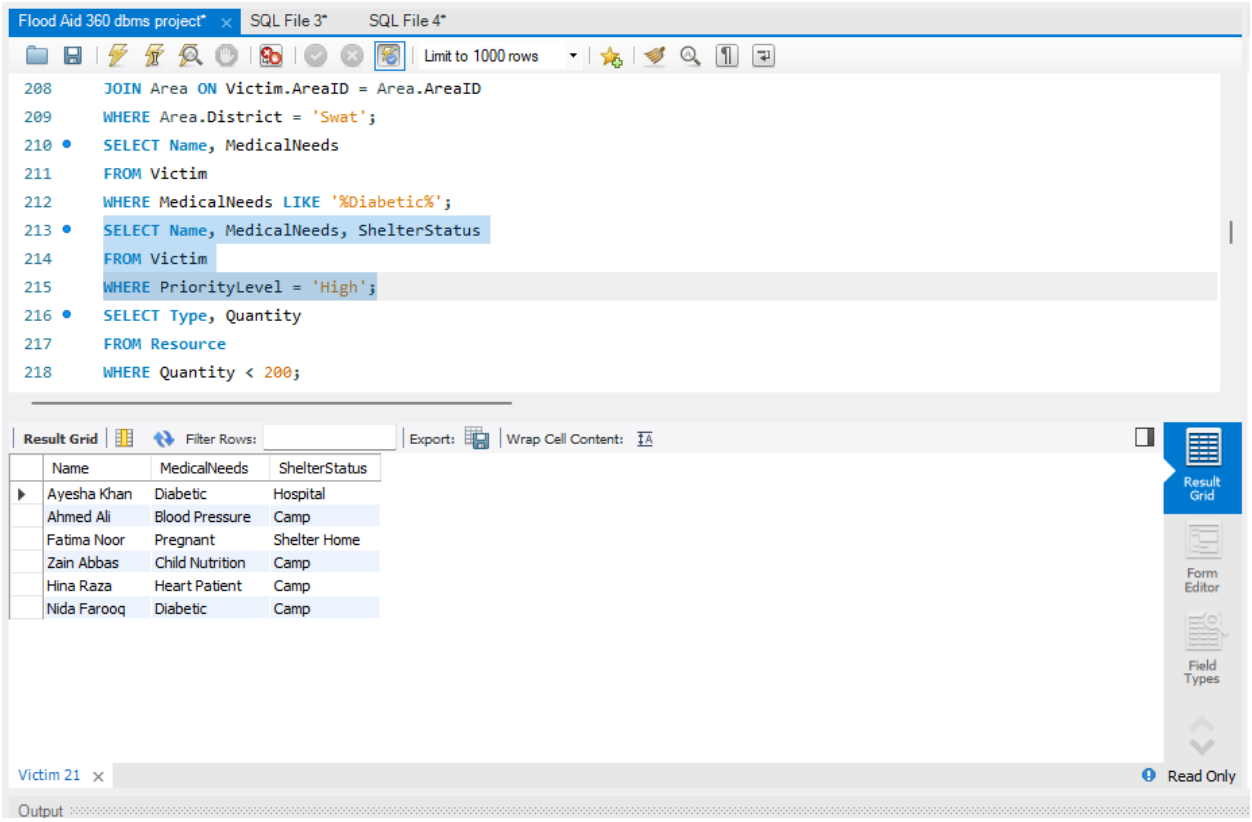
Result Grid | Form Editor | Field Types

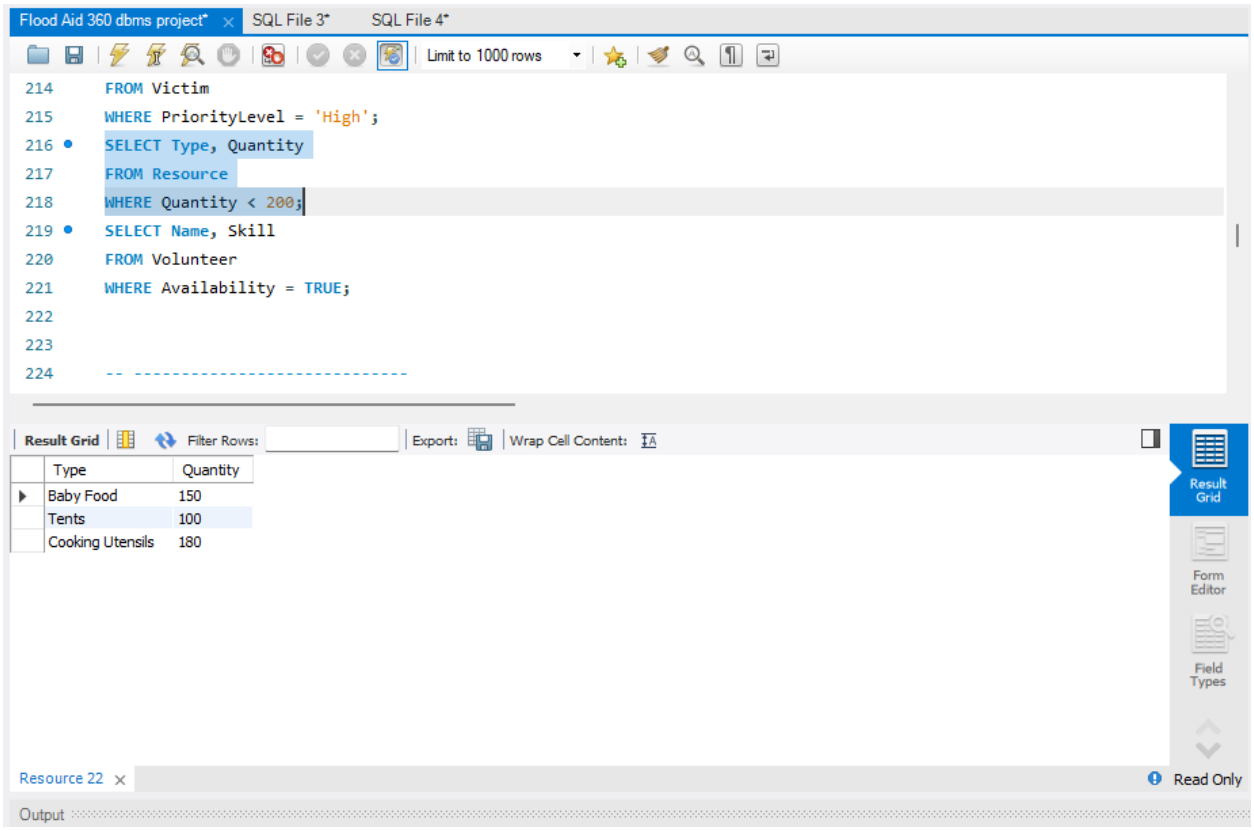
Result 16 | Read Only

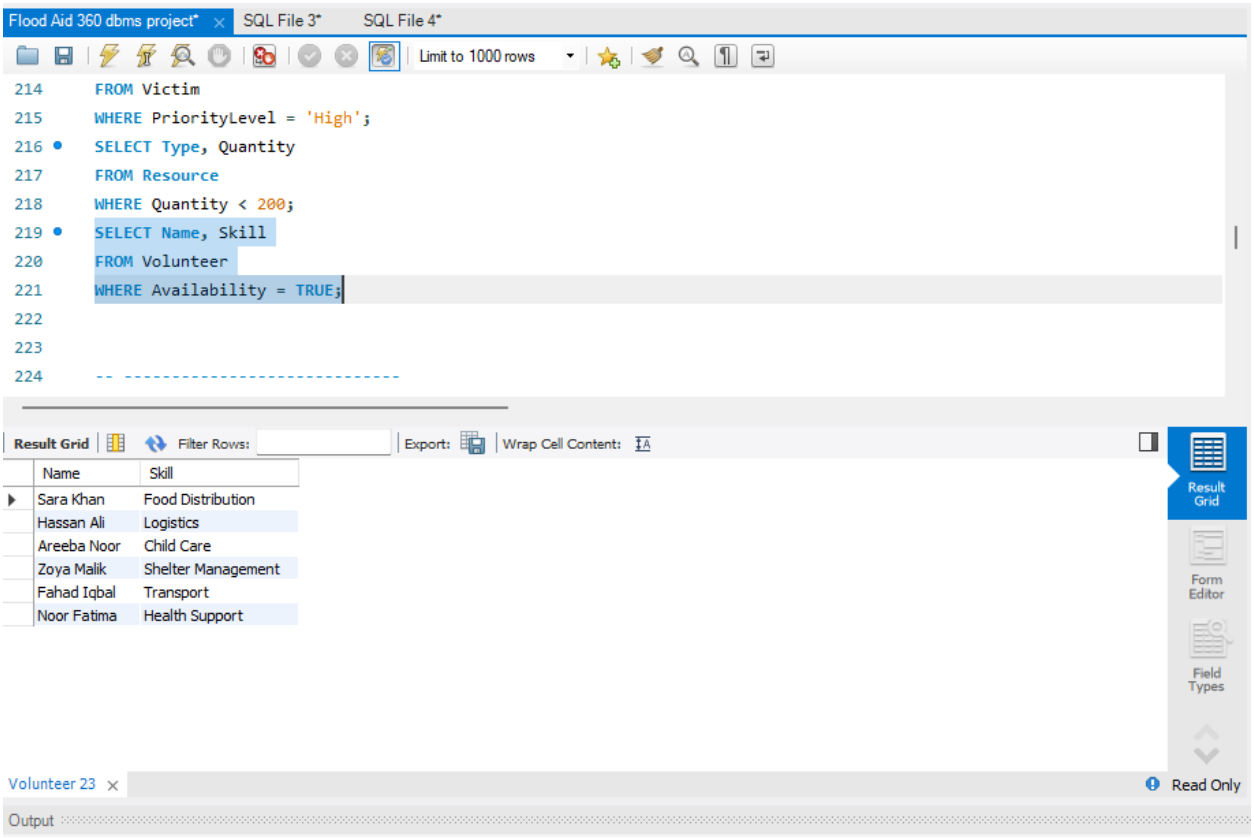

Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
199 Donation.Date
200 FROM Donation
201 JOIN Donor ON Donation.DonorID = Donor.DonorID
202 JOIN Resource ON Donation.ResourceID = Resource.ResourceID;
203 SELECT Name, PriorityLevel
204 FROM Victim
205 WHERE PriorityLevel = 'High';
206 SELECT Victim.Name, Area.District
207 FROM Victim
208 JOIN Area ON Victim.AreaID = Area.AreaID
209 WHERE Area.District = 'Swat';
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Name PriorityLevel
Ayesha Khan High
Ahmed Ali High
Fatima Noor High
Zain Abbas High
Hina Raza High
Nida Farooq High
Result Grid
Form Editor
Field Types
Victim 18
Read Only

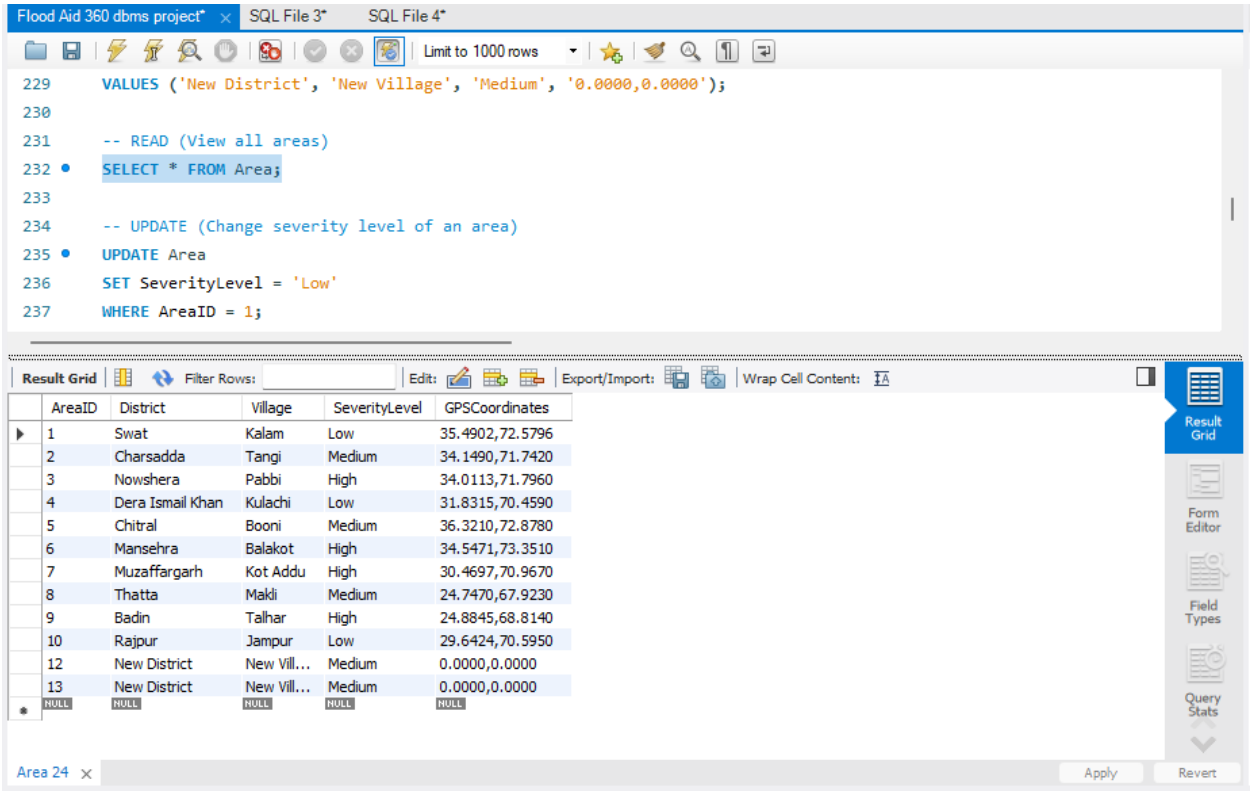

Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
202 JOIN Resource ON Donation.ResourceID = Resource.ResourceID;
203 SELECT Name, PriorityLevel
204 FROM Victim
205 WHERE PriorityLevel = 'High';
206 SELECT Victim.Name, Area.District
207 FROM Victim
208 JOIN Area ON Victim.AreaID = Area.AreaID
209 WHERE Area.District = 'Swat';
210 SELECT Name, MedicalNeeds
211 FROM Victim
212 WHERE MedicalNeeds LIKE '%Diabetic%';
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Name District
Ayesha Khan Swat
Result Grid
Form Editor
Field Types
Result 19
Read Only

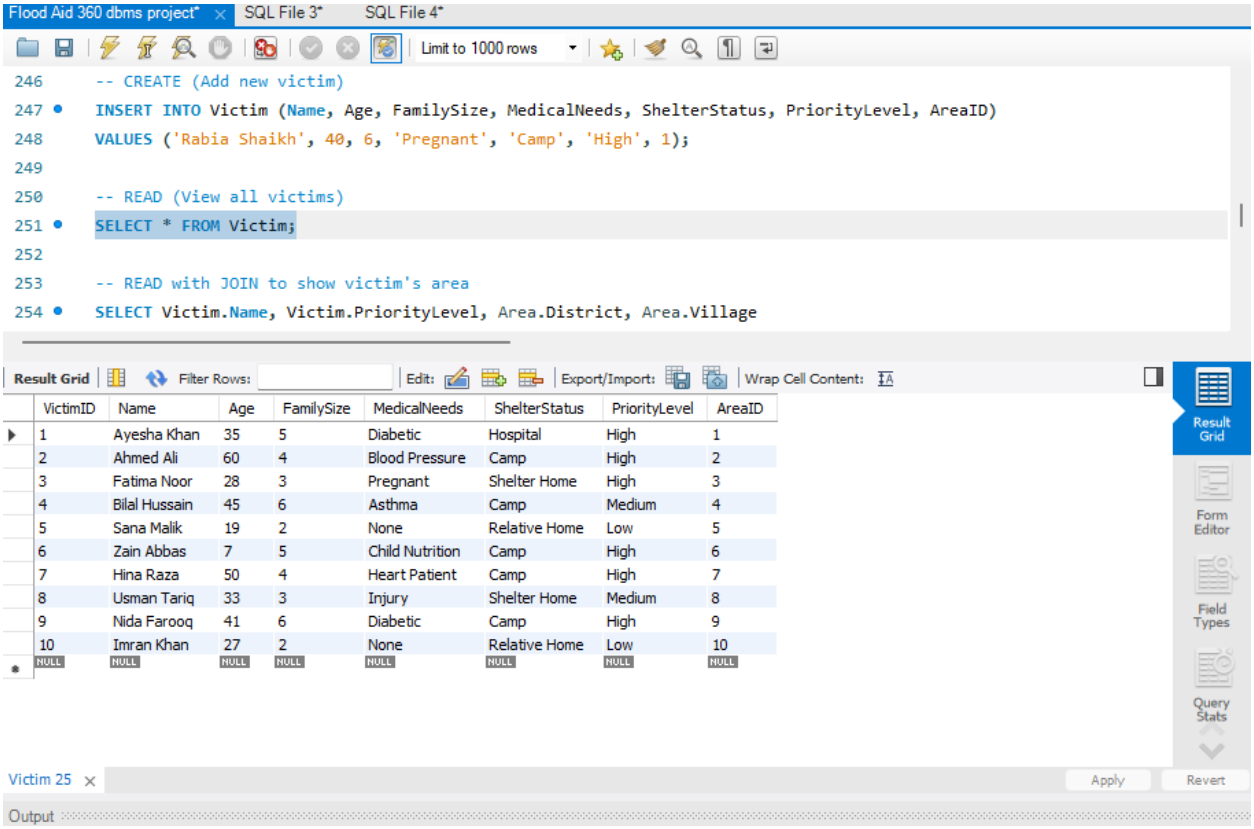

Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
208 JOIN Area ON Victim.AreaID = Area.AreaID
209 WHERE Area.District = 'Swat';
210 SELECT Name, MedicalNeeds
211 FROM Victim
212 WHERE MedicalNeeds LIKE '%Diabetic%';
213 SELECT Name, MedicalNeeds, ShelterStatus
214 FROM Victim
215 WHERE PriorityLevel = 'High';
216 SELECT Type, Quantity
217 FROM Resource
218 WHERE Quantity < 200;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Name
MedicalNeeds
Ayesha Khan
Diabetic
Nida Farooq
Diabetic
Result Grid
Form Editor
Field Types
Victim 20
Read Only
Output


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
208 JOIN Area ON Victim.AreaID = Area.AreaID
209 WHERE Area.District = 'Swat';
210 SELECT Name, MedicalNeeds
211 FROM Victim
212 WHERE MedicalNeeds LIKE '%Diabetic%';
213 SELECT Name, MedicalNeeds, ShelterStatus
214 FROM Victim
215 WHERE PriorityLevel = 'High';
216 SELECT Type, Quantity
217 FROM Resource
218 WHERE Quantity < 200;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Name
MedicalNeeds
ShelterStatus
Ayesha Khan
Diabetic
Hospital
Ahmed Ali
Blood Pressure
Camp
Fatima Noor
Pregnant
Shelter Home
Zain Abbas
Child Nutrition
Camp
Hina Raza
Heart Patient
Camp
Nida Farooq
Diabetic
Camp
Result Grid
Form Editor
Field Types
Victim 21
Read Only
Output


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
214 FROM Victim
215 WHERE PriorityLevel = 'High';
216 SELECT Type, Quantity
217 FROM Resource
218 WHERE Quantity < 200;
219 SELECT Name, Skill
220 FROM Volunteer
221 WHERE Availability = TRUE;
222
223
224 -- ----------
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Type
Quantity
Baby Food
150
Tents
100
Cooking Utensils
180
Result Grid
Form Editor
Field Types
Resource 22
Read Only
Output


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
214 FROM Victim
215 WHERE PriorityLevel = 'High';
216 SELECT Type, Quantity
217 FROM Resource
218 WHERE Quantity < 200;
219 SELECT Name, Skill
220 FROM Volunteer
221 WHERE Availability = TRUE;
222
223
224 -- ----------
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Name
Skill
Sara Khan
Food Distribution
Hassan Ali
Logistics
Areeba Noor
Child Care
Zoya Malik
Shelter Management
Fahad Iqbal
Transport
Noor Fatima
Health Support
Result Grid
Form Editor
Field Types
Volunteer 23
Read Only
Output


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
VALUES ('New District', 'New Village', 'Medium', '0.0000,0.0000');
-- READ (View all areas)
SELECT * FROM Area;
-- UPDATE (Change severity level of an area)
UPDATE Area
SET SeverityLevel = 'Low'
WHERE AreaID = 1;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
AreaID | District | Village | SeverityLevel | GPSCoordinates
1 | Swat | Kalam | Low | 35.4902,72.5796
2 | Charsadda | Tangi | Medium | 34.1490,71.7420
3 | Nowshera | Pabbi | High | 34.0113,71.7960
4 | Dera Ismail Khan | Kulachi | Low | 31.8315,70.4590
5 | Chitral | Booni | Medium | 36.3210,72.8780
6 | Mansehra | Balakot | High | 34.5471,73.3510
7 | Muzaffargarh | Kot Addu | High | 30.4697,70.9670
8 | Thatta | Makli | Medium | 24.7470,67.9230
9 | Badin | Talhar | High | 24.8845,68.8140
10 | Rajpur | Jampur | Low | 29.6424,70.5950
12 | New District | New Vill... | Medium | 0.0000,0.0000
13 | New District | New Vill... | Medium | 0.0000,0.0000
Result Grid
Form Editor
Field Types
Query Stats
Area 24
Apply
Revert


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
-- CREATE (Add new victim)
INSERT INTO Victim (Name, Age, FamilySize, MedicalNeeds, ShelterStatus, PriorityLevel, AreaID)
VALUES ('Rabia Shaikh', 40, 6, 'Pregnant', 'Camp', 'High', 1);
-- READ (View all victims)
SELECT * FROM Victim;
-- READ with JOIN to show victim's area
SELECT Victim.Name, Victim.PriorityLevel, Area.District, Area.Village
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
VictimID | Name | Age | FamilySize | MedicalNeeds | ShelterStatus | PriorityLevel | AreaID
1 | Ayesha Khan | 35 | 5 | Diabetic | Hospital | High | 1
2 | Ahmed Ali | 60 | 4 | Blood Pressure | Camp | High | 2
3 | Fatima Noor | 28 | 3 | Pregnant | Shelter Home | High | 3
4 | Bilal Hussain | 45 | 6 | Asthma | Camp | Medium | 4
5 | Sana Malik | 19 | 2 | None | Relative Home | Low | 5
6 | Zain Abbas | 7 | 5 | Child Nutrition | Camp | High | 6
7 | Hina Raza | 50 | 4 | Heart Patient | Camp | High | 7
8 | Usman Tariq | 33 | 3 | Injury | Shelter Home | Medium | 8
9 | Nida Farooq | 41 | 6 | Diabetic | Camp | High | 9
10 | Imran Khan | 27 | 2 | None | Relative Home | Low | 10
Result Grid
Form Editor
Field Types
Query Stats
Victim 25
Apply
Revert
Output

Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
252
253     -- READ with JOIN to show victim's area
254     SELECT Victim.Name, Victim.PriorityLevel, Area.District, Area.Village
255     FROM Victim
256     JOIN Area ON Victim.AreaID = Area.AreaID;
257
258     -- UPDATE (Change victim shelter)
259     UPDATE Victim
260     SET ShelterStatus = 'Hospital'
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	PriorityLevel	District	Village
Ayesha Khan	High	Swat	Kalam
Ahmed Ali	High	Charsadda	Tangi
Fatima Noor	High	Nowshera	Pabbi
Bilal Hussain	Medium	Dera Ismail Khan	Kulachi
Sana Malik	Low	Chitral	Booni
Zain Abbas	High	Mansehra	Balakot
Hina Raza	High	Muzaffargarh	Kot Addu
Usman Tariq	Medium	Thatta	Makli
Nida Farooq	High	Badin	Talhar
Imran Khan	Low	Rajpur	Jampur

Result Grid | Form Editor | Field Types | Query Stats

Result 26 | Read Only

Output

Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

Limit to 1000 rows

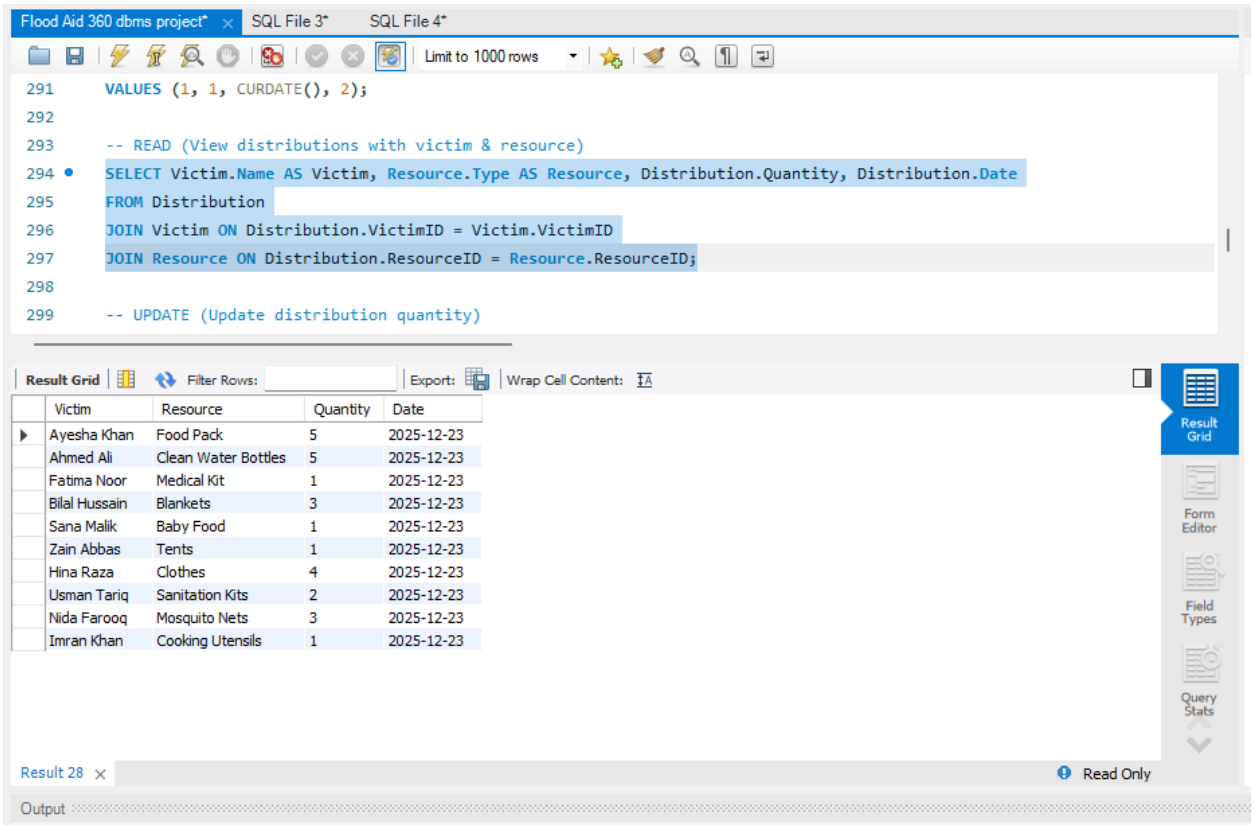
```
270     -- CREATE (Add new resource)
271     INSERT INTO Resource (Type, Quantity, ExpiryDate, Source)
272     VALUES ('Sanitation Kits', 100, '2026-05-01', 'NGO');
273
274     -- READ (View all resources)
275     SELECT * FROM Resource;
276
277     -- UPDATE (Update resource quantity)
278     UPDATE Resource
```

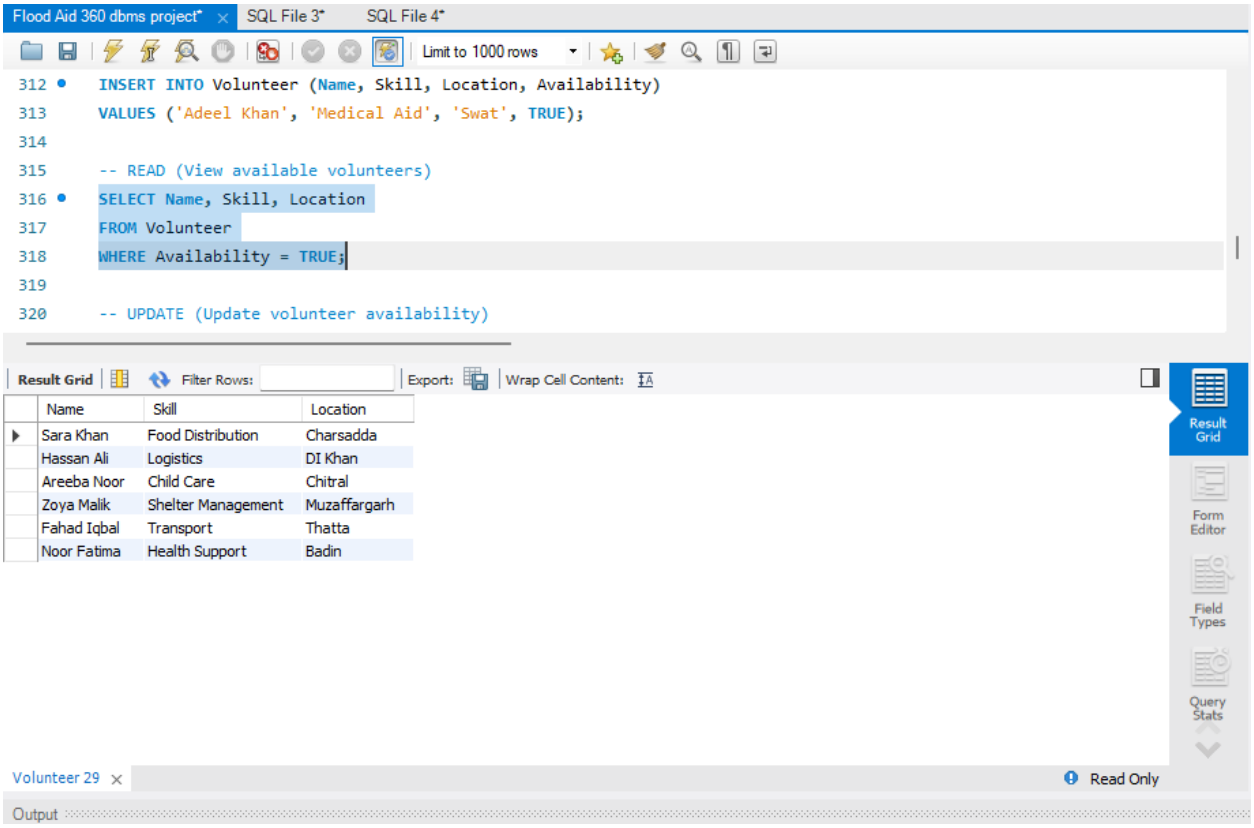
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

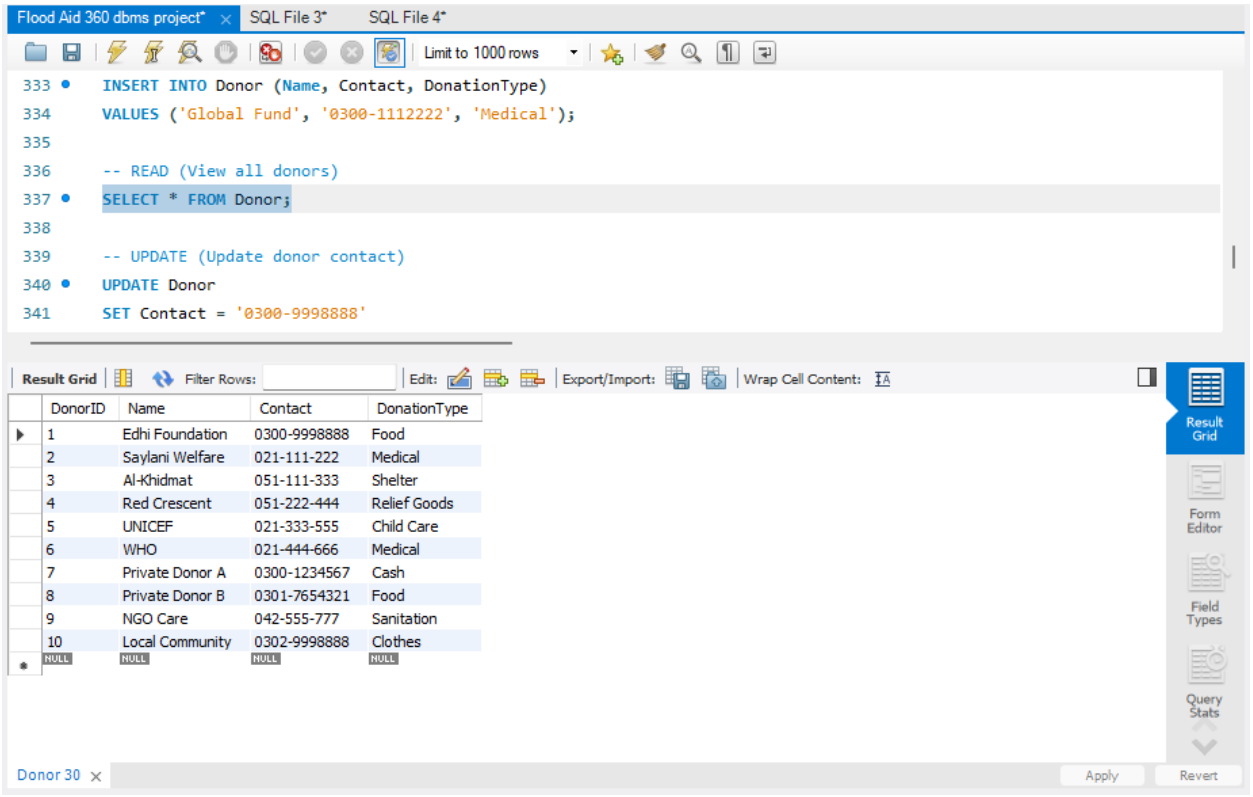
ResourceID	Type	Quantity	ExpiryDate	Source
1	Food Pack	550	2026-01-01	NGO
2	Clean Water Bottles	1000	2025-12-01	Government
3	Medical Kit	200	2026-03-15	NGO
4	Blankets	300	NULL	Donation
5	Baby Food	150	2025-10-10	UNICEF
6	Tents	100	NULL	Government
7	Clothes	400	NULL	Public
8	Sanitation Kits	250	2025-11-20	WHO
9	Mosquito Nets	350	NULL	NGO
10	Cooking Utensils	180	NULL	Donation
NULL	NULL	NULL	NULL	NULL

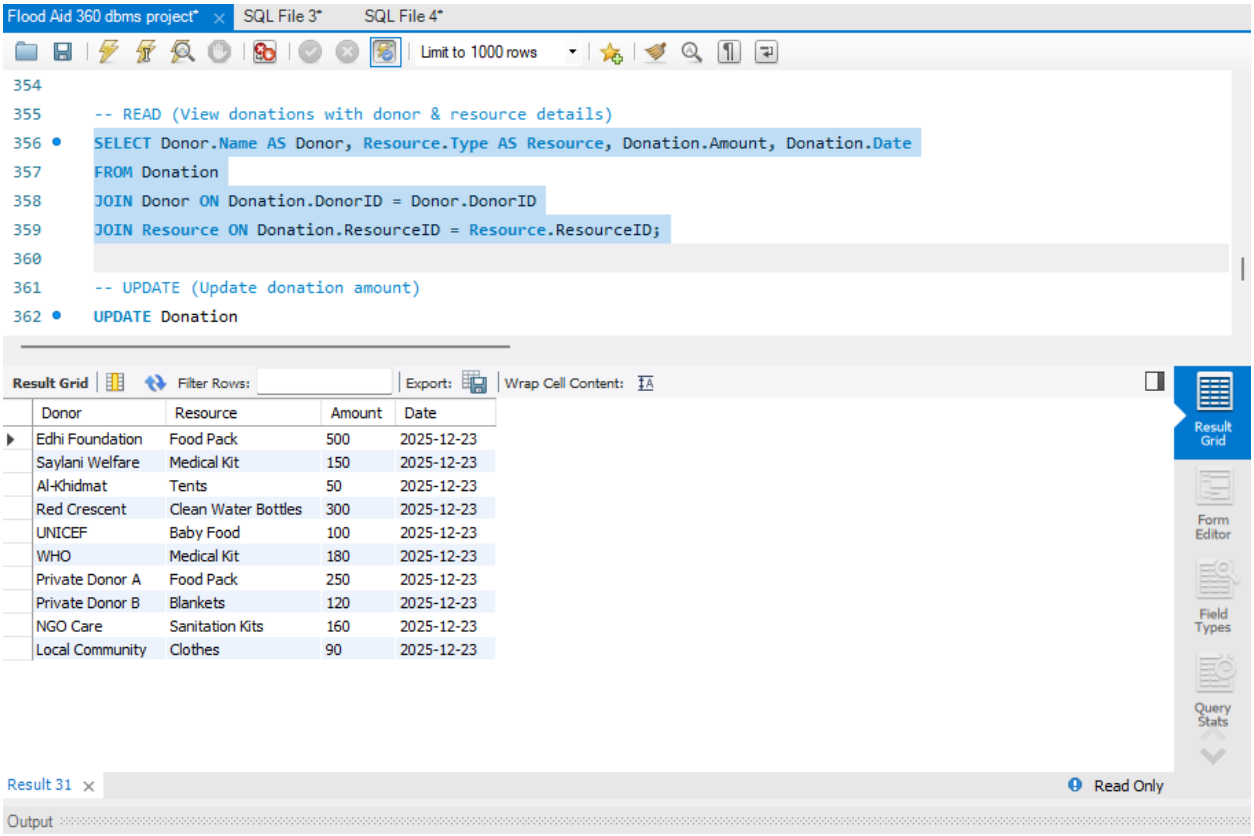
Result Grid | Form Editor | Field Types | Query Stats

Resource 27 | Apply | Revert


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
VALUES (1, 1, CURDATE(), 2);
-- READ (View distributions with victim & resource)
SELECT Victim.Name AS Victim, Resource.Type AS Resource, Distribution.Quantity, Distribution.Date
FROM Distribution
JOIN Victim ON Distribution.VictimID = Victim.VictimID
JOIN Resource ON Distribution.ResourceID = Resource.ResourceID;
-- UPDATE (Update distribution quantity)
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Victim | Resource | Quantity | Date
Ayesha Khan | Food Pack | 5 | 2025-12-23
Ahmed Ali | Clean Water Bottles | 5 | 2025-12-23
Fatima Noor | Medical Kit | 1 | 2025-12-23
Bilal Hussain | Blankets | 3 | 2025-12-23
Sana Malik | Baby Food | 1 | 2025-12-23
Zain Abbas | Tents | 1 | 2025-12-23
Hina Raza | Clothes | 4 | 2025-12-23
Usman Tariq | Sanitation Kits | 2 | 2025-12-23
Nida Farooq | Mosquito Nets | 3 | 2025-12-23
Imran Khan | Cooking Utensils | 1 | 2025-12-23
Result 28
Read Only
Output


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
INSERT INTO Volunteer (Name, Skill, Location, Availability)
VALUES ('Adeel Khan', 'Medical Aid', 'Swat', TRUE);
-- READ (View available volunteers)
SELECT Name, Skill, Location
FROM Volunteer
WHERE Availability = TRUE;
-- UPDATE (Update volunteer availability)
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Name | Skill | Location
Sara Khan | Food Distribution | Charsadda
Hassan Ali | Logistics | DI Khan
Areeba Noor | Child Care | Chitral
Zoya Malik | Shelter Management | Muzaffargarh
Fahad Iqbal | Transport | Thatta
Noor Fatima | Health Support | Badin
Volunteer 29
Read Only
Output


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
333 INSERT INTO Donor (Name, Contact, DonationType)
334 VALUES ('Global Fund', '0300-1112222', 'Medical');
335
336 -- READ (View all donors)
337 SELECT * FROM Donor;
338
339 -- UPDATE (Update donor contact)
340 UPDATE Donor
341 SET Contact = '0300-9998888'
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
DonorID Name Contact DonationType
1 Edhi Foundation 0300-9998888 Food
2 Saylani Welfare 021-111-222 Medical
3 Al-Khidmat 051-111-333 Shelter
4 Red Crescent 051-222-444 Relief Goods
5 UNICEF 021-333-555 Child Care
6 WHO 021-444-666 Medical
7 Private Donor A 0300-1234567 Cash
8 Private Donor B 0301-7654321 Food
9 NGO Care 042-555-777 Sanitation
10 Local Community 0302-9998888 Clothes
Result Grid
Form Editor
Field Types
Query Stats
Donor 30
Apply
Revert


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
354
355 -- READ (View donations with donor & resource details)
356 SELECT Donor.Name AS Donor, Resource.Type AS Resource, Donation.Amount, Donation.Date
357 FROM Donation
358 JOIN Donor ON Donation.DonorID = Donor.DonorID
359 JOIN Resource ON Donation.ResourceID = Resource.ResourceID;
360
361 -- UPDATE (Update donation amount)
362 UPDATE Donation
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Donor Resource Amount Date
Edhi Foundation Food Pack 500 2025-12-23
Saylani Welfare Medical Kit 150 2025-12-23
Al-Khidmat Tents 50 2025-12-23
Red Crescent Clean Water Bottles 300 2025-12-23
UNICEF Baby Food 100 2025-12-23
WHO Medical Kit 180 2025-12-23
Private Donor A Food Pack 250 2025-12-23
Private Donor B Blankets 120 2025-12-23
NGO Care Sanitation Kits 160 2025-12-23
Local Community Clothes 90 2025-12-23
Result Grid
Form Editor
Field Types
Query Stats
Result 31
Read Only
Output

Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
372    -- ========================================
373
374    -- 1. High-priority victims
375    SELECT Name, PriorityLevel
376    FROM Victim
377    WHERE PriorityLevel = 'High';
378
379    -- 2. Resources about to expire
380    SELECT Type, ExpiryDate
```

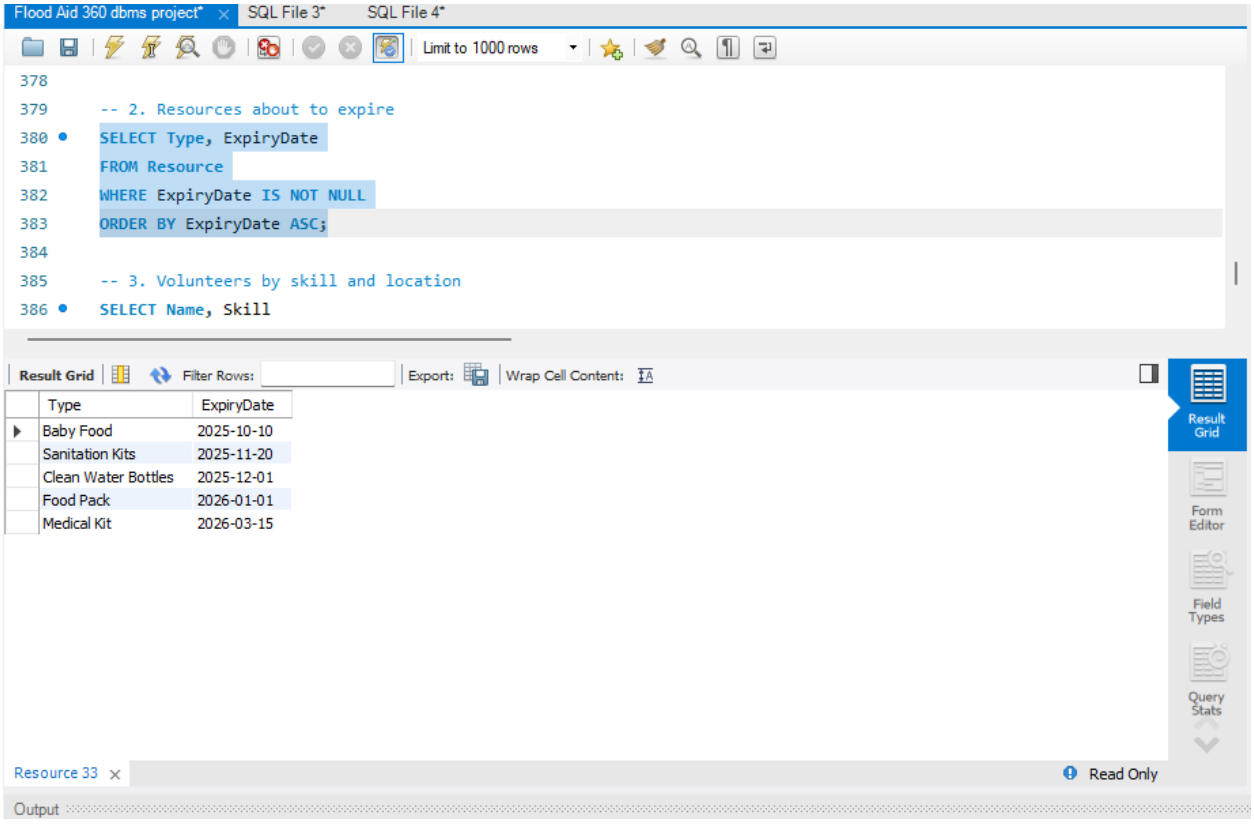
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	PriorityLevel
Ayesha Khan	High
Ahmed Ali	High
Fatima Noor	High
Zain Abbas	High
Hina Raza	High
Nida Farooq	High

Result Grid | Form Editor | Field Types | Query Stats

Victim 32 | Read Only

Output



Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
378
379    -- 2. Resources about to expire
380    SELECT Type, ExpiryDate
381    FROM Resource
382    WHERE ExpiryDate IS NOT NULL
383    ORDER BY ExpiryDate ASC;
384
385    -- 3. Volunteers by skill and location
386    SELECT Name, Skill
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Type	ExpiryDate
Baby Food	2025-10-10
Sanitation Kits	2025-11-20
Clean Water Bottles	2025-12-01
Food Pack	2026-01-01
Medical Kit	2026-03-15

Result Grid | Form Editor | Field Types | Query Stats

Resource 33 | Read Only

Output

Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
384
385     -- 3. Volunteers by skill and location
386     SELECT Name, Skill
387     FROM Volunteer
388     WHERE Skill LIKE '%Medical%'
389     AND Location = 'Swat';
390
391
392     -- 4. Donations summary by donor
```

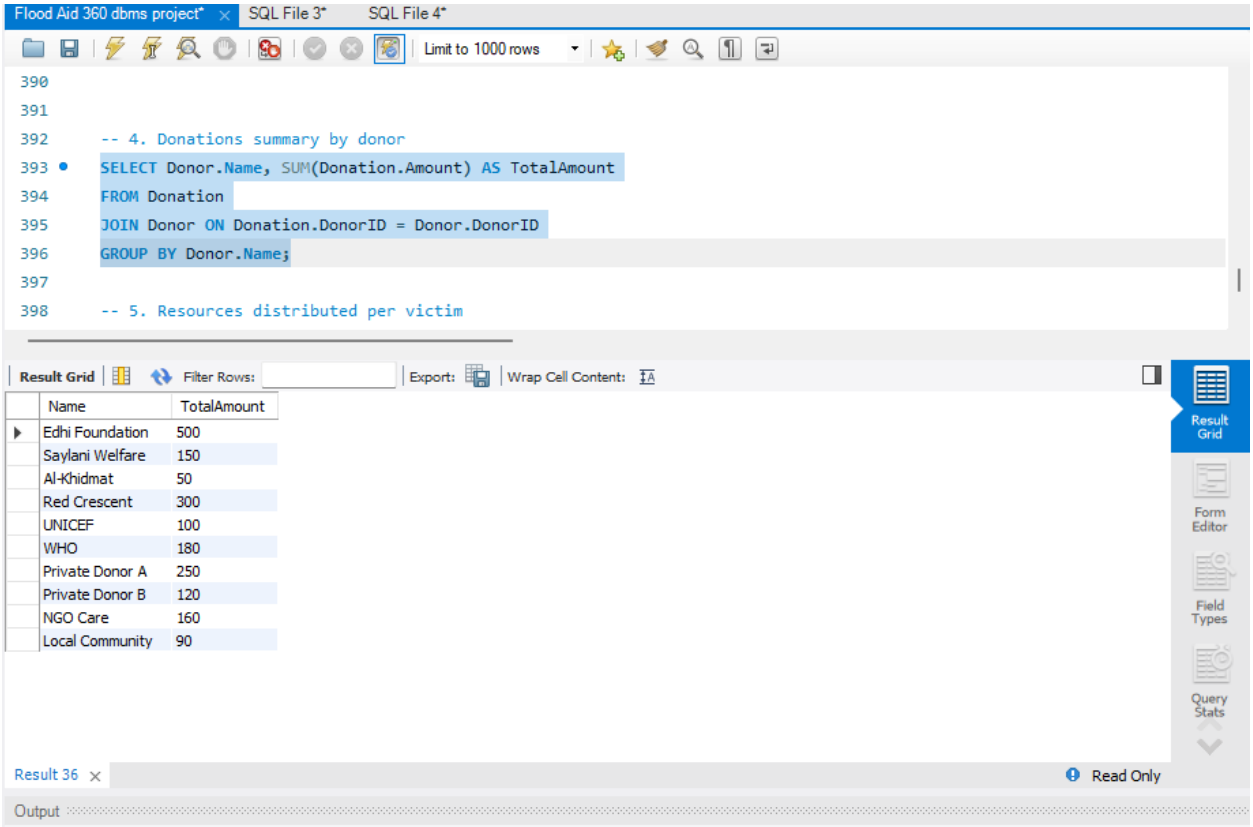
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	Skill
Ali Ahmed	Medical Aid

Result Grid | Form Editor | Field Types | Query Stats

Volunteer 35 | Read Only

Output



Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

Limit to 1000 rows

```
390
391
392     -- 4. Donations summary by donor
393     SELECT Donor.Name, SUM(Donation.Amount) AS TotalAmount
394     FROM Donation
395     JOIN Donor ON Donation.DonorID = Donor.DonorID
396     GROUP BY Donor.Name;
397
398     -- 5. Resources distributed per victim
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	TotalAmount
Edhi Foundation	500
Saylani Welfare	150
Al-Khidmat	50
Red Crescent	300
UNICEF	100
WHO	180
Private Donor A	250
Private Donor B	120
NGO Care	160
Local Community	90

Result Grid | Form Editor | Field Types | Query Stats

Result 36 | Read Only

Output

Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

```
396     GROUP BY Donor.Name;
397
398     -- 5. Resources distributed per victim
399     SELECT Victim.Name AS Victim, Resource.Type AS Resource, SUM(Distribution.Quantity) AS TotalGiven
400     FROM Distribution
401     JOIN Victim ON Distribution.VictimID = Victim.VictimID
402     JOIN Resource ON Distribution.ResourceID = Resource.ResourceID
403     GROUP BY Victim.Name, Resource.Type;
404
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Victim	Resource	TotalGiven
Ayesha Khan	Food Pack	5
Ahmed Ali	Clean Water Bottles	5
Fatima Noor	Medical Kit	1
Bilal Hussain	Blankets	3
Sana Malik	Baby Food	1
Zain Abbas	Tents	1
Hina Raza	Clothes	4
Usman Tariq	Sanitation Kits	2
Nida Farooq	Mosquito Nets	3
Imran Khan	Cooking Utensils	1

Result 37 | Read Only

Output

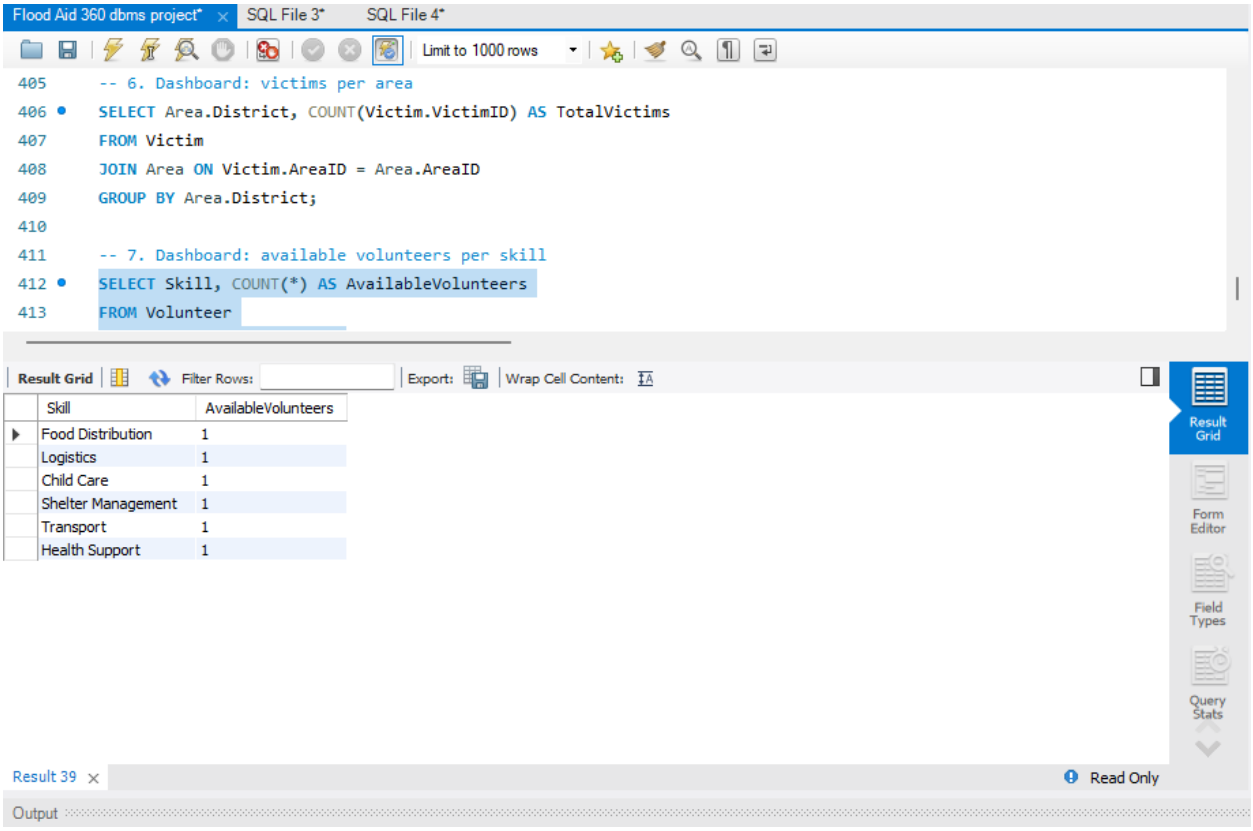
Flood Aid 360 dbms project* | SQL File 3* | SQL File 4*

```
405     -- 6. Dashboard: victims per area
406     SELECT Area.District, COUNT(Victim.VictimID) AS TotalVictims
407     FROM Victim
408     JOIN Area ON Victim.AreaID = Area.AreaID
409     GROUP BY Area.District;
410
411     -- 7. Dashboard: available volunteers per skill
412     SELECT Skill, COUNT(*) AS AvailableVolunteers
413     FROM Volunteer
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

District	TotalVictims
Swat	1
Charsadda	1
Nowshera	1
Dera Ismail Khan	1
Chitral	1
Mansehra	1
Muzaffargarh	1
Thatta	1
Badin	1
Rajpur	1

Result 38 | Read Only


Flood Aid 360 dbms project*
SQL File 3*
SQL File 4*
Limit to 1000 rows
405 -- 6. Dashboard: victims per area
406 SELECT Area.District, COUNT(Victim.VictimID) AS TotalVictims
407 FROM Victim
408 JOIN Area ON Victim.AreaID = Area.AreaID
409 GROUP BY Area.District;
410
411 -- 7. Dashboard: available volunteers per skill
412 SELECT Skill, COUNT(*) AS AvailableVolunteers
413 FROM Volunteer
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
Skill
AvailableVolunteers
Food Distribution 1
Logistics 1
Child Care 1
Shelter Management 1
Transport 1
Health Support 1
Result Grid
Form Editor
Field Types
Query Stats
Result 39
Read Only
Output

Source Code

```
CREATE DATABASE FloodAid360;

USE FloodAid360;

CREATE TABLE Area (

  AreaID INT PRIMARY KEY AUTO_INCREMENT,

  District VARCHAR(100),

  Village VARCHAR(100),

  SeverityLevel VARCHAR(20),

  GPSCoordinates VARCHAR(50)

);

CREATE TABLE Victim (

  VictimID INT PRIMARY KEY AUTO_INCREMENT,

  Name VARCHAR(100),

  Age INT,

  FamilySize INT,

  MedicalNeeds TEXT,

  ShelterStatus VARCHAR(50),

  PriorityLevel VARCHAR(20),

  AreaID INT,

  FOREIGN KEY (AreaID) REFERENCES Area(AreaID)

);
```

```
CREATE TABLE Resource (
  ResourceID INT PRIMARY KEY AUTO_INCREMENT,
  Type VARCHAR(100),
  Quantity INT,
  ExpiryDate DATE,
  Source VARCHAR(100)
);
CREATE TABLE Distribution (
  DistributionID INT PRIMARY KEY AUTO_INCREMENT,
  VictimID INT,
  ResourceID INT,
  Date DATE,
  Quantity INT,
  FOREIGN KEY (VictimID) REFERENCES Victim(VictimID),
  FOREIGN KEY (ResourceID) REFERENCES
Resource(ResourceID)
);
CREATE TABLE Volunteer (
  VolunteerID INT PRIMARY KEY AUTO_INCREMENT,
  Name VARCHAR(100),
  Skill VARCHAR(100),
```

```
  Location VARCHAR(100),
  Availability BOOLEAN
);
CREATE TABLE Donor (
  DonorID INT PRIMARY KEY AUTO_INCREMENT,
  Name VARCHAR(100),
  Contact VARCHAR(100),
  DonationType VARCHAR(50)
);
CREATE TABLE Donation (
  DonationID INT PRIMARY KEY AUTO_INCREMENT,
  DonorID INT,
  ResourceID INT,
  Amount INT,
  Date DATE,
  FOREIGN KEY (DonorID) REFERENCES Donor(DonorID),
  FOREIGN KEY (ResourceID) REFERENCES
Resource(ResourceID)
);
DELIMITER //
CREATE TRIGGER UpdateStockAfterDistribution
```

```
AFTER INSERT ON Distribution

FOR EACH ROW

BEGIN

    UPDATE Resource

    SET Quantity = Quantity - NEW.Quantity

    WHERE ResourceID = NEW.ResourceID;

END;

//

DELIMITER ;

CREATE VIEW HighPriorityRescueBoard AS

SELECT

    V.Name AS Victim_Name,

    A.District,

    A.SeverityLevel AS Area_Severity,

    V.MedicalNeeds,

    V.PriorityLevel AS Victim_Priority

FROM Victim V

JOIN Area A ON V.AreaID = A.AreaID

WHERE V.PriorityLevel = 'High' OR A.SeverityLevel =
'High';

SHOW TABLES;
```

```
INSERT INTO Area (District, Village, SeverityLevel,
GPSCoordinates) VALUES

('Swat', 'Kalam', 'High', '35.4902,72.5796'),

('Charsadda', 'Tangi', 'Medium', '34.1490,71.7420'),

('Nowshera', 'Pabbi', 'High', '34.0113,71.7960'),

('Dera Ismail Khan', 'Kulachi', 'Low',
'31.8315,70.4590'),

('Chitral', 'Booni', 'Medium', '36.3210,72.8780'),

('Mansehra', 'Balakot', 'High', '34.5471,73.3510'),

('Muzaffargarh', 'Kot Addu', 'High',
'30.4697,70.9670'),

('Thatta', 'Makli', 'Medium', '24.7470,67.9230'),

('Badin', 'Talhar', 'High', '24.8845,68.8140'),

('Rajpur', 'Jampur', 'Low', '29.6424,70.5950');

INSERT INTO Victim (Name, Age, FamilySize,
MedicalNeeds, ShelterStatus, PriorityLevel, AreaID)
VALUES

('Ayesha Khan', 35, 5, 'Diabetic', 'Camp', 'High', 1),

('Ahmed Ali', 60, 4, 'Blood Pressure', 'Camp', 'High',
2),

('Fatima Noor', 28, 3, 'Pregnant', 'Shelter Home',
'High', 3),

('Bilal Hussain', 45, 6, 'Asthma', 'Camp', 'Medium',
4),
```

```
('Sana Malik', 19, 2, 'None', 'Relative Home', 'Low',
5),

('Zain Abbas', 7, 5, 'Child Nutrition', 'Camp', 'High',
6),

('Hina Raza', 50, 4, 'Heart Patient', 'Camp', 'High',
7),

('Usman Tariq', 33, 3, 'Injury', 'Shelter Home',
'Medium', 8),

('Nida Farooq', 41, 6, 'Diabetic', 'Camp', 'High', 9),

('Imran Khan', 27, 2, 'None', 'Relative Home', 'Low',
10);

INSERT INTO Resource (Type, Quantity, ExpiryDate,
Source) VALUES

('Food Pack', 500, '2026-01-01', 'NGO'),

('Clean Water Bottles', 1000, '2025-12-01',
'Government'),

('Medical Kit', 200, '2026-03-15', 'NGO'),

('Blankets', 300, NULL, 'Donation'),

('Baby Food', 150, '2025-10-10', 'UNICEF'),

('Tents', 100, NULL, 'Government'),

('Clothes', 400, NULL, 'Public'),

('Sanitation Kits', 250, '2025-11-20', 'WHO'),

('Mosquito Nets', 350, NULL, 'NGO'),

('Cooking Utensils', 180, NULL, 'Donation');
```

```
INSERT INTO Volunteer (Name, Skill, Location,
Availability) VALUES

('Ali Ahmed', 'Medical Aid', 'Swat', TRUE),

('Sara Khan', 'Food Distribution', 'Charsadda', TRUE),

('Usman Riaz', 'Rescue', 'Nowshera', FALSE),

('Hassan Ali', 'Logistics', 'DI Khan', TRUE),

('Areeba Noor', 'Child Care', 'Chitral', TRUE),

('Bilal Shah', 'Medical Aid', 'Mansehra', FALSE),

('Zoya Malik', 'Shelter Management', 'Muzaffargarh',
TRUE),

('Fahad Iqbal', 'Transport', 'Thatta', TRUE),

('Noor Fatima', 'Health Support', 'Badin', TRUE),

('Kamran Akbar', 'Supply Handling', 'Rajpur', FALSE);

INSERT INTO Donor (Name, Contact, DonationType) VALUES

('Edhi Foundation', '042-111-111', 'Food'),

('Saylani Welfare', '021-111-222', 'Medical'),

('Al-Khidmat', '051-111-333', 'Shelter'),

('Red Crescent', '051-222-444', 'Relief Goods'),

('UNICEF', '021-333-555', 'Child Care'),

('WHO', '021-444-666', 'Medical'),

('Private Donor A', '0300-1234567', 'Cash'),

('Private Donor B', '0301-7654321', 'Food'),
```

```
('NGO Care', '042-555-777', 'Sanitation'),

('Local Community', '0302-9998888', 'Clothes');

INSERT INTO Distribution (VictimID, ResourceID, Date,
Quantity) VALUES

(1, 1, CURDATE(), 2),

(2, 2, CURDATE(), 5),

(3, 3, CURDATE(), 1),

(4, 4, CURDATE(), 3),

(5, 5, CURDATE(), 1),

(6, 6, CURDATE(), 1),

(7, 7, CURDATE(), 4),

(8, 8, CURDATE(), 2),

(9, 9, CURDATE(), 3),

(10, 10, CURDATE(), 1);

INSERT INTO Donation (DonorID, ResourceID, Amount,
Date) VALUES

(1, 1, 200, CURDATE()),

(2, 3, 150, CURDATE()),

(3, 6, 50, CURDATE()),

(4, 2, 300, CURDATE()),

(5, 5, 100, CURDATE()),

(6, 3, 180, CURDATE()),
```

```
(7, 1, 250, CURDATE()),

(8, 4, 120, CURDATE()),

(9, 8, 160, CURDATE()),

(10, 7, 90, CURDATE());

SELECT * FROM HighPriorityRescueBoard;

SELECT

    D.Name AS Donor_Name,

    SUM(Don.Amount) AS Total_Items_Donated,

    ROUND((SUM(Don.Amount) / (SELECT SUM(Amount) FROM
Donation) * 100), 2) AS Share_Percentage

FROM Donor D

JOIN Donation Don ON D.DonorID = Don.DonorID

GROUP BY D.Name

ORDER BY Share_Percentage DESC;

SELECT * FROM Area;

SELECT * FROM Victim;

SELECT * FROM Resource;

SELECT * FROM Volunteer;

SELECT * FROM Donor;

SELECT * FROM Distribution;

SELECT * FROM Donation;
```

```
SELECT ResourceID, Type, Quantity, ExpiryDate, Source

FROM Resource;

SELECT Type, ExpiryDate

FROM Resource

WHERE ExpiryDate IS NOT NULL;

SELECT

    Victim.Name AS Victim_Name,

    Resource.Type AS Resource_Type,

    Distribution.Quantity,

    Distribution.Date

FROM Distribution

JOIN Victim ON Distribution.VictimID = Victim.VictimID

JOIN Resource ON Distribution.ResourceID =
Resource.ResourceID;

SELECT Name, Skill, Location

FROM Volunteer

WHERE Availability = TRUE;

SELECT Name

FROM Volunteer

WHERE Skill LIKE '%Medical%'

AND Location = 'Swat';
```

```
SELECT
    Donor.Name AS Donor_Name,
    Resource.Type AS Resource_Type,
    Donation.Amount,
    Donation.Date
FROM Donation
JOIN Donor ON Donation.DonorID = Donor.DonorID
JOIN Resource ON Donation.ResourceID =
Resource.ResourceID;
SELECT Name, PriorityLevel
FROM Victim
WHERE PriorityLevel = 'High';
SELECT Victim.Name, Area.District
FROM Victim
JOIN Area ON Victim.AreaID = Area.AreaID
WHERE Area.District = 'Swat';
SELECT Name, MedicalNeeds
FROM Victim
WHERE MedicalNeeds LIKE '%Diabetic%';
SELECT Name, MedicalNeeds, ShelterStatus
```

```
FROM Victim

WHERE PriorityLevel = 'High';

SELECT Type, Quantity

FROM Resource

WHERE Quantity < 200;

SELECT Name, Skill

FROM Volunteer

WHERE Availability = TRUE;




-- ------------------------------

-- AREA CRUD

-- ------------------------------

-- CREATE (Insert new area)

INSERT INTO Area (District, Village, SeverityLevel,
GPSCoordinates)

VALUES ('New District', 'New Village', 'Medium',
'0.0000,0.0000');



-- READ (View all areas)

SELECT * FROM Area;
```

```
-- UPDATE (Change severity level of an area)

UPDATE Area

SET SeverityLevel = 'Low'

WHERE AreaID = 1;


-- DELETE (Remove an area)

DELETE FROM Area

WHERE AreaID = 11;


-- ----------------------------

-- VICTIM CRUD

-- ----------------------------

-- CREATE (Add new victim)

INSERT INTO Victim (Name, Age, FamilySize,
MedicalNeeds, ShelterStatus, PriorityLevel, AreaID)

VALUES ('Rabia Shaikh', 40, 6, 'Pregnant', 'Camp',
'High', 1);


-- READ (View all victims)

SELECT * FROM Victim;


-- READ with JOIN to show victim's area
```

```
SELECT Victim.Name, Victim.PriorityLevel,
Area.District, Area.Village

FROM Victim

JOIN Area ON Victim.AreaID = Area.AreaID;


-- UPDATE (Change victim shelter)

UPDATE Victim

SET ShelterStatus = 'Hospital'

WHERE VictimID = 1;


-- DELETE (Remove victim)

DELETE FROM Victim

WHERE VictimID = 11;


-- ----------------------------

-- RESOURCE CRUD

-- ----------------------------

-- CREATE (Add new resource)

INSERT INTO Resource (Type, Quantity, ExpiryDate,
Source)

VALUES ('Sanitation Kits', 100, '2026-05-01', 'NGO');
```

```
-- READ (View all resources)
SELECT * FROM Resource;


-- UPDATE (Update resource quantity)
UPDATE Resource
SET Quantity = Quantity + 50
WHERE ResourceID = 1;


-- DELETE (Remove resource)
DELETE FROM Resource
WHERE ResourceID = 11;


-- ------------------------------
-- DISTRIBUTION CRUD
-- ------------------------------
-- CREATE (Distribute resource to a victim)
INSERT INTO Distribution (VictimID, ResourceID, Date,
Quantity)
VALUES (1, 1, CURDATE(), 2);


-- READ (View distributions with victim & resource)
```

```
SELECT Victim.Name AS Victim, Resource.Type AS
Resource, Distribution.Quantity, Distribution.Date

FROM Distribution

JOIN Victim ON Distribution.VictimID = Victim.VictimID

JOIN Resource ON Distribution.ResourceID =
Resource.ResourceID;


-- UPDATE (Update distribution quantity)

UPDATE Distribution

SET Quantity = 5

WHERE DistributionID = 1;


-- DELETE (Remove a distribution record)

DELETE FROM Distribution

WHERE DistributionID = 11;


-- ----------------------------

-- VOLUNTEER CRUD

-- ----------------------------

-- CREATE (Add volunteer)

INSERT INTO Volunteer (Name, Skill, Location,
Availability)
```

```
VALUES ('Adeel Khan', 'Medical Aid', 'Swat', TRUE);


-- READ (View available volunteers)
SELECT Name, Skill, Location
FROM Volunteer
WHERE Availability = TRUE;


-- UPDATE (Update volunteer availability)
UPDATE Volunteer
SET Availability = FALSE
WHERE VolunteerID = 1;


-- DELETE (Remove volunteer)
DELETE FROM Volunteer
WHERE VolunteerID = 11;


-- ----------------------------
-- DONOR CRUD
-- ----------------------------
-- CREATE (Add donor)
INSERT INTO Donor (Name, Contact, DonationType)
```

```
VALUES ('Global Fund', '0300-1112222', 'Medical');


-- READ (View all donors)

SELECT * FROM Donor;


-- UPDATE (Update donor contact)

UPDATE Donor

SET Contact = '0300-9998888'

WHERE DonorID = 1;


-- DELETE (Remove donor)

DELETE FROM Donor

WHERE DonorID = 11;


-- ----------------------------

-- DONATION CRUD

-- ----------------------------

-- CREATE (Record donation)

INSERT INTO Donation (DonorID, ResourceID, Amount,
Date)

VALUES (1, 1, 300, CURDATE());
```

```
-- READ (View donations with donor & resource details)

SELECT Donor.Name AS Donor, Resource.Type AS Resource,
Donation.Amount, Donation.Date

FROM Donation

JOIN Donor ON Donation.DonorID = Donor.DonorID

JOIN Resource ON Donation.ResourceID =
Resource.ResourceID;


-- UPDATE (Update donation amount)

UPDATE Donation

SET Amount = 500

WHERE DonationID = 1;


-- DELETE (Remove donation)

DELETE FROM Donation

WHERE DonationID = 11;


-- ========================================

-- BUSINESS RULE QUERIES

-- ========================================
```

```sql
-- 1. High-priority victims
SELECT Name, PriorityLevel
FROM Victim
WHERE PriorityLevel = 'High';

-- 2. Resources about to expire
SELECT Type, ExpiryDate
FROM Resource
WHERE ExpiryDate IS NOT NULL
ORDER BY ExpiryDate ASC;

-- 3. Volunteers by skill and location
SELECT Name, Skill
FROM Volunteer
WHERE Skill LIKE '%Medical%'
AND Location = 'Swat';


-- 4. Donations summary by donor
SELECT Donor.Name, SUM(Donation.Amount) AS TotalAmount
FROM Donation
```

```
JOIN Donor ON Donation.DonorID = Donor.DonorID

GROUP BY Donor.Name;


-- 5. Resources distributed per victim

SELECT Victim.Name AS Victim, Resource.Type AS
Resource, SUM(Distribution.Quantity) AS TotalGiven

FROM Distribution

JOIN Victim ON Distribution.VictimID = Victim.VictimID

JOIN Resource ON Distribution.ResourceID =
Resource.ResourceID

GROUP BY Victim.Name, Resource.Type;


-- 6. Dashboard: victims per area

SELECT Area.District, COUNT(Victim.VictimID) AS
TotalVictims

FROM Victim

JOIN Area ON Victim.AreaID = Area.AreaID

GROUP BY Area.District;


-- 7. Dashboard: available volunteers per skill

SELECT Skill, COUNT(*) AS AvailableVolunteers

FROM Volunteer
```

```
WHERE Availability = TRUE

GROUP BY Skill;
```

📓 Lessons Learned

Working on the **Flood Aid 360** database system provided us with profound academic and professional insights into the intersection of Software Engineering and humanitarian crisis management. Unlike standard commercial systems, this project required us to prioritize **data accuracy and low-latency retrieval**, as timely information in a flood scenario can literally save lives.

Throughout the development lifecycle, we maintained a culture of open communication. Regular synchronization through MS Teams and university-based peer reviews allowed us to refine our **Entity Relationship Diagram (ERD)** and identify potential bottlenecks in resource distribution logic. This project served as a practical laboratory for mastering database tools for schema design, normalization (up to 3NF), and the implementation of advanced SQL objects like **Automated Triggers and Views**.

One of the most significant lessons we learned was that technical efficiency must be balanced with **human-centric logic**. For example, designing the `PriorityLevel` attribute taught us how to translate complex humanitarian needs into quantifiable data. By fostering a collaborative environment built on mutual respect and shared responsibility, we minimized design conflicts and ensured that our technical solution remained aligned with real-world disaster relief requirements.

"In disaster management, collaboration is the bridge between chaotic data and organized relief; it begins with a shared vision and succeeds through a unified, data-driven effort."

🎯 Conclusion

The **Flood Aid 360** system offers a robust, scalable, and transparent platform that centralizes the complex logistics of flood relief operations. By integrating victim registration, donor management, and volunteer coordination into a single relational framework, the system bridges the gap between those in need and those providing aid.

Key features such as **automated stock tracking via triggers**, **priority-based rescue dashboards**, and **geo-coordinated area monitoring** ensure that relief efforts are both efficient and accountable. The parent/child relationship in education apps is here replaced by the **Donor-Recipient relationship**, where the admin panel serves as a command center for monitoring real-time distribution analytics and resource expiry dates.

Ultimately, this project demonstrates how database technology can be leveraged responsibly to manage large-scale emergencies, promote transparency in NGO operations, and maintain a secure, high-integrity environment for sensitive victim data. **Flood Aid 360** stands as a proof-of-concept with strong potential for real-world implementation, providing a blueprint for future digital transformations in the humanitarian sector