Part 3: SQL Programming

1. **Data Retrieval**:

   SELECT * FROM Community;

   SELECT * FROM WaterSource WHERE QualityRating < 3.0;

   SELECT * FROM PurificationProject WHERE EndDate IS NULL;

   SELECT * FROM AccessRecord WHERE AccessFrequency < 5;

2. **Data Analysis**:
   -- Average quality rating of water sources by community

   ```
   SELECT Community.Name, AVG(WaterSource.QualityRating) AS AvgQuality
   FROM WaterSource
   JOIN Community ON WaterSource.CommunityID = Community.CommunityID
   GROUP BY Community.Name;
   ```

   -- Total budget of ongoing purification projects by community

   ```
   SELECT Community.Name, SUM(PurificationProject.Budget) AS TotalBudget
   FROM PurificationProject
   JOIN WaterSource ON PurificationProject.WaterSourceID =
   WaterSource.WaterSourceID
   JOIN Community ON WaterSource.CommunityID = Community.CommunityID
   WHERE PurificationProject.EndDate IS NULL
   GROUP BY Community.Name;
   ```