I'll help you create a comprehensive plan for the Credit Card Statement Generator project. Let's break down what you need to accomplish.

**Understanding the Project**

This project involves building a credit card statement generator application that:

1. Connects to a SQL Server database
2. Extracts and processes customer credit card data
3. Generates PDF statements matching a specific bank's format
4. Implements data validation and error handling
5. Includes testing with comprehensive test cases

**Project Steps**

**1. Research Phase (Week 1)**

First, you need to research a specific bank's statement format. According to the assignment, you should be assigned one of these banks:

* Maybank (Malaysia)
* CIMB (Malaysia/Singapore)
* HSBC (Global)
* DBS (Singapore)
* Standard Chartered (Global)
* OCBC (Singapore)
* Public Bank (Malaysia)
* RHB (Malaysia)

I'll develop a plan assuming you'll be assigned a specific bank. The project inputs and outputs for each phase are:

**2. Database Design and Setup (Beginning of Week 2)**

**Inputs:**

* Bank statement samples
* Understanding of required data fields

**Outputs:**

* Database schema SQL scripts
* Tables for:
  + Customers (name, address, contact info)
  + Accounts (account numbers, limits, etc.)
  + Transactions (date, description, amount, etc.)
  + Rewards/Points
  + Statement periods
* Sample test data

**3. Core Application Development (Weeks 2-3)**

**Inputs:**

* Database schema
* Bank statement format requirements
* Programming language of your choice
* PDF generation library

**Outputs:**

* Application source code with:
  + Database connection module
  + Data processing logic
  + Financial calculations (balances, minimum payments, etc.)
  + PDF generation module
  + Error handling
  + Multi-language support

**4. Testing (Week 4)**

**Inputs:**

* Completed application
* Test data in database

**Outputs:**

* At least 15 documented test cases covering:
  + Different balance amounts
  + Various transaction volumes
  + Language settings
  + Edge cases (statement periods, unusual transactions)
  + Error scenarios
* Test results documentation
* Bug fixes and optimizations

**5. Finalization and Presentation (Final Week)**

**Inputs:**

* Fully tested application
* Test results

**Outputs:**

* Complete source code with comments
* Database scripts
* Test case documentation
* User guide
* Sample PDF statements
* 10-minute presentation

**Technical Implementation Details**

Let me provide more specific input/output details for the core functionality:

**Database Connection Module**

**Inputs:**

* Connection string to SQL Server
* Query parameters (customer ID, statement period)

**Outputs:**

* Retrieved customer data
* Account information
* Transaction list for the period
* Rewards/points information

**Financial Calculation Module**

**Inputs:**

* Previous balance
* Transaction list
* Interest rates
* Payment information

**Outputs:**

* Current balance
* Minimum payment amount
* Due dates
* Interest charges
* Total debits/credits
* Available credit

**PDF Generation Module**

**Inputs:**

* Customer data
* Account data
* Calculated financial data
* Transaction list
* Reward points
* Bank-specific template information
* Language preference

**Outputs:**

* Professional PDF document with:
  + Bank logo and branding
  + Customer information section
  + Account summary
  + Transaction details (with proper categorization)
  + Payment information
  + Rewards summary
  + Terms and conditions
  + Multi-page support with correct pagination
  + Bilingual text where required

**Sample Code Structure**

I'll outline a possible structure using Python as an example:

credit\_card\_statement\_generator/

├── database/

│ ├── \_\_init\_\_.py

│ ├── connection.py

│ ├── schema.sql

│ └── test\_data.sql

├── models/

│ ├── \_\_init\_\_.py

│ ├── customer.py

│ ├── account.py

│ └── transaction.py

├── processors/

│ ├── \_\_init\_\_.py

│ ├── financial\_calculator.py

│ └── data\_processor.py

├── pdf\_generator/

│ ├── \_\_init\_\_.py

│ ├── template\_manager.py

│ ├── pdf\_builder.py

│ └── templates/

│ └── [bank\_name].py

├── utils/

│ ├── \_\_init\_\_.py

│ ├── config.py

│ ├── error\_handler.py

│ └── language.py

├── tests/

│ ├── test\_database.py

│ ├── test\_calculations.py

│ ├── test\_pdf\_generation.py

│ └── test\_cases.md

├── main.py

└── README.md

Would you like me to provide more specific details on any particular part of this project? For example, I could create sample database schema, code examples for the PDF generation, or testing strategies.