Bank Balance Sheet Application

Background Information

bank's balance sheet contains many accounts which contain one or more product offerings.

- There are a variety of account types such as Retail, Wholesale and Internal accounts.
- Every product offering has a variable GBP value as well as a risk rating (See *Table 1*).
- **Wholesale** accounts can only be opened with a minimum balance of 35,000 GBP (across all products).
- The Tier 1 Capital product can only be held by an **Internal** account.

Product name	Risk Rating	Product Type
Cash	2	Asset
Bond	1	Asset
Collateralised Loan	3	Liability
Tier 1 Capital	0	Asset

Table 1: Product offerings

To be completed

Provide a working source code which will build an in-memory representation of a banking balance sheet and compute the calculations below, no GUI is required.

1. Design and implement an in-memory data model to store the accounts and products representing a bank's holdings and populate it with data that adheres to the following specifications:
    a. An **Internal** account containing 10 billion GBP of **Tier 1 capital**.
    b. An **Internal** account holding 10 **Collateralised loans** each one of an amount between 100,000 and 200,000 GBP.
    c. 10 **Wholesale** accounts, each holding a cash product of value between 10,000 and 100,000 GBP, also containing two bond products with values in the same range.
2. Demonstrate a reusable method which calculates the banks Net Worth value. (the sum of assets value minus the sum of liabilities value) in GBP.
3. Demonstrate a reusable method which calculates the banks Net Worth GBP value using the sum of *Simple Risk Weighted Assets* **(SRWA)** values as an input. Use the formula: ***SRWA(value, rating) = value – ((rating*0.05)*value)***