Group 1	**Student Report Generator** Design a program with: • A **base class** Person storing name and age. • A **derived class** Student adding marks. • A **function template** findAverage<T>(T a, T b, T c) to compute average marks. • **Overloaded function** display() to show either basic info or full details. • Handle invalid marks (negative or >100) using **exceptions**. • Store valid student records in a **file** named report.txt.

Group 2	**Employee Salary Calculator**
	Create a program where:
	• Base class Employee holds id and name.
	• Derived class Payroll adds basic, hra, da.
	• Overload a **function calculate()**:
	  ○ calculate(int basic, int hra)
	  ○ calculate(double basic, double hra, double da)
	• Use a **template function** bonus<T>(T salary) to add a 10% bonus.
	• Throw an **exception** if any salary component is negative.
	• Save final salaries to a **file salary_data.txt**.

Group 3	**Library Management System** Implement: • Base class Book (title, author), derived class EBook (file size). • Overload showDetails() to display summary vs. full info. • Template function maxValue<T>(T a, T b) to find the thicker or larger file. • Throw an **exception** if file size or page count ≤ 0. • Write and read all book info to/from **library.txt**.
Group 4	**Banking Transaction Logger** Develop: • Class Account with accNo, name, balance. • Derived class SavingsAccount with interestRate. • Overload deposit() for int and double amounts. • Template function calculateInterest<T> to compute updated balance. • Raise an **exception** for deposit ≤ 0 or withdrawal > balance. • Log every transaction to a **file transactions.txt**.

Group 5	**Product Inventory Manager**
	Design:
	• Base class Product with id, name, and price.
	• Derived class Electronic with warranty period.
	• Overloaded update():
	  ○ update(double newPrice)
	  ○ update(int newWarranty, double newPrice)
	• Use a **template** compare<T>(T a, T b) to find the costlier product.
	• Throw exception if price < 0.
	• Save product data to and read from **inventory.txt**.