

Project 10
CECS277 Fall 2021
Due Monday November 29th 11:59 pm
Submit project10.zip folder before the deadline

Please make sure to follow the naming convention for your project. If your project does not run because of the naming issues, you won't receive any credit. Project10 will count as 5% towards the final project.

Project10.zip should include **project10 Package** and **project10.jar**

Project10 package will include

CreditCardDemo.java ➔ **Client (main method goes in here)**

CreditCard.java

AmericanExpressCreditCard.java

DiscoverCreditCard.java

VisaCreditCard.java

CardFactory.java

DiscoverFactory.java

VisaFactory.java

AmericanExpressFactory.java

Plagiarism/Academic Integrity Policy

Cheating and plagiarism will not be tolerated in this course. Students are to do their own assignments. Cases of copying, cheating, and plagiarism of assignments and/or tests, and any other violations, will be pursued to the maximum extent permitted by the University, which can include expulsion from the University. This applies equally to students who intentionally assist other students in academic dishonesty.

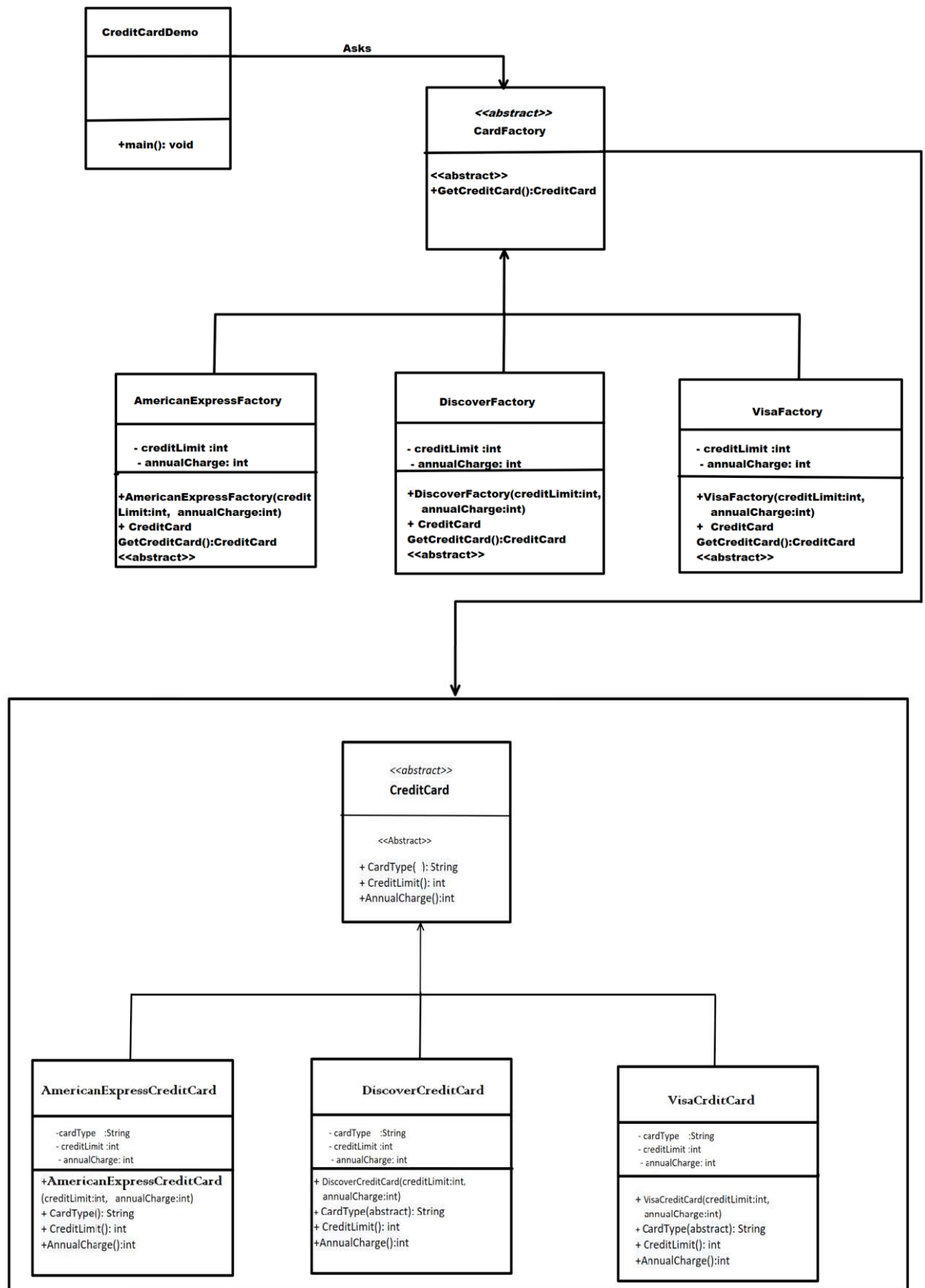
Any form of plagiarism or cheating will result in a failing grade on the assignment (at a minimum) and could result in a failing grade in the course or even university disciplinary action.

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[Academic Information and Regulations-Cheating and Plagiarism](#)

Project Description:

Assume we have three different credit cards: Visa, Discover, and AmericanExpress options and all of them implement abstract class CreditCard. You need to instantiate one of these classes, but you don't know which of them, it depends on the user. This is a perfect scenario for the Factory Method design pattern. Please see the UML diagram and sample output below for details of how to implement this design.



UML DIAGRAM

Sample output:

In **CreditCardDemo**: You should be creating an instance of **CardFactory** and based on user input you will instantiate the right credit card. Values for credit limit and annual Charges is hard coded. Program is looping until user enters quit.

```
Welcome to Banking
=====

AmericanExpress
Visa
Discover
Quit

Enter the card type you would like to visit: visa

Your card details are below :

Card Type:Visa
Credit Limit: $100000
Annual Charge:$0

AmericanExpress
Visa
Discover
Quit

Enter the card type you would like to visit: americanExpress

Your card details are below :

Card Type:AmericanExpress
Credit Limit: $500000
Annual Charge:$100

AmericanExpress
Visa
Discover
Quit

Enter the card type you would like to visit: discover

Your card details are below :

Card Type:Discover
Credit Limit: $50000
Annual Charge:$75

AmericanExpress
Visa
Discover
Quit

Enter the card type you would like to visit: quit
Exiting the program..Good bye
```