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Work on project. Stage 1/4: Card anatomy

Project: [Simple Banking System](#)

Hard 28 minutes

387 users solved this problem. Latest completion was about 5 hours ago.

Description

We live busy lives these days. Between work, chores, and other things in our to-do lists, it can be tough to catch your breath and stay calm. Credit cards are one of the things that save us time, energy, and nerves. From not having to carry a wallet full of cash to consumer protection, cards make our lives easier in many ways. In this project, you will develop a simple banking system with a database.

If you're curious about business, technology, or how things around you work, you'll probably enjoy learning how credit card numbers work. These numbers ensure easy payments, and they also help prevent payment errors and fraud. Card numbers are evolving, and they might look different in the near future.

Let's take a look at the anatomy of a credit card:



The very first number is the **Major Industry Identifier (MIID)**, which tells you what sort of institution issued the card.

- 1 and 2 are issued by airlines
- 3 is issued by travel and entertainment
- 4 and 5 are issued by banking and financial institutions
- 6 is issued by merchandising and banking
- 7 is issued by petroleum companies
- 8 is issued by telecommunications companies
- 9 is issued by national assignment

In our banking system, credit cards should begin with 4.

The first six digits are the **Issuer Identification Number (IIN)**. These can be used to look up where the card originated from. If you have access to a list that provides detail on who owns each IIN, you can see who issued the card just by reading the card number.

Here are a few you might recognize:

- Visa: 4****
- American Express (AMEX): 34**** or 37****
- Mastercard: 51**** to 55****

In our banking system, the IIN must be 400000.

The seventh digit to the second-to-last digit is the **customer account number**. Most companies use just 9 digits for the account numbers, but it's possible to use up to 12. This means that using the current algorithm for credit cards, the world can issue about a trillion cards before it has to change the system.

We often see 16-digit credit card numbers today, but it's possible to issue a card with up to 19 digits using the current system. In the future, we may see longer numbers becoming more common.

In our banking system, the customer account number can be any, but it should be unique. And the whole card number 16-digit length.

The very last digit of a credit card is the **check digit** or **checksum**. It is used to validate the credit card number using the Luhn algorithm, which we will explain in the next stage of this project. For now, the checksum can be any digit you like.

Instruction

You should allow customers to create a new account in our banking system.

Once the program starts, you should print the menu:

```
1 1. Create an account
2 2. Log into account
3 0. Exit
```

If the customer chooses 'Create an account', you should generate a new card number which satisfies all the conditions described above. Then you should generate a PIN code that belongs to the generated card number. A PIN code is a sequence of any 4 digits. PIN should be generated in a range from 0000 to 9999.

37 / 37 Prerequisites


- ✓ Units of information Stage 1
- ✓ Introduction to OOP Stage 1
- ✓ Introduction to Java Stage 1 5 ★
- ✓ Basic literals Stage 1 5 ★
- ✓ Overview of the basic program Stage 1 5 ★

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If the customer chooses 'Log into account', you should ask them to enter their card information. Your program should store all generated data until it is terminated so that a user is able to log into any of the created accounts by a card number and its pin. You can use an array to store the information.

After all information is entered correctly, you should allow the user to check the account balance; right after creating the account, the balance should be 0. It should also be possible to log out of the account and exit the program.

Example

The symbol  represents the user input. Notice that it's not a part of the input.


```
1 1. Create an account
2 2. Log into account
3 0. Exit
4 >1
5
6 Your card has been created
7 Your card number:
8 4000004938320895
9 Your card PIN:
10 6826
11
12 1. Create an account
13 2. Log into account
14 0. Exit
15 >2
16
17 Enter your card number:
18 >4000004938320895
19 Enter your PIN:
20 >4444
21
22 Wrong card number or PIN!
23
24 1. Create an account
25 2. Log into account
26 0. Exit
27 >2
28
29 Enter your card number:
30 >4000004938320895
31 Enter your PIN:
32 >6826
33
34 You have successfully logged in!
35
36 1. Balance
37 2. Log out
38 0. Exit
39 >1
40
41 Balance: 0
42
43 1. Balance
44 2. Log out
45 0. Exit
46 >2
47
48 You have successfully logged out!
49
50 1. Create an account
51 2. Log into account
52 0. Exit
53 >0
54
55 Bye!
```

 Report a typo


 Write a program

Code Editor [IDE](#)

IDE / Checking the plugin's status

 Solve in IDE

[View solution \(💎100\)](#)

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