

12 – CARD CHECKSUM

When you receive a card from the bank, various rules are followed to ensure that the 16-digit number across the front is valid. In this challenge you will follow the rules and determine where the card comes from and whether the number itself is valid.

Task 1: Is the number valid?

Check the card number against the following rules:

Rule	If error
Must be 16 digits	Print 'too short' or 'too long', ask again
Must have no letters	Print 'Card number must be just numbers', ask again

Task 2: Identify the Personal Account Number (PAN)

Digit 7 to 15 are the PAN.

Task 3: Separate the checksum digit

The last digit is the checksum

Task 4: Who issued the card?

Use the following table of rules to determine the issuer:

Leading digits	Issuer
34 or 37	American Express
Others beginning with 3	JCB
4	Visa
51 to 55	MasterCard

Task 5: Is the card number real?

To verify that a card is real we use the Luhn algorithm

(https://en.wikipedia.org/wiki/Luhn_algorithm).

Valid cards to use: 4111111111111111, 5555555555554444