task 2

In this exam, I will discuss modern payment systems and card technologies. Payment cards are an important part of today's financial world, and their development has been closely connected to the history of economy and technology. In this essay, I will answer three questions:

1. Why do modern payment cards use a chip instead of a magnetic stripe?

2. What are EMV Certificates and why are they important for payment protection?

3. What attacks exist against payment cards?

Modern cards use a chip rather than a magnetic stripe because chips are much more secure. Magnetic stripes can be easily copied with simple skimming devices, which makes fraud possible. A chip, on the other hand, contains encrypted information and verifies the user's identity in a more personal and private way. This makes it much harder for criminals to clone a card.

Historically, the first bank card machine appeared in London in 1967, and smart cards were introduced in the 1970s. By the 1980s, card systems became more popular and essential in everyday financial life. ATMs were one of the biggest innovations at that time. Over time, magnetic cards lost popularity as chip-based systems proved to be safer and more reliable.

EMV stands for Europay, Mastercard, and Visa. EMV certificates are global standards for secure payment systems. They provide a common structure for transactions involving credit, debit, and prepaid cards with microchips.

The certificates ensure that the communication between the card and the payment terminal is secure and encrypted. Without such standards, the payment system would be more chaotic and vulnerable to fraud. EMV is therefore essential for protecting people's privacy and maintaining trust in global financial systems.

Even with stronger technology, attacks still exist against payment cards. Exampe card not present fraud whem criminals use stolen card information to make purchases online without the physical card.

So now let's look around multi-factor authentication (MFA) in bankin. MFA is used to probide two or more forms of vertification to access their accounts. Common factors are these: something you know (password or pin). Second is something you have (smartphone or security card) and third is something you are like biometric data like fingerprint. Bank often use MFA when logging in to online accounts confirming transactions or resetting passwords. MFA makes paymet securiy muhch harder for attackers to access accounts.

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