OVERVIEW
The aim of the Bachelor thesis was to investigate the password creation habits and patterns of Estonian-speaking users. The study provides recommendations for avoiding predictable passwords and strengthening security practices. Estonian user passwords leaked online were collected, and a survey mapped password creation habits. A website was developed to test if a password appears in a 50-million-entry attack dictionary. The full dictionary (50 GB) helps identify vulnerable passwords and patterns for security testing.

LEAKED PASSWORDS
The main source for the leaked passwords was a 41 GB data dump from 2017 that contains 184,019 unique .ee domain passwords. Altogether, 187,223 leaked Estonian passwords were collected. However, based on length and pattern analysis, this data is outdated. It can be said that only a few environments allow the use of an 8-character lowercase password, such as renerene, jalgpall, paunuvere, or kutsikad.

SURVEY
There were 202 people’s responses used for the analysis. The most popular topics for choosing passwords were:
- Hobbies
- Names
- Websites or pets
There is a recognizable pattern among the respondents: they tend to choose a single capital letter at the beginning and a single number or symbol (., ! ? # _ @) at the end.

THE FIRST AND THE LAST CHARACTER OF THE PASSWORDS

LENGTH OF UNIQUE PASSWORDS

RECOMMENDATIONS FOR CREATING STRONG PASSWORD
- Only you need to know your password - don’t reveal it.
- Use unique password patterns.
- Avoid using personal (hobbies, family) or the website information you are creating the password for.
- The minimum length should be 12 characters.
- Use a passphrase instead - it is longer and easier to remember.

SCREENSHOT OF SITE DETECTING LEAKED PASSWORD

WEBSITE PAROOLIKRATT
The website is built using FastAPI, Docker, and PostgreSQL technologies to serve requests, following RESTful principles. Within a week, around 400 inputs were collected. Based on the website input, the most popular patterns were:
- 4 lowercase letters
- 8 lowercase letters
- 5 or 6 lowercase letters
The patterns, length, and first-last letter analysis reveal that overall cybersecurity knowledge is quite good, as people don’t trust websites like Paroolikratt.

TEST YOUR PASSWORD AND CREATE A PASSPHRASE

https://Paroolikratt.ee

Anett Päristmaa, BSc, Computer Science
Supervisor: Alo Peets
Related code and materials: https://linktr.ee/anettparismaa

https://Paroolikratt.ee