Practical Work 2 - TCP

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Pockémon Octogone édition

Outline

- **Objective**: Create a program who uses TCP sockets inJava
- **Project Goal**: Learn how to use socekts in Java

Key Features

- **Pokédex** Add and use any Pokémon (Yes, even Sephiroth)
- **Teams**: Make a team from the Pokémons available
- **Trainer** : Create your trainer
- **BATTLES !**: 1v1 a friend via Internet

How did we split the work

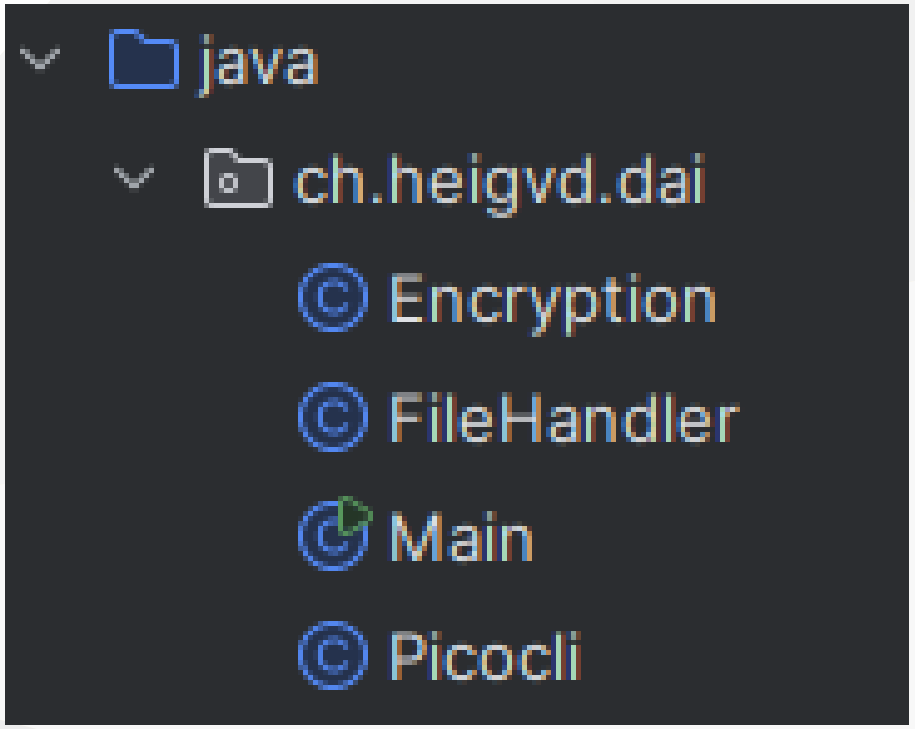
Dani : picoCLI, I/O, documentation
Nicolas : Encryption / Decryption

GitHub

- Branchs
- Issues
- Pull Requests

Structure

- Main.java
- 3 Classes
  - Encryption
  - FileHandler
  - Picocli



What we used

- **Language**: Java
- **Tools**: Maven, Git, picoCLI

picoCLI

```java
import picocli.CommandLine.Option;
import picocli.CommandLine.Command;


@Command(name = "PicoEncrypt", mixinStandardHelpOptions = true, version = "PicoEncrypt 1.0", description = "Simple encrypt/decrypt app with picco")
public class Picocli implements Runnable {

    @Option(names = {"-s", "--srcFile"},
            description = "Path to the source file.\n"
                    + "Example: /path/to/myfile.txt")
    String srcFile;

    ...

    @Option(names = {"-k", "--key"},
            description = "Key for the encryption/decryption.\n"
                    + "Default : 1")
    String key;

    @Override
    public void run() {
        // Magic happens here
    }
```

Encryption

Textual files:

- Cesar encryption
- Number encryption
- Emoji encryption

```
private String CesarEncryption(Boolean isDecrypting) {
    StringBuilder encryptedText = new StringBuilder();

    int shift = key.charAt(0) - 'a';
    if (shift < 0) shift = 0;

    for (int i = 0; i < text.length(); i++) {
        char c = text.charAt(i);

        // Shift all characters (including accents and symbols)
        if (isDecrypting) {
            c = (char) (c - shift);
        } else {
            c = (char) (c + shift);
        }
        encryptedText.append(c);
    }
    return encryptedText.toString();
}
```

Docker:

- Xor encryption
- Cesar encryption
- Xor + Cesar Encryption

```
private int BinXorEncryption(int byteData) {
    int intKey = Integer.parseInt(key);
    return byteData ^ intKey;
}
```

Demonstration

Questions ?

Thank you for your attention