

File Encryption using 2D Arrays

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@version Java 14

Description

The application created for this assessment is capable of encrypt and decrypt text using the ADFGVX cypher algorithm with Polybius square.

To compile and run

From console at src file directory:

```
javac -d out src/ie/atu/sw/*.java src/ie/atu/sw/exceptions/*.java  
java -cp ./out ie.atu.sw.Runner
```

Features

This application was designed to use 3 main file directories:

1. *Plain Text File Directory.*
2. *Encrypted File Directory.*
3. *Decrypted File Directory.*

They are supposed to be used as follows:

- **When encrypting text files:**

Plain text files present in the *Plain Text File Directory* will be read and their encrypted version will be saved in the *Encrypted File Directory*.

- **When decrypting text files:**

Encrypted text files present in the *Encrypted File Directory* will be read and their decrypted version will be saved in the *Decrypted File Directory*.

Runner class is used to run the application. It calls the method start in the Menu class.

Menu class is used to display options, such as: set file directory paths, set key word and perform file encryption/decryption.

Parser class is used to validate file directory paths, load your files and write their encrypted/decrypted version to the appropriate output file directory. It is also responsible for calling the encrypt or decrypt methods of a Cypher object for each line read from the files. There is handling for custom exceptions to allow in-app resiliency for missing fields.

Cypher class is used to encrypt/decrypt text performing the ADFGVX cipher algorithm with the Polybius square. The use of the key word for columnar transposition is also responsibility of this class.

The progress bar was used to track how long encryption/decryption takes to run on all files present in the input file directory.