

Paul Fitch

IDE: VS Code 1.78

Relevant extensions:

- Debugger for java
- Extension pack for java
- Language support for java
- Project manager for java
- Test runner for java

Security Rule Violations:

Item 1

Ln23:

Rule 49. MSC05 - J: Do Not Exhaust Heap Space

The provided code does not place any limits on memory required to run the program.

In addition, the variable "filename" is not set as a constant. While this doesn't break any rules, it could potentially lead to problems later in the SDLC.

Fix: implement file size limit. Read the byte size of the file, and terminate the program if the supplied file exceeds 8000000 bytes.

Item 2

Ln 48:

Rule 00. IDS08 - J: Sanitize Untrusted Data Included in a Regular Expression

The provided code does not perform an input validation on the data read from the EmailAdresses.txt file.

Fix: validate proper email address format when read from file. Regex can be used to evaluate each email contained in the file for proper formatting.

Item 3

Ln 57:

Rule 13. [FIO02-J: Detect and handle file-related errors](#)

An error is present when files are not supplied as an argument.

Fix: catch the exception thrown (ArrayIndexOutOfBoundsException) and safely exit the program when no file is supplied as a command line argument.

Other fixes:

1. directory of EmailAdresses.txt is not specified. The corrected code includes a working path to the file.
2. Scanner can be more memory efficient than buffered reader. Switched to scanner

Once all fixes are made, the final output is:

```
Email john@umgc.edu is valid
Email fred@umgc.edu is valid
Email susan@umgc.edu is valid
Email donna@umgc.edu is valid
Email javier@umgc.edu is valid
Email jessie@umgc.edu is valid
Email laura@umgc.edu is valid
Email tina@umgc.edu is valid
Email todd@umgc.edu is valid
Email ed@umgc.edu is valid
PS C:\Users\budar\Documents\umgcU
```

Test 1: file size greater than 8,000,000 bytes

```
File size of Dungeons & Dragons vs. Rick and Morty.pdf too large. Terminati
ng prgram.
PS C:\Users\budar\Documents\umgcUndergrad\4_summer2023\sdev425\week1\assign
ment\fitcPaul_Assignment_1>
```

Test 2: input improper formatted email address in EmailAddresses.txt

```
Email john@umgc.edu is valid
Email fred@umgc.edu is valid
Email susan@umgc.edu is valid
Email donna@umgc.edu is valid
Email javier@umgc.edu is valid
Email jessie@umgc.edu is valid
Email laura@umgc.edu is valid
Email tina@umgc.edu is valid
Email todd@umgc.edu is valid
Email ed@umgc.edu is valid
Email invalid email is invalid
PS C:\Users\budar\Documents\umgcU
ment\fitcPaul_Assignment_1>
```

Test 3: remove command line argument

```
Command line argument not supplied. Program terminating
PS C:\Users\budar\Documents\umgcUndergrad\4_summer2023\s
```

Hello World output:

```
Hello World!
31-05-2023 23:36
PS C:\Users\budar\
```