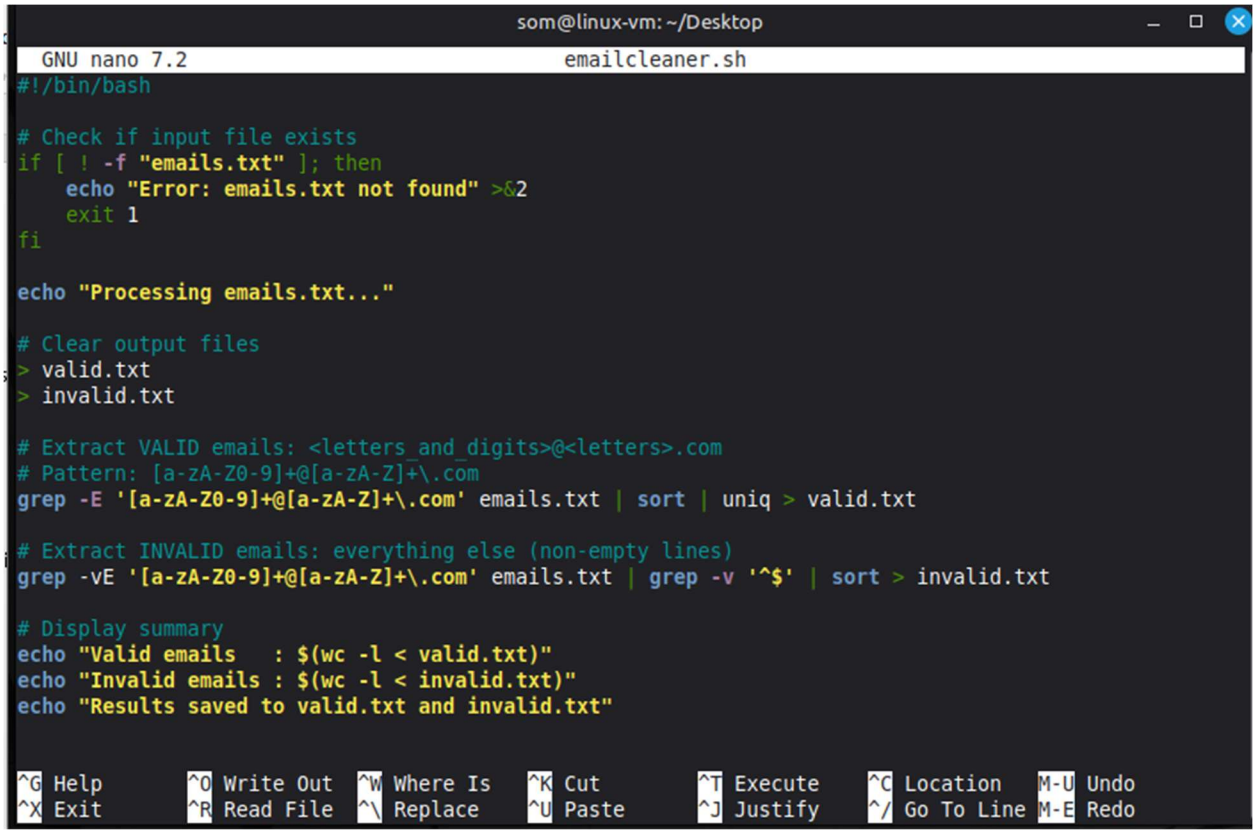
Question 4 (2024eb03003):

Please find screenshot of shell script below and attaching **emailcleaner.sh** script to GitHub repository:



Testing the emailcleaner.sh Script

Create a file **emails.txt**

```
cat > emails.txt << 'EOF'
user1@company.com
test123@company.com
invalid-email
user@company.com
123test@example.com
no_at_sign.com
user.name@sub.company.com
test@company.com
duplicate@company.com
test@company.com
```

user@company.org
plain_text
another@company.com
EOF

```
som@linux-vm:~/Desktop$ cat > emails.txt << 'EOF'
user1@company.com
test123@company.com
invalid-email
user@company.com
123test@example.com
no_at_sign.com
user.name@sub.company.com
test@company.com
duplicate@company.com
test@company.com
user@company.org
plain_text
another@company.com
EOF
som@linux-vm:~/Desktop$
```

Test Case:

./emailcleaner.sh

```
som@linux-vm:~/Desktop$ ./emailcleaner.sh
Processing emails.txt...
Valid emails   : 8
Invalid emails : 4
Results saved to valid.txt and invalid.txt
som@linux-vm:~/Desktop$
```

1. grep -E '[a-zA-Z0-9]+@[a-zA-Z]+\.com' matches exactly:
    - [a-zA-Z0-9]+ = 1+ letters/digits before @
    - @ = literal @
    - [a-zA-Z]+ = 1+ letters after @
    - \.com = literal ".com"
2. sort | uniq removes duplicates from valid emails
3. grep -vE '[a-zA-Z0-9]+@[a-zA-Z]+\.com' gets everything that doesn't match the valid pattern
4. grep -v '^$' removes empty lines from invalid.txt
5. Redirection > valid.txt and > invalid.txt stores results

The regex strictly enforces <letters_and_digits>@<letters>.com - no other domains, no dots in domain, etc., exactly as specified.

Requirement validated:

The **emails.txt** file contained 13 total entries. After processing, 8 unique valid email addresses were identified, 4 were invalid, and 1 duplicate (test@company.com) was removed from the valid list.