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Step1: Decide a signature that can indicate that the file is infected
Step2: Designing a function that can identify all the uninfected files
Step3: Design an encryption and decryption function. In my case, I did it using shift cipher using +1 offset
Step 4: Prepend the virus code in the uninfected file as a string like :
code=""""
#encrypted infected code goes here
""""
Step5: Add decryption method to infected file. Also add code to Execute the string as code using the exec() method

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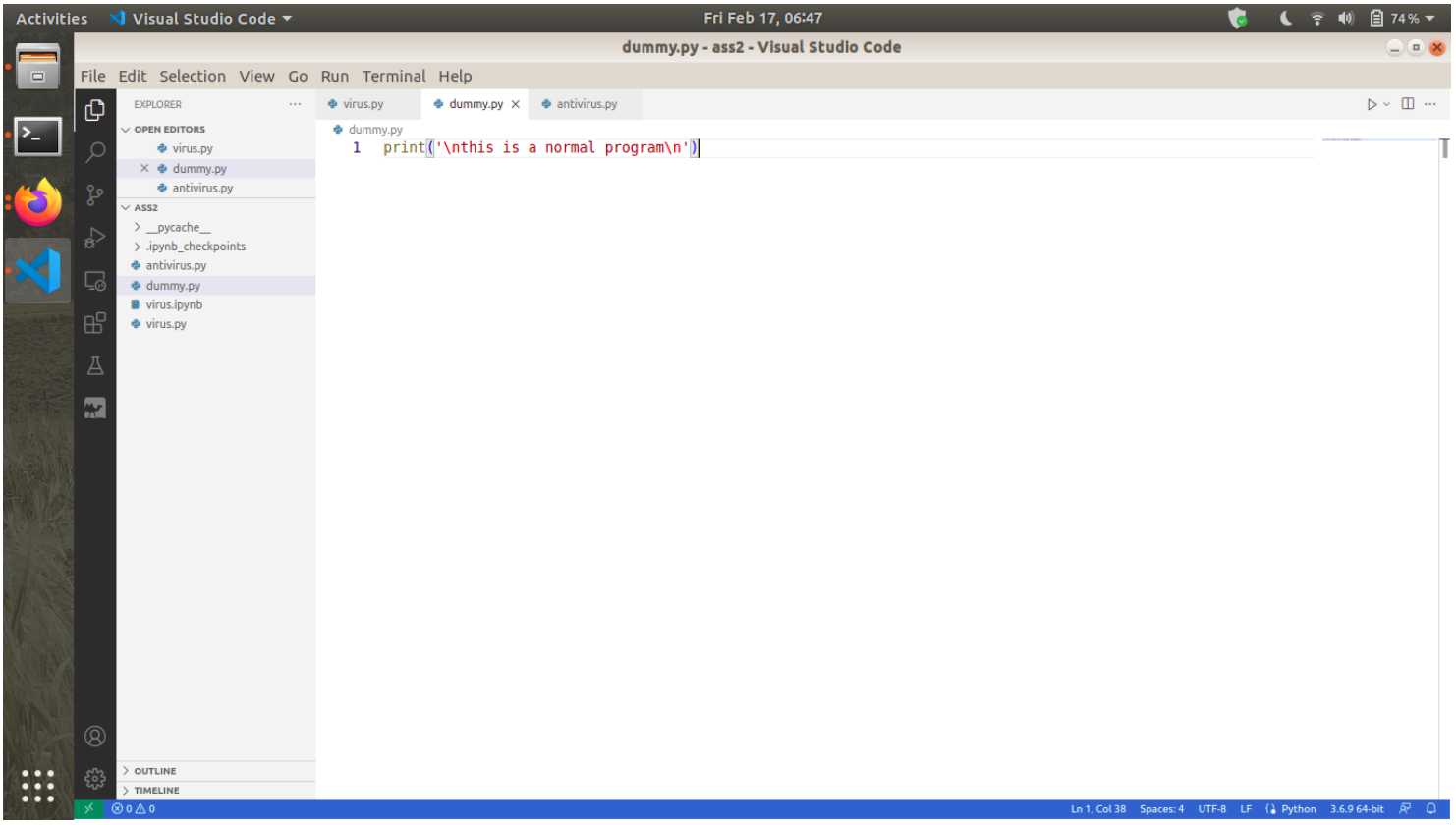
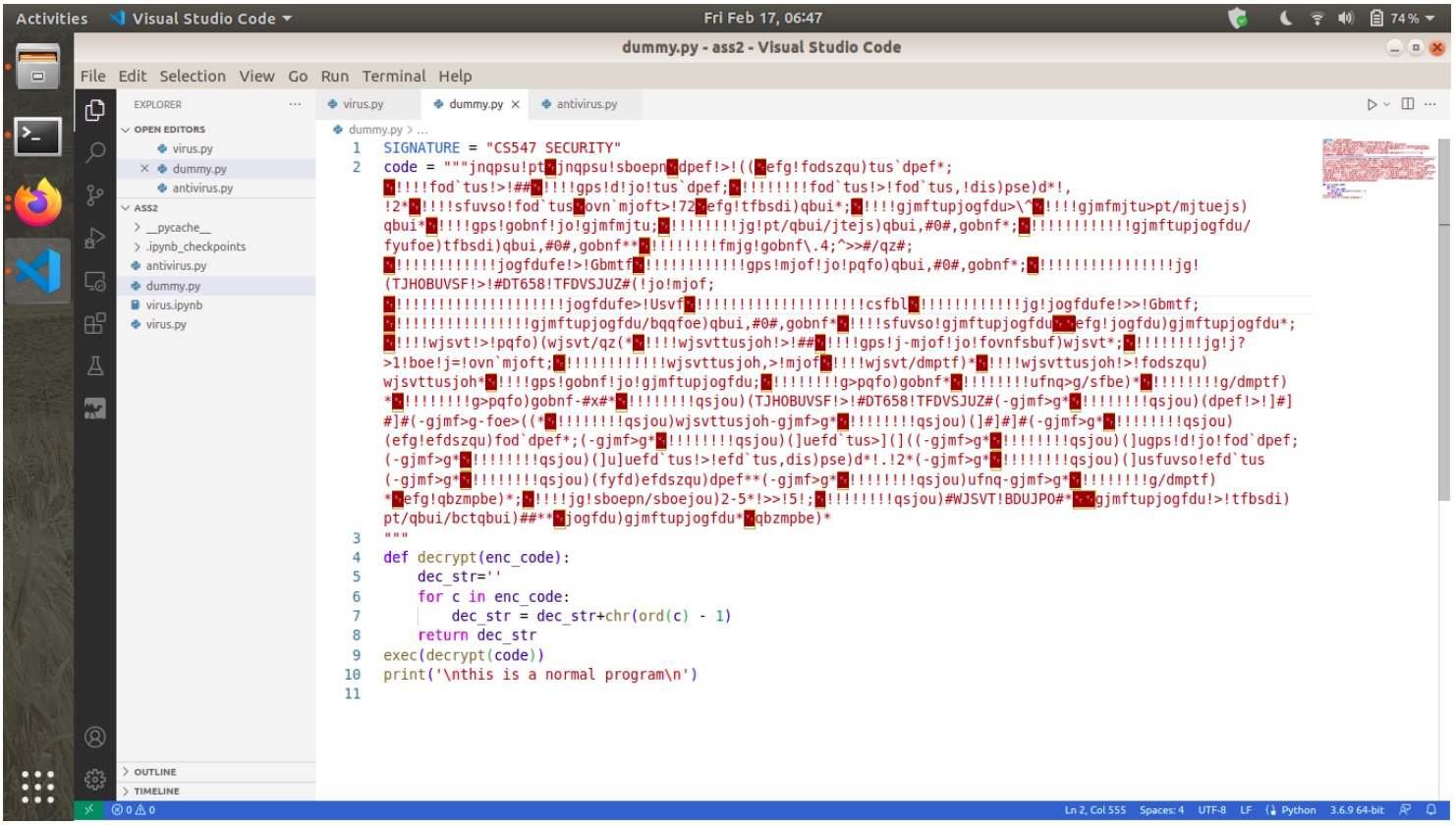
Demonstration:
Initial dummy file :



Infected dummy file:



Execution results :

Running the dummy program, then running the virus to infect the dummy program, then demonstrating the antivirus usage.

```
abhinav@abhinav-ThinkPad-E490:~/Desktop/acads/computersecurity/ass2$ python dummy.py

this is a normal program
```

```
abhinav@abhinav-ThinkPad-E490:~/Desktop/acads/computersecurity/ass2$ python virus.py
```

```
abhinav@abhinav-ThinkPad-E490:~/Desktop/acads/computersecurity/ass2$ python dummy.py

this is a normal program

abhinav@abhinav-ThinkPad-E490:~/Desktop/acads/computersecurity/ass2$ python dummy.py

this is a normal program

abhinav@abhinav-ThinkPad-E490:~/Desktop/acads/computersecurity/ass2$ python dummy.py
VIRUS ACTION

this is a normal program
```

```
abhinav@abhinav-ThinkPad-E490:~/Desktop/acads/computersecurity/ass2$ python antivirus.py
suspected malware
```