

After executing  
`python3 ccdupe_2.py test_data`  
Potential duplicates (100 bytes):

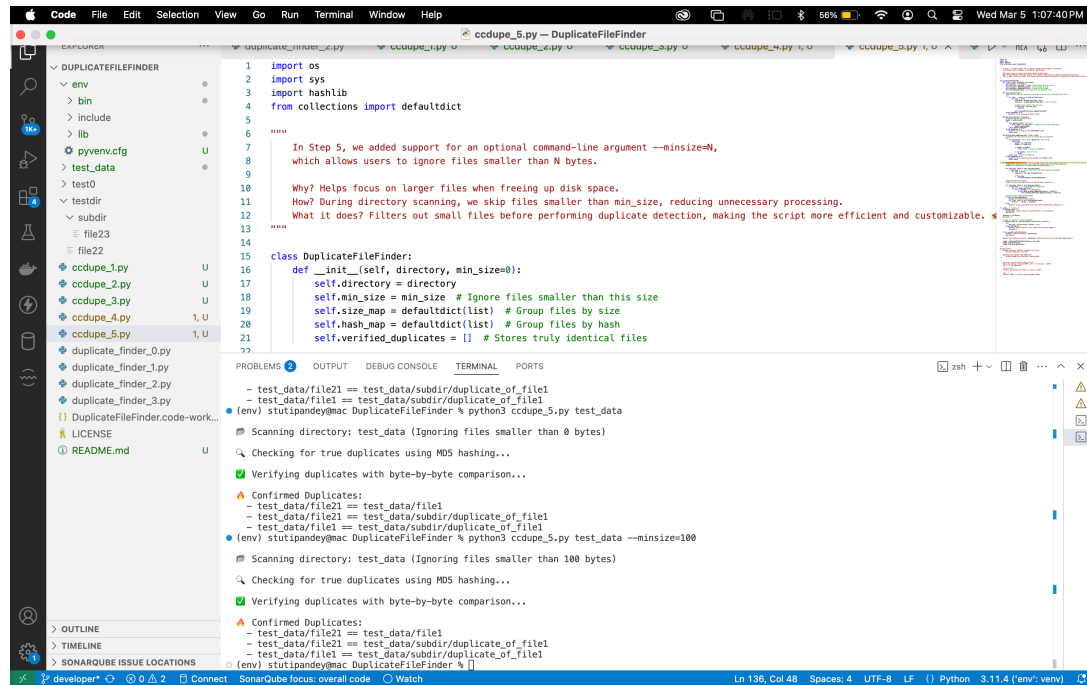
```
111     finder = DuplicateFileFinder(directory)
112     finder.scan_directory()
113     finder.find_true_duplicates()
114
115     """
116 Running Script:
117 python3 ccdupe_4.py test_data
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After executing  
`python3 ccdupe_3.py test_data`

Copied file 21 from file 20.  
Listing down duplicates based on Hashing



Currently no file with size > 1000 bytes. So going with default.



```
1 import os
2 import sys
3 import hashlib
4 from collections import defaultdict
5
6
7 In Step 5, we added support for an optional command-line argument --minsize=N,
8 which allows users to ignore files smaller than N bytes.
9
10 Why? Helps focus on larger files when freeing up disk space.
11 How? During directory scanning, we skip files smaller than min_size, reducing unnecessary processing.
12 What it does? Filters out small files before performing duplicate detection, making the script more efficient and customizable.
13
14
15 class DuplicateFinder:
16     def __init__(self, directory, min_size=0):
17         self.directory = directory
18         self.min_size = min_size # Ignore files smaller than this size
19         self.size_map = defaultdict(list) # Group files by size
20         self.hash_map = defaultdict(list) # Group files by hash
21         self.verified_duplicates = [] # Stores truly identical files
22
23
24 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
25
26 - test_data/file21 == test_data/subdir/duplicate_of_file1
27 - test_data/file1 == test_data/subdir/duplicate_of_file1
28 (env) stutipandey@mac DuplicateFinder % python3 ccdupe_5.py test_data
29 Scanning directory: test_data (Ignoring files smaller than 0 bytes)
30 Checking for true duplicates using MD5 hashing...
31 Verifying duplicates with byte-by-byte comparison...
32 Confirmed Duplicates:
33 - test_data/file21 == test_data/file1
34 - test_data/file21 == test_data/subdir/duplicate_of_file1
35 - test_data/file1 == test_data/subdir/duplicate_of_file1
36 (env) stutipandey@mac DuplicateFinder % python3 ccdupe_5.py test_data --minsize=100
37 Scanning directory: test_data (Ignoring files smaller than 100 bytes)
38 Checking for true duplicates using MD5 hashing...
39 Verifying duplicates with byte-by-byte comparison...
40 Confirmed Duplicates:
41 - test_data/file21 == test_data/file1
42 - test_data/file21 == test_data/subdir/duplicate_of_file1
43 - test_data/file1 == test_data/subdir/duplicate_of_file1
44 (env) stutipandey@mac DuplicateFinder %
```

After executing  
**python3 ccdupe\_6.py test\_data**

User is prompted to ask which file they want to delete.

After selection, the file is deleted. Verified using 'ls' command.

