**Experiment 3**

Program 1: Create 500 txt files in a directory. Every file contains 20,000 lines and every line contains a random string of length 20 characters.

Code:

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| *# create 500 files*  **import** **string**  **import** **random**  n\_files = 500  n\_lines = 20000  str\_size = 20  letters = string.ascii\_letters  **for** i\_file **in** range(n\_files):  *# create new file*  **with** open(f'{i\_file + 1}.txt', 'w') **as** output\_file:    *# write 20,000 lines*  **for** i\_line **in** range(n\_lines):    *# create a random string of size 20*  random\_string = ''.join(random.choice(letters) **for** i **in** range(str\_size))  output\_file.write(f'{random\_string}**\n**') |

Program 2: Calculate the execution time to convert all the files to uppercase . Save the results in a csv file as given below.

No. of Files,Time Taken (sec)

100, 50

200, 70

300, 85

400, 90

500, 110

Code:

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| --- |
| **import** **os**  **import** **time**  **import** **csv**  test\_files = os.listdir('./')  output\_file = 'q2\_op.csv'  test\_indices = [100, 200, 300, 400, 500]  time\_taken = {}  start\_time = time.time()  **for** idx, filename **in** enumerate(test\_files):  **if** filename[-1] != 't' :  **continue**    **with** open(filename, 'r+') **as** input\_file:  file\_content = input\_file.read().split('**\n**')    *# uppercase each line of the file*  file\_content = [string.upper() **for** string **in** file\_content]  *# place the input\_ptr to the start of the input file*  input\_file.seek(0)  **for** line **in** file\_content:  input\_file.write(f'{line}**\n**')  **if** (idx + 1) **in** test\_indices:  time\_taken[idx + 1] = (time.time() - start\_time)    *# write the dict to csv file*  **with** open(output\_file, 'w', newline='') **as** output\_file:    writer = csv.writer(output\_file)    writer.writerow(['Number of Files', 'Time Taken(s)'])    writer.writerows(time\_taken.items()) |

Output:

