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import java.io.File;
import java.io.FileWriter;
import java.io.IOException;
import java.util.ArrayList;
import java.util.Collections;
import java.util.Iterator;
import java.util.Scanner;

public class ReadFilesFromFolder {
        public ArrayList<String> getAllFiles(File folder) {
                String temp = "";

                ArrayList<String> fileList = new ArrayList<String>();

                File[] fileObjects = folder.listFiles();

                for (File fileEntry : fileObjects) {
                        if (fileEntry.isDirectory()) {
                                getAllFiles(fileEntry);
                        } else {
                                if (fileEntry.isFile()) {
                                        temp = fileEntry.getName();
                                        fileList.add(temp);
                                }
                        }
                }
                return fileList;
        }

        public void showFiles() {
                System.out.println("************************************");
                System.out.println("Here is the list of available files:");
                System.out.println("************************************");
                ArrayList<String> fileList = getAllFiles(MainMenu.folderObject);
                Iterator<String> it = fileList.iterator();
                while (it.hasNext()) {
                        System.out.println(it.next());
                }
        }

        public void sortFiles() {

System.out.println("********************************************");
                System.out.println("Here is the list in reverse alphabetic order:");

System.out.println("********************************************");
                ArrayList<String> fileList = getAllFiles(MainMenu.folderObject);
                Collections.reverse(fileList);
                Iterator<String> it = fileList.iterator();
                while (it.hasNext()) {
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                        System.out.println(it.next());
                }
        }

        public void addNewFile() {
                boolean success = false;

                Scanner sc = new Scanner(System.in);

                System.out.println("Enter file name to be created: ");
                String filename = sc.nextLine();

                File myFile = new File(MainMenu.folderPath, filename);

                if (myFile.exists()) {
                        System.out.println("File already exists");
                } else {
                        try {
                                success = myFile.createNewFile();
                        } catch (IOException e) {
                                e.printStackTrace();
                        }
                        if (success) {
                                try {
                                        FileWriter myWriter = new
FileWriter(MainMenu.folderPath + "\\" + filename);
                                        System.out.println("Enter the content of the
file: ");
                                        String content = sc.nextLine();
                                        myWriter.write(content);
                                        myWriter.close();

                                        System.out.printf("Successfully created new
file: " + filename);
                                } catch (Exception e) {
                                        System.out.println("File i/o exception");
                                }

                        } else {
                                System.out.printf("Failed to create new file: %s%n",
myFile);
                        }
                }
        }

        public void removeFile() {
                showFiles();
                Scanner sc = new Scanner(System.in);
                System.out.println("\nEnter a file name to remove from the given
list or press ENTER go to Main menu: ");
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                String filename = sc.nextLine();
                if(!filename.equals("")) {
                        File file = new File(MainMenu.folderPath + "\\" + filename);
                        if (file.delete()) {
                                System.out.println("\nFile deleted
successfully\n\nHere is the updated list:\n");
                                showFiles();
                        } else {
                                System.out.println("Failed to delete the file");
                        }
                }

        }

        public void searchFile() {
                ArrayList<String> fileList = getAllFiles(MainMenu.folderObject);
                Scanner sc = new Scanner(System.in);
                System.out.println("\nEnter a file name to search: ");
                String filename = sc.nextLine();

                Object[] arr = fileList.toArray();

                int searchResult = binarySearch(arr, filename);
                if(searchResult == -1) {
                        System.out.println("File not found");
                } else {
                        System.out.println("File found !!!");
                }
        }

        public int binarySearch(Object[] arr, String x) {
                int l = 0, r = arr.length - 1;
                while (l <= r) {
                        int m = l + (r - l) / 2;

                        int res =
x.toLowerCase().compareTo(((String)arr[m]).toLowerCase());

                        // Check if x is present at mid
                        if (res == 0)
                                return m;

                        // If x greater, ignore left half
                        if (res > 0)
                                l = m + 1;

                        // If x is smaller, ignore right half
                        else
                                r = m - 1;
                }
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                return -1;
        }
}
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