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import java.io.File;
import java.io.IOException;
import java.util.Arrays;
import java.util.Scanner;

public class VirtualKey {
   static String DIRECTORY;
   File folder_name;

   public VirtualKey() {
      DIRECTORY = System.getProperty("user.dir");
      folder_name = new File(DIRECTORY+"/files");
      if (!folder_name.exists())
         folder_name.mkdirs();
      System.out.println("DIRECTORY : "+ folder_name.getAbsolutePath());
   }

   private static final String WELCOME_PROMPT =
         "Welcome";

   private static final String MAIN_MENU_PROMPT =
         "\nMAIN MENU - Select any of the following: \n"+
               "1 -> List files in directory\n"+
               "2 -> Add, Delete or Search\n"+
               "3 -> Exit Program";

   private static final String SECONDARY_MENU_PROMPT =
         "   \nSelect any of the following: \n"+
               "   a -> Add a file\n"+
               "   b -> Delete a file\n"+
               "   c -> Search a file\n"+
               "   d -> GoBack";

   void showPrimaryMenu() {
      System.out.println(MAIN_MENU_PROMPT);
      try{
         Scanner scanner = new Scanner(System.in);
         int option = scanner.nextInt();
         switch (option){
            case 1 : {
               showFiles();
               showPrimaryMenu();
            }
            case 2 : {
               showSecondaryMenu();
            }
            case 3 : {
               System.out.println("Thank You");
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            System.exit(0);
        }
        default: showPrimaryMenu();
      }
    }
    catch (Exception e){
      System.out.println("Please enter 1, 2 or 3");
      showPrimaryMenu();
    }
}

void showSecondaryMenu() {
    System.out.println(SECONDARY_MENU_PROMPT);
    try{
      Scanner scanner = new Scanner(System.in);
      char[] input = scanner.nextLine().toLowerCase().trim().toCharArray();
      char option = input[0];

      switch (option){
        case 'a' : {
          System.out.print(" Adding a file...Please Enter a File Name : ");
          String filename = scanner.next().trim().toLowerCase();
          addFile(filename);
          break;
        }
        case 'b' : {
          System.out.print("Deleting a file...Please Enter a File Name : ");
          String filename = scanner.next().trim();
          deleteFile(filename);
          break;
        }
        case 'c' : {
          System.out.print(" Searching a file...Please Enter a File Name : ");
          String filename = scanner.next().trim();
          searchFile(filename);
          break;
        }
        case 'd' : {
          System.out.println("Going Back to MAIN menu");
          showPrimaryMenu();
          break;
        }
        default : System.out.println("Please enter a, b, c or d");
      }
      showSecondaryMenu();
    }
    catch (Exception e){
      System.out.println("Please enter a, b, c or d");
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            showSecondaryMenu();
        }
    }

    void showFiles() {
        if (folder_name.list().length==0)
            System.out.println("The folder is empty");
        else {
            String[] list = folder_name.list();
            System.out.println("The files in "+ folder_name +" are :");
            Arrays.sort(list);
            for (String str:list) {
                System.out.println(str);
            }
        }
    }

    void addFile(String filename) throws IOException {
        File filepath = new File(folder_name +"/"+filename);
        String[] list = folder_name.list();
        for (String file: list) {
            if (filename.equalsIgnoreCase(file)) {
                System.out.println("File " + filename + " already exists at " + folder_name);
                return;
            }
        }
        filepath.createNewFile();
        System.out.println("File "+filename+" added to "+ folder_name);
    }

    void deleteFile(String filename) {
        File filepath = new File(folder_name +"/"+filename);
        String[] list = folder_name.list();
        for (String file: list) {
            if (filename.equals(file) && filepath.delete()) {
                System.out.println("File " + filename + " deleted from " + folder_name);
                return;
            }
        }
        System.out.println("Delete Operation failed. FILE NOT FOUND");
    }

    void searchFile(String filename) {
        String[] list = folder_name.list();
        for (String file: list) {
            if (filename.equals(file)) {
                System.out.println("FOUND : File " + filename + " exists at " + folder_name);
                return;
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            }
        }
        System.out.println("File NOT found (FNF)");
    }

    public static void main(String[] args) {
        System.out.println(WELCOME_PROMPT);
        VirtualKey menu = new VirtualKey();
        menu.showPrimaryMenu();
    }
}
```