package file\_exp;

import java.io.File;

import java.io.IOException;

import java.util.Scanner;

import java.util.regex.Pattern;

import java.util.ArrayList;

import java.util.Arrays;

import java.util.Collections;

import java.util.List;

public class File\_Explorer {

public static void main(String[] args) {

System.out.println("--------------------------------------Welcome to the File Explorer Application by Company Lockers Pvt. Ltd.-----------------------------------------");

System.out.println("\n>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> This Project is developed by : Kapil Jain <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<");

while(true)

{

int choice;

System.out.println("\nPlease choose from the below options:");

System.out.println("1. Enter the Directory Path");

System.out.println("2. Exit Application");

System.out.print("Enter your Numeric choice----->");

choice=integerchoice();

if(choice==0)

{

System.out.println("Invalid Input! Please Enter a valid Numeric Input and Try Again!");

continue;

}

System.out.println("You chose the option --> "+choice);

if(choice==1)

{

directory();

}

else if(choice==2)

{

System.out.println("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Thank you for using the Application \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.exit(0);

}

else

{

System.out.println("Option doesn't exist! Please Try Again!");

}

}

}

static int integerchoice()

{

int i=0;

String s="";

Scanner sc=new Scanner(System.in);

try {

s=sc.nextLine();

}catch(Exception e) {

return(0);

}

if(s.matches("[0-9]"))

{

i=Integer.valueOf(s);

return(i);

}

else

{

return(0);

}

}

static String stringreader()

{

String input="";

Scanner sc=new Scanner(System.in);

try {

input=sc.nextLine();

}catch(Exception e)

{

System.out.println("Invalid Input!");

}

return(input);

}

static void directory()

{

while(true)

{

String directory="";

File input\_directory = null;

System.out.println("\nEnter the Directory Path you want to work in.");

System.out.print("Enter Here---->");

directory=stringreader();

input\_directory=new File(directory);

if(input\_directory.canRead())

{

MainMenu(input\_directory,directory);

}

else

{

System.out.println("\nThe directory path is either Invalid or doesn't exist.");

System.out.println("Please Try Again!");

continue;

}

}

}

static void MainMenu(File input\_file,String directory)

{

while(true)

{

int choice;

System.out.println("\n-------------------------------------------------------------Main Menu---------------------------------------------------------------\n");

System.out.println("You are in Directory--> "+"[ "+input\_file+" ]\n");

System.out.println("Choose an option among the following to perform in this Directory");

System.out.println("1. Display the files in this Directory in Ascending order");

System.out.println("2. Add, Delete or Search a File in this Directory");

System.out.println("3. Go to a Different Directory");

System.out.println("4. Exit the Application");

System.out.print("Enter your Numeric choice----->");

choice=integerchoice();

if(choice==0)

{

System.out.println("Invalid Input! Please Enter a valid Numeric Input and Try Again!");

continue;

}

System.out.println("You chose the option --> "+choice);

if(choice==1)

{

displayAscending(input\_file,directory);

}

else if(choice==2)

{

operations(input\_file,directory);

}

else if(choice==3)

{

break;

}

else if(choice==4)

{

System.out.println("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Thank you for using the Application \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.exit(0);

}

else

{

System.out.println("Option doesn't Exist! Please Try Again!");

}

}

}

static void displayAscending(File input\_file,String directory)

{

File[] list\_of\_files = input\_file.listFiles();

Arrays.sort(list\_of\_files);

int x=1;

if(list\_of\_files.length==0)

System.out.println("\n\t["+directory+"]---> This Directory is an Empty Directory!\n");

else

{

System.out.println("\nAll Files in Directory : "+directory+" are:\n");

System.out.printf("|%-4s| |%-70s| |%-20s| |%-40s ","No.","File Name (Ascending)","File Type","File Size");

System.out.println();

for(int i=0;i<140;i++)

System.out.print("-");

System.out.println();

for(File s:list\_of\_files)

{

long size=0;

if(s.isDirectory()==false)

size=s.length();

else

size=getFolderSize(s);

String sizetype="";

if(0<=size&&size<1024)

{

sizetype="Bytes";

}

else if(1024<=size&&size<1024\*1024)

{

size=size/1024;

sizetype="KB";

}

else if(1024\*1024<=size&&size<1024\*1024\*1024)

{

size=size/1024/1024;

sizetype="MB";

}

else if(1024\*1024\*1024<=size)

{

size=size/1024/1024/1024;

sizetype="GB";

}

String name=s.getName();

String[] type=name.split("[.]");

if(s.isDirectory())

{

System.out.printf("|%-4s| |%-70s| |%-20s| |%-40s ",x+++".",name,"Directory / Folder",size+" "+sizetype);

System.out.println();

}

else

{

if(type.length>1)

{

System.out.printf("|%-4s| |%-70s| |%-20s| |%-40s ",x+++".",name,type[type.length-1],size+" "+sizetype);

System.out.println();

}

else

{

System.out.printf("|%-4s| |%-70s| |%-20s| |%-40s ",x+++".",name,"No Type",size+" "+sizetype);

System.out.println();

}

}

}

}

}

static long getFolderSize(File dir)

{

File[] files=dir.listFiles();

long size=0;

if(files==null)

{

return(dir.length());

}

else

{

for(File e:files)

{

if(e.isDirectory())

{

size=size+getFolderSize(e);

}

else

{

size=size+e.length();

}

}

return(size);

}

}

static void operations(File input\_file,String directory)

{

while(true)

{

int choice;

System.out.println("\n------------------------------------------------------------------Directory Operations-------------------------------------------------------------\n");

System.out.println("You are in Directory :- [ "+directory+" ]\n");

System.out.println("Choose the option to perform in this Directory");

System.out.println("1. Add a File");

System.out.println("2. Delete a File");

System.out.println("3. Search a File");

System.out.println("4. Go back to the Main Menu");

System.out.println("5. Exit the Application");

System.out.print("Enter your Numeric choice----->");

choice=integerchoice();

if(choice==0)

{

System.out.println("Invalid Input! Please Enter a valid Numeric Input and Try Again!");

continue;

}

System.out.println("You chose the option --> "+choice);

if(choice==1)

{

addfile(input\_file,directory);

}

else if(choice==2)

{

deletefile(input\_file,directory);

}

else if(choice==3)

{

String[] listoffiles = input\_file.list();

if(listoffiles.length==0)

{

System.out.println("\nSorry! ["+directory+"] is an Empty Directory!");

System.out.println("\tNo Files to Search in this directory!");

}

else

{

List<File> searchresults = new ArrayList<File>();

String keyname="",input;

System.out.println("------------------------------------------------------------------Search Console-------------------------------------------------------------");

System.out.println("\nYou are in Directory :- [ "+directory+" ]\n");

System.out.println("Enter the File name that you want search in this directroy");

System.out.print("Enter Here---->");

input=stringreader();

keyname=Pattern.quote(input);

searchresults=searchfile(input\_file,keyname);

if(searchresults.isEmpty())

{

System.out.println("\nSorry! No Files or Folders Found with the name \""+input+"\" inside the directory!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

else

{

System.out.println("\nDeep Search Operation Performed over all files and sub-folders of Directory [ "+directory+" ]");

System.out.println("\n"+" ( "+searchresults.size()+" ) "+" Search Results Found :-\n");

System.out.printf("\n|%-3s| |%-40s| |%-30s| |%-70s| |%-10s| ","No.","File Name","File Type","File Location","File Size");

System.out.println();

String name;

int x=1;

for(File e:searchresults)

{

long size=0;

if(e.isDirectory()==false)

size=e.length();

else

size=getFolderSize(e);

String sizetype="";

if(0<=size&&size<1024)

{

sizetype="Bytes";

}

else if(1024<=size&&size<1024\*1024)

{

size=size/1024;

sizetype="KB";

}

else if(1024\*1024<=size&&size<1024\*1024\*1024)

{

size=size/1024/1024;

sizetype="MB";

}

else if(1024\*1024\*1024<=size)

{

size=size/1024/1024/1024;

sizetype="GB";

}

name=e.getName();

String[] type=name.split("[.]");

if(e.isDirectory())

{

System.out.printf("|%-3s| |%-40s| |%-30s| |%-70s| |%-10s| ",x+++".",e.getName(),"Directory / Folder",e.getAbsolutePath(),size+" "+sizetype);

System.out.println();

}

else

{

if(type.length>1)

{

System.out.printf("|%-3s| |%-40s| |%-30s| |%-70s| |%-10s| ",x+++".",e.getName(),type[type.length-1],e.getAbsolutePath(),size+" "+sizetype);

System.out.println();

}

else

{

System.out.printf("|%-3s| |%-40s| |%-30s| |%-70s| |%-10s| ",x+++".",e.getName(),"No Type",e.getAbsolutePath(),size+" "+sizetype);

System.out.println();

}

}

}

}

}

}

else if(choice==4)

{

break;

}

else if(choice==5)

{

System.out.println("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Thank you for using the Application \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

System.exit(0);

}

else

{

System.out.println("Option doesn't Exist! Please Try Again!");

}

}

}

static void addfile(File input\_file,String directory)

{

System.out.println("\nOption chosen to Add a file in the directory ["+directory+"]");

System.out.println("Please type 'Yes' if you wish to Proceed");

System.out.print("Type Confirmation here -->");

String confirm=stringreader();

if(confirm.matches("[Y|y][e|E][s|S]"))

{

while(true)

{

String name;

System.out.println("\n"+"Enter the Name that you'd like to keep for the New File");

System.out.print("Type the Name here -->");

name=stringreader();

System.out.println("Name Entered -> "+name);

if(name.matches("([^(\\\\|/|:|?|\*|<|>|||\")\*])\*")) //pattern to accept any character other than \ / ? < > \ " | \*

{

String g=directory.concat("\\"+name);

File F=new File(g);

if(F.exists())

{

System.out.println("\nA File already exists with a same name in the directory.");

System.out.println("Please Try Again with a different name.");

continue;

}

else

{

try {

F.createNewFile();

}catch(IOException e)

{

System.out.println("\nException occured."+e);

System.out.println("Please try again!");

}

if(F.exists())

{

System.out.println("\n\t\tFile has been successfully created.");

System.out.println("File name :- \""+name+"\"\tFile Location :- "+g);

break;

}

else

{

System.out.println("File not created due to an unknown issue. Please Try again!");

break;

}

}

}

else

{

System.out.println("\nFile name cannot contain characters \\ / ? < > \" | \* : ");

System.out.println("Please enter a different name which do not contain these characters");

continue;

}

}

}

else

{

System.out.println("\n\t\t\tSorry! Unable to confirm your Response!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

static void deletefile(File input\_file,String directory)

{

String[] listoffiles=input\_file.list();

if(listoffiles.length==0)

{

System.out.println("\nSorry! ["+directory+"] is an Empty Directory!");

System.out.println("\tNo Files to Delete in this directory!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

else

{

System.out.println("\nOption chosen to Delete a file in the directory ["+directory+"]");

System.out.println("\nPlease type the Name of the File that you wish to Delete.");

System.out.print("Type the Name here -->");

String input=stringreader();

String keyname=Pattern.quote(input);

System.out.println("\nFile Name Entered :- "+input);

List<File> Search=searchforkeyname(input\_file,keyname);

if(Search.isEmpty())

{

System.out.println("\nSorry! There is no file with Name :- \""+input+"\" in Directory :- "+directory);

System.out.println("\nPlease try with Again with a vaild Filename!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

else if(Search.size()==1)

{

System.out.println("The File :- \""+Search.get(0).getName()+"\" would be permanantly deleted from Directory :- "+directory);

System.out.println("Please type 'Yes' if you wish to Proceed");

System.out.print("Type Confirmation here -->");

String confirm=stringreader();

if(confirm.matches("[Y|y][e|E][s|S]"))

{

Search.get(0).delete();

if(Search.get(0).exists()==false)

{

System.out.println("\n\tFile has been successfully Deleted.");

System.out.println("File name :- \""+Search.get(0).getName()+"\" has been deleted from Directory :- "+Search.get(0));

}

else

{

System.out.println("Unable to Delete the File!");

System.out.println("Please make sure that File isn't open or in use.");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

else

{

System.out.println("\n\t\t\tSorry! Unable to confirm your Response!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

else if(Search.size()>1)

{

System.out.println("\nThere are multiple files found with name:- \""+input+"\" in Directory:- "+directory);

System.out.println("\nChoose the numeric option to Delete the specific file.");

System.out.printf("\n|%-3s| |%-40s| |%-40s| ","No.","File Name","File Location");

for(File e:Search)

{

System.out.printf("\n|%-3s| |%-40s| |%-40s| ",(Search.indexOf(e)+1),e.getName(),e);

}

System.out.println("\n|"+(Search.size()+1)+" | Delete all the above mentioned files.");

System.out.print("Enter the Choice Here--->");

int choice=0;String s="";Scanner sc=new Scanner(System.in);

try {s=sc.nextLine();if(s.matches("[0-9]+"))

{choice=Integer.valueOf(s);}}catch(Exception e) {System.out.println("Invalid Input");}

if(0<choice&&choice<=Search.size())

{

System.out.println("The File :- "+Search.get(choice-1).getName()+" would be permanantly deleted from Directory :- "+directory);

System.out.println("Please type 'Yes' if you wish to Proceed");

System.out.print("Type Confirmation here -->");

String confirm=stringreader();

if(confirm.matches("[Y|y][e|E][s|S]"))

{

Search.get(choice-1).delete();

if(Search.get(choice-1).exists()==false)

{

System.out.println("\n\tFile has been successfully Deleted.");

System.out.println("File name :- "+Search.get(choice-1).getName()+" deleted from Directory :- "+Search.get(choice-1));

}

else

{

System.out.println("Unable to Delete the File!");

System.out.println("Please make sure that File isn't open or in use.");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

else

{

System.out.println("\n\t\t\tSorry! Unable to confirm your Response!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

else if(choice==(Search.size()+1))

{

System.out.println("\nOption chosen to Delete all the above mentioned files in the directory ["+directory+"]");

System.out.println("Please type 'Yes' if you wish to Proceed");

System.out.print("Type Confirmation here -->");

String confirm=stringreader();

if(confirm.matches("[Y|y][e|E][s|S]"))

{

for(File e:Search)

{

e.delete();

if(e.exists()==false)

{

System.out.println("File name :- "+e.getName()+" deleted from Directory :- "+e);

}

else

{

System.out.println("Unable to Delete "+e.getName()+" from Directory :- "+e);

System.out.println("Please make sure that File isn't open or in use.");

}

}

}

else

{

System.out.println("\n\t\t\tSorry! Unable to confirm your Response!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

else

{

System.out.println("\nInvalid Input!");

System.out.println("\n<<<<<< Proceeding Back to Directory Operations <<<<<<<<\n");

}

}

}

}

static List<File> searchfile(File input\_file,String keyname)

{

List<File> searchresults=new ArrayList<File>();

File[] filesindirectory;

filesindirectory=input\_file.listFiles(); //saving all the files of the input\_file directory in filesindirectory

int numofsubdirectories=0,c=0;

if(filesindirectory!=null)

{

for(File e:filesindirectory) //finding number of sub-folders in the directory

if(e.isDirectory())

numofsubdirectories++;

File[] subdirectoryfiles = new File[numofsubdirectories];

for(File e:filesindirectory) //Saving the sub-folders in subdirectoryfiles file array

if(e.isDirectory())

subdirectoryfiles[c++]=e;

if(numofsubdirectories==0)

{

searchresults=searchforkeyname(input\_file,keyname);

return(searchresults);

}

else

{

searchresults=searchforkeyname(input\_file,keyname);

for(int i=0;i<numofsubdirectories;i++)

{

List<File> temp=null;

temp=searchfile(subdirectoryfiles[i],keyname);

if(temp==null)

{

continue;

}

else

{

for(File e:temp)

searchresults.add(e);

}

}

return(searchresults);

}

}

else

{

return(null);

}

}

static List<File> searchforkeyname(File file,String keyname)

{

List<File> searchresults=new ArrayList<File>();

String[] filesindirectory;

String unquotekeyname=keyname.substring(2, keyname.length()-2);

filesindirectory=file.list();

for(String s:filesindirectory)

{

try {

if(s.matches(keyname+"[.][0-9|a-z|A-Z]\*")||s.matches(keyname)||s.matches("(?i:"+unquotekeyname+")[.][0-9|a-z|A-Z]\*")||s.matches("(?i:"+unquotekeyname+")"))

{

File f=new File(file.getAbsolutePath()+"\\"+s);

searchresults.add(f);

}

}catch(Exception e)

{

System.out.println("Invalid Characters Entered for the File Name.");

break;

}

}

return(searchresults);

}

}