



I. Assignement

Coursework assignement

Programming Languages

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General requirements :



II. Source code

1. **main\_StudentH Class**

package Hierarchie;

public class main\_StudentH {

private static final long *serialVersionUID* = 1L;

public static void main(String[] args) {

mainWindow newWindow= new mainWindow();

int i=0;

Student[] students = new Student[100];

newWindow.mainWindowBuilder(students,i);

}

1. **mainWindow Class**

package Hierarchie;

public class mainWindow{

JButton bSearch;

JButton ListingS;

JButton addS;

JComboBox<String> cb\_Field\_Search;

JTextField textfield;

boolean running=true;

boolean added=false;

static JPanel *ButtonAdd* = new JPanel();

//more pannel added

int j = 0;

mainWindow(){

}

public void mainWindowBuilder(Student[] students,int i) {

JFrame mainWindow = new JFrame();

mainWindow.setTitle("Student");

mainWindow.setSize(960,540);

Image icon = Toolkit.*getDefaultToolkit*().getImage("ressources/Logo S.png");

mainWindow.setIconImage(icon);

mainWindow.setLayout(new GridLayout(4,1));

JLabel label = new JLabel();

ImageIcon image = new ImageIcon("ressources/Logo Student.png");

label.setIcon(image);

textfield = new JTextField("", 12); //set a TextField

cb\_Field\_Search = new JComboBox<String>();

cb\_Field\_Search.addItem("Name");

cb\_Field\_Search.addItem("Surname");

cb\_Field\_Search.addItem("Field of study");

bSearch = new JButton("Search"); //set a button

bSearch.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e) {

String Field\_of\_Search\_Given;

String nameGiven;

String surnameGiven;

String Field\_of\_Study\_Given;

Field\_of\_Search\_Given=(String)cb\_Field\_Search.getSelectedItem();

if(Field\_of\_Search\_Given=="Name") {

nameGiven=textfield.getText();

showFoundedStudent(searchInStudent(students,1,nameGiven,i),students,i);

}

else if(Field\_of\_Search\_Given=="Surname") {

surnameGiven=textfield.getText();

showFoundedStudent(searchInStudent(students,2,surnameGiven,i),students,i);

}

else if(Field\_of\_Search\_Given=="Field of study") {

Field\_of\_Study\_Given=textfield.getText();

showFoundedStudent(searchInStudent(students,3,Field\_of\_Study\_Given,i),students,i);

}

}

});

public void createNewStudent(Student[] students,int i) {

System.***out***.println(students.length);

if (students.length<=100) {

System.***out***.println("adans le if");

Student newStd =new Student();

newStd.windowInputDataStudent(students,i);

}

}

public void listAll(Student[] studentList, int i ) {

for (j=0;j<i;j++) {

System.***out***.println(j);

System.***out***.println(studentList[j].toString());

}

JFrame FrameList = new JFrame();

FrameList.setTitle("Student"); // set the title of the window

FrameList.setSize(960,540); //set the x-dimension and the y-dimension of the this

Image icon = Toolkit.*getDefaultToolkit*().getImage("ressources/Logo S.png"); // create an image icon

FrameList.setIconImage(icon); // replace the standard icon of the window

FrameList.setLocationRelativeTo(null);

String title[] = {"Id","Name", "Surmame","Field of studie","Type of student","More Information"};

Object[][] data = new Object [i][6];

for (j = 0; j<i;j++) {

data[j][0]= studentList[j].id\_Student;

data[j][1]=studentList[j].name;

data[j][2]=studentList[j].Surname;

data[j][3]=studentList[j].Field\_Of\_Studie;

data[j][4]=studentList[j].typeOfStudie;

}

DefaultTableModel model= new DefaultTableModel(data, title);

JTable Table = new JTable(model);

Table.setRowHeight(50);

FrameList.getContentPane().add(new JScrollPane(Table));

FrameList.setResizable(false); // prevent this from being resize

FrameList.setVisible(true);

}

public int[] searchInStudent(Student[] students,int fieldOfSearch,String fieldSearched, int i){

String[] studentFieldChoosenArray = new String[100];

for (int k=0;k<i;k++) {

studentFieldChoosenArray[k]=students[k].toArrayString()[fieldOfSearch];

}

return searchAll(studentFieldChoosenArray,fieldSearched,i);

}

public int[] searchAll(String[] listToSearch, String fieldSearched, int i) {

int[] listOfIndexFound = new int[100];

for(int k=0;k<100;k++) {

listOfIndexFound[k] = -1;

}

int a=0;

for (int l=0; l<i;l++) {

if(listToSearch[l].equals(fieldSearched)){

listOfIndexFound[a]=l;

a++;

}

}

return listOfIndexFound;

}

public void showFoundedStudent(int[] listOfIdFound,Student[] studentList, int i) {

int n=0;

for(int m=0;m<listOfIdFound.length;m++) {

if(listOfIdFound[m] != -1) {

n++;

}

}

Student[] ListOfStudentFounded =new Student[n];

for(int p=0;p<n;p++) {

ListOfStudentFounded[p]=studentList[ listOfIdFound[p] ];

}

JFrame FrameList = new JFrame();

FrameList.setTitle("Student"); // set the title of the window

FrameList.setSize(960,540); //set the x-dimension and the y-dimension of the this

Image icon = Toolkit.*getDefaultToolkit*().getImage("ressources/Logo S.png"); // create an image icon

FrameList.setIconImage(icon); // replace the standard icon of the window

FrameList.setLocationRelativeTo(null);

String title[] = {"Id","Name", "Surmame","Field of studie","Type of student"};

Object[][] data = new Object [n][5];

for (j = 0; j<n;j++) {

data[j][0]= ListOfStudentFounded[j].id\_Student;

data[j][1]=ListOfStudentFounded[j].name;

data[j][2]=ListOfStudentFounded[j].Surname;

data[j][3]=ListOfStudentFounded[j].Field\_Of\_Studie;

data[j][4]=ListOfStudentFounded[j].typeOfStudie;

System.***out***.println(ListOfStudentFounded[j].toString());

}

DefaultTableModel model= new DefaultTableModel(data, title);

JTable Table = new JTable(model);

Table.setRowHeight(50);

FrameList.getContentPane().add(new JScrollPane(Table));

FrameList.setResizable(false); // prevent this from being resize

FrameList.setVisible(true);

}

}

**Student Class**

package Hierarchie;

public class Student extends mainWindow{

JFrame frameStd =new JFrame();

String name;

String Surname;

String Field\_Of\_Studie;

String typeOfStudie;

Adresse Adresse;

int id\_Student;

boolean submit=false;

static JPanel *PButton*=new JPanel();

// Panel pour l'etuduant de base

static JPanel *PTitle*=new JPanel();

//many more added

static JPanel *PanelStudent*=new JPanel();

JTextField tf\_name;

JComboBox<String> cb\_Type\_Studie;

JButton bn\_addStd;

//many more added

public Student() {

}

public Student(String nameGiven, String surnameGiven, String field\_Of\_StudieGiven,String type\_of\_studie, Adresse adresse, int id\_StudentGiven) {

super();

name = nameGiven;

Surname = surnameGiven;

Field\_Of\_Studie = field\_Of\_StudieGiven;

Adresse = adresse;

typeOfStudie=type\_of\_studie;

id\_Student = id\_StudentGiven;

}

public String toString() {

return "id : "+ id\_Student+"name: "+name+" Surname : " +Surname + " Field of Studies: "+ Field\_Of\_Studie+" Adresse : "+ Adresse.toString() +" type of Studies : "+ typeOfStudie;

}

public String[] toArrayString() {

String[] arrayString= {Integer.*toString*(id\_Student), name, Surname,Field\_Of\_Studie,Adresse.number, Adresse.street, Adresse.town, Adresse.zipCode, Adresse.Country,typeOfStudie};

return arrayString;

}

void windowBUilder() {

*PTitle*.removeAll();

*// many more added*

frameStd.setTitle("Student"); // set the title of the window

frameStd.setSize(960,540); //set the x-dimension and the y-dimension of the this

Image icon = Toolkit.*getDefaultToolkit*().getImage("ressources/Logo S.png"); // create an image icon

frameStd.setIconImage(icon); // replace the standard icon of the window

frameStd.setLayout(new GridLayout(12,1));

//PTitle.setLayout(new GridLayout(1,1));

*PTitle*.add(new JLabel("COMPLETE STUDENT INFORMATION "));

*PTitle*.add( new JLabel());

*PTitle*.setBackground(Color.***WHITE***);

*PTypeStd*.add(cb\_Type\_Studie);

bn\_addStd = new JButton("Next");

bn\_addStd.setForeground(Color.***WHITE***);

bn\_addStd.setBackground(new Color(66,133,244));

bn\_addStd.setPreferredSize(new Dimension(220,20));

*PButton*.setBackground(Color.***WHITE***);

*PButton*.add(bn\_addStd);

frameStd.add(*PTitle*);

//many more added

}

void windowInputDataStudent(Student[] students, int i ) {

windowBUilder();

bn\_addStd.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent e){

String nameGiven ;

String surnameGiven;

String Field\_of\_StudieGiven;

String Type\_StudieGiven;

Adresse student\_AdressGiven;

nameGiven = tf\_name.getText();

surnameGiven=tf\_Surname.getText();

Field\_of\_StudieGiven = tf\_Field\_of\_Studie.getText();

Type\_StudieGiven=(String) cb\_Type\_Studie.getSelectedItem();

student\_AdressGiven= new Adresse(tf\_Number.getText(),tf\_Street.getText(),tf\_Town.getText(),tf\_ZipCode.getText(),tf\_Country.getText());

name=nameGiven;

Surname=surnameGiven;

Field\_Of\_Studie=Field\_of\_StudieGiven;

typeOfStudie=Type\_StudieGiven;

Adresse=student\_AdressGiven;

if (typeOfStudie=="Full time student") {

FullTimeStd newFullStd= new FullTimeStd(name,Surname,Field\_Of\_Studie,typeOfStudie,Adresse,i);

frameStd.dispose();

newFullStd.windowInputFullTimeStd(students,i);

}

else if (typeOfStudie=="Part time Student") {

PartTimeStd newPartStd= new PartTimeStd(name,Surname,Field\_Of\_Studie,typeOfStudie,Adresse,i);

frameStd.dispose();

newPartStd.windowInputPartTimeStd(students,i);

}

else if (typeOfStudie=="Erasmus Student") {

ErasmusStd newErasmusStd= new ErasmusStd(name,Surname,Field\_Of\_Studie,typeOfStudie,Adresse,i);

frameStd.dispose();

newErasmusStd.windowInputErasmusStd(students,i);

}

}

});

}

}

**FullTimeStd Class**

package Hierarchie;

public class FullTimeStd extends Student {

JFrame frameFullTStd =new JFrame();

int levelOfStudie; // betwen 1 and 5

String Major;

//other variables initialize

static JPanel *PTitleFullTimeStd* = new JPanel();

// many more added

JTextField tf\_Major;

// many more added

JComboBox<String> cb\_level;

JButton bn\_addSubmit ;

public FullTimeStd() {

super();

}

public FullTimeStd(String name, String surname, String field\_Of\_Studie,String typeOfStudie, Hierarchie.Adresse adresse,

int id\_Student) {

super(name, surname, field\_Of\_Studie,typeOfStudie, adresse, id\_Student);

}

public FullTimeStd(String name, String surname, String field\_Of\_Studie,String typeOfStudie, Hierarchie.Adresse adresse, int id\_Student,

int levelOfStudie, String major, String minor1, String minor2, String referalProf, Float avgGrade) {

super(name, surname, field\_Of\_Studie,typeOfStudie, adresse, id\_Student);

this.levelOfStudie = levelOfStudie;

Major = major; `

//other variables initialize

}

public FullTimeStd(int levelOfStudie, String major, String minor1, String minor2, String referalProf,

Float avgGrade) {

super();

this.levelOfStudie = levelOfStudie;

Major = major;

//other variables initialize }

void windowBUilder() {

*PTitleFullTimeStd*.removeAll();

*// more removed*

*PTitleFullTimeStd*.add(new JLabel("Complete Full time student information"));

*PTitleFullTimeStd*.add(new JLabel());

cb\_level= new JComboBox<String>();

cb\_level.addItem("1");

// more item added

*PLevelOfStudie*.add(new JLabel("Year of study : "));

*PLevelOfStudie*.add(cb\_level);

*PMajor*.add(new JLabel("Major :"));

*PMajor*.add(tf\_Major=new JTextField(16));

*// more panel are used*

bn\_addSubmit = new JButton("Submit");

bn\_addSubmit.setForeground(Color.***WHITE***);

bn\_addSubmit.setBackground(new Color(66,133,244));

bn\_addSubmit.setPreferredSize(new Dimension(224,20));

*PButtonSubmit*.setBackground(Color.***WHITE***);

*PButtonSubmit*.add(bn\_addSubmit);

frameFullTStd.add(*PTitleFullTimeStd*);

frameFullTStd.add(*PLevelOfStudie*);

//more panel added

}

public void windowInputFullTimeStd(Student[] students, int i ){

windowBUilder();

frameFullTStd.setResizable(false); // prevent this from being resize

frameFullTStd.getContentPane().setBackground(new Color(255,255,255)); //change the color of the background

frameFullTStd.setVisible(true);

bn\_addSubmit.addActionListener(new ActionListener(){

public void actionPerformed(ActionEvent e){

int levelOfStudieGiven ; // betwen 1 and 5

String MajorGiven ;

//other variables initialize

try{

levelOfStudieGiven = Integer.*parseInt*((String)cb\_level.getSelectedItem());

}

catch(Exception exeption){

levelOfStudieGiven= 0;

}

try {

MajorGiven=tf\_Major.getText();

}

catch(Exception exeption) {

MajorGiven="Error";

}

// many other try/catch added

levelOfStudie=levelOfStudieGiven;

//other variables initialize

if (!name.equals("")) {

students[i]= new FullTimeStd( name, Surname, Field\_Of\_Studie,typeOfStudie, Adresse, i,

levelOfStudie, Major, Minor1, Minor2, ReferalProf, avgGrade);

mainWindowBuilder(students,i+1);

frameFullTStd.dispose();

}

else {

mainWindowBuilder(students,i);

frameFullTStd.dispose();

}

}

});