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The problem of tracking the student information of your college is:

1. Public class Listing function in Listing.java in this we take name ,grade and number of student.
2. From listing .java code can collect the data manually.
3. In Listing .java program we take method :

public Listing(String n,String g,String num), public String toString(),

public Listing deepcopy(),public int compareTo(String targetKey)

1. Run Listing.java code fill the dataset.
2. Then public class programm in program.java run and use the give function using while().
3. In program .java we can manipulated data collected from listing.java program.
4. First compile the code with javac program\_name.java and then execute java program\_name.java

Program code 1:

Listing.java

public class Listing { # listing method can create to variabals

private String name;

private String number;

private String grade;

public Listing(String n,String g,String num){

name =n;

grade =g;

number = num; }

public String toString(){

return ("Name is "+name+"\ngrade is "+grade+"\nNumber is "+number+"\n");

# return can display name grade tehre roll numbers

}

public Listing deepcopy(){

Listing clone = new Listing(name , grade , number);

return clone; }

public int compareTo(String targetKey){

return (name.compareTo(targetKey));

}

public void setgrade(String a) {

grade = a;

}

}

Program code2:

Program.java

import java.util.\*;

public class programm

{ private static int next;

private static int size;

private Listing[] data;

public programm()

{

next = 0;

size= 100;

data = new Listing[size];

}

public static void main(String[] args)

{

programm listing = new programm();

Listing temp;

String a1 ="";

String a2 ="";

String a3 ="";

String a4 ="";

Listing list1 = new Listing(a1,a2,a3);;

Scanner input = new Scanner(System.in);

int choice =0;

while(true)

{

System.out.println("\tSelect From Menu:");

System.out.println("1 to insert a new student's information,");

System.out.println("2 to fetch and output a student's information,");

System.out.println("3 to delete a student's information,");

System.out.println("4 to update a student's information,");

System.out.println("5 to output all the student information in sorted order, and");

System.out.println("6 to exit the program. ");

choice = input.nextInt();

if(choice == 1)

{ a1 = input.next();

a2 = input.next();

a3 = input.next();

list1 = new Listing(a1,a2,a3);

listing.insert(list1);

public boolean insert(Listing newnode)

{

if(next >= size)

return false;

data[next] = newnode.deepcopy();

if (data[next] == null)

return false;

next +=1;

return true;

}

}

else if(choice == 2)

{ listing.fetch(a1);

public Listing fetch(String targetKey)

{

Listing node;

Listing temp;

int i =0;

while (i < next && !(data[i].compareTo(targetKey) == 0) )

{ i++;}

if (i == next)

return null;

node = data[i].deepcopy();

if (i != 0){

temp = data[i-1];

data[i-1]=data[i];

data[i] = temp;

} return node;

}

System.out.println(list1.toString());

}

else if(choice == 3)

{

listing.delete(a1);

public boolean delete(String targetKey){

int i =0;

while (i < next && !(data[i].compareTo(targetKey) == 0))

{i++;

}

if (i == next)

return false;

data[i]=data[next -1];

data[next -1] = null;

next =next -1;

return true;

}

System.out.println(list1.toString());

}

else if(choice == 4)

{

a4 = input.nextLine();

listing.update(a4,list1);

public boolean update(String targetKey, Listing newnode)

{

if (delete(targetKey)== false)

return false;

else if(insert(newnode) == false )

return false;

else

return true;

}

System.out.println(list1.toString());

}

else if(choice == 5)

{

System.out.println(list1.toString());

}

else if(choice == 6)

{ System.exit(0);

break;

}

}

}

}

The output of the code is given when running the code.