ASSIGNMENT 2A

1. NUMBER GUESS

//Importing Scanner to get input from the console.......

import java.util.Scanner;

public class NumberGuess

{

public static void main(String args[])

{

int input,n=0;

//Creating a object for the Scanner......

Scanner obj = new Scanner(System.in);

System.out.println("java NumberGuess\n");

System.out.println("Java has Chosen a number\n");

//Getting a random number of double type by Math.random()......

double temp = Math.random();

temp=temp\*100;

//Type conversion to int........

int rand = (int)temp;

//Getting input until the input is matched with the random number.....

do

{

System.out.println("Key in your Guess :");

input = obj.nextInt();

if(input<rand)

{

System.out.println("Try Higher !\n");

n++;

}

else if(input>rand)

{

System.out.println("Try Lower !\n");

n++;

}

else

{

n++;

System.out.println("You got it in "+n+" trials");

}

}while(input!=rand);

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac NumberGuess.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java NumberGuess

java NumberGuess

Java has Chosen a number

Key in your Guess :

5

Try Higher !

Key in your Guess :

40

Try Lower !

Key in your Guess :

30

Try Lower !

Key in your Guess :

25

Try Lower !

Key in your Guess :

15

Try Higher !

Key in your Guess :

20

Try Lower !

Key in your Guess :

18

Try Lower !

Key in your Guess :

17

You got it in 8 trials

\*/

1. BILLING

import java.util.Scanner;

//Creating a separate encapsulated class ..........

class billCalc

{

String consumer\_name;

int consumer\_no;

int previous\_reading;

int current\_reading;

String connection\_type;

Scanner obj = new Scanner(System.in);

//Method to get input.........

public void input()

{

System.out.println("Enter the Consumer name :");

consumer\_name=obj.nextLine();

System.out.println("Enter the Consumer number :");

consumer\_no=obj.nextInt();

System.out.println("Enter the previous month reading :");

previous\_reading=obj.nextInt();

System.out.println("Enter the current month reading :");

current\_reading=obj.nextInt();

System.out.println("Enter the type of the connection :");

connection\_type=obj.next();

}

//Method to calculate tariff and return it to main...........

public float CalcBill()

{

float total=0;

float units = previous\_reading - current\_reading;

units=(-1)\*units;

if(connection\_type.equals("domestic"))

{

if(units<=100)

total+=units\*1.0;

else if(units<=200 && units>100)

total+=(100\*1)+((units-100)\*2.5);

else if(units<=500 && units>200)

total+=(100\*1)+(100\*2.5)+((units-300)\*4.0);

else

total+=(100\*1)+(100\*2.5)+(300\*4)+((units-500)\*7.0);

return total;

}

else if(connection\_type.equals("commercial"))

{

if(units<=100)

total+=units\*2;

else if(units<=200 && units>100)

total+=(100\*2)+((units-100)\*4.5);

else if(units<=500 && units>200)

total+=(100\*2)+(100\*4.5)+((units-200)\*6.0);

else

total+=(100\*1)+(100\*2.5)+(300\*4.0)+((units-500)\*7.0);

return total;

}

else

{

System.out.println("Enter the valid Credentials");

return 0;

}

}

//Method to print the Bill date.....

public void printBill(float tarrif)

{

int units =previous\_reading - current\_reading;

units = (-1 )\*units;

System.out.println("\n\*\*\*\*\*\*\*\*\*\*Bill Info\*\*\*\*\*\*\*\*\*\*\*\n");

System.out.println("Consumer name :"+consumer\_name);

System.out.println("Consumer number :"+consumer\_no);

System.out.println("Connection type :"+connection\_type);

System.out.println("Previous month reading :"+previous\_reading);

System.out.println("Current month reading :"+current\_reading);

System.out.println("Total units :"+units);

System.out.println("Tarrif :Rs."+tarrif+"\n");

}

}

//Creating a class for main.........

public class ElectricityBill\_b\_version2

{

public static void main(String args[])

{

//Creation of object for class billCalc......

billCalc a = new billCalc();

//Calling methods of class billCalc through object of that class.........

a.input();

float tarrif = a.CalcBill();

a.printBill(tarrif);

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac ElectricityBill\_b\_version2.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java ElectricityBill\_b\_version2

Enter the Consumer name :

ram

Enter the Consumer number :

2312

Enter the previous month reading :

560

Enter the current month reading :

1200

Enter the type of the connection :

domestic

\*\*\*\*\*\*\*\*\*\*Bill Info\*\*\*\*\*\*\*\*\*\*\*

Consumer name :ram

Consumer number :2312

Connection type :domestic

Previous month reading :560

Current month reading :1200

Total units :640

Tarrif :Rs.2530.0

\*/

1. Employee

import java.util.Scanner;

class Payslip

{

int emp\_id,no\_hours,experience,dd,mm,yyyy;

String emp\_name,designation,dob,insurance;

float basic,da,hra,lic,pf,gross,hour\_wage,deduction,net\_salary;

Scanner obj = new Scanner(System.in);

public void input()

{

System.out.print("Enter Employee Name :");

emp\_name=obj.next();

System.out.print("Enter Employee id :");

emp\_id=obj.nextInt();

System.out.print("Enter designation(First letter in caps) :");

obj.nextLine();

designation=obj.nextLine();

System.out.print("Enter Date of birth as(dd/mm/yyyy) :");

dob=obj.next();

System.out.print("Enter Date of join as(dd mm yyyy) :");

dd=obj.nextInt();

mm=obj.nextInt();

yyyy=obj.nextInt();

System.out.print("Enter Basic pay :");

basic=obj.nextFloat();

System.out.print("Do you opted LIC insurance :");

insurance=obj.next();

if(insurance.equals("yes"))

{

System.out.print("Enter LIC premium Amount :");

lic=obj.nextFloat();

}

else if(insurance.equals("no"))

{

lic=0;

}

if(designation.equals("Intern"))

{

System.out.print("Enter No.of Hours worked:");

no\_hours=obj.nextInt();

System.out.print("Enter Hourly wage :");

hour\_wage=obj.nextFloat();

}

}

public void salary()

{

if(designation.equals("Intern"))

{

da=2000;

hra=1000;

pf=500;

basic=(no\_hours\*hour\_wage);

gross=basic+da+hra;

deduction=lic+pf;

net\_salary=gross-deduction;

}

else if(designation.equals("Manager"))

{

da=(0.4f\*basic);

hra=(0.1f\*basic);

pf=(0.08f\*basic);

gross=basic+da+hra;

deduction=lic+pf;

net\_salary=gross-deduction;

}

else if(designation.equals("Trainee")||designation.equals("Analyst")||designation.equals("Software engineer")||designation.equals("Teamlead"))

{

da=(0.3f\*basic);

hra=(0.1f\*basic);

pf=(0.08f\*basic);

gross=basic+da+hra;

deduction=lic+pf;

net\_salary=gross-deduction;

}

else

{

System.out.println("Enter details as specified\n");

}

}

public void payslip()

{

System.out.println("\n\n\*\*\*\*\*\*\*\*\*Salary Slip\*\*\*\*\*\*\*\*\*\*\*");

System.out.println("\n\nEmployee name :"+emp\_name);

System.out.println("Employee ID :"+emp\_id);

System.out.println("Month and Year :July and 2019");

System.out.println("\nGross:");

System.out.println("Basic :"+basic);

System.out.println("DA :"+da);

System.out.println("HRA :"+hra);

System.out.println("\nNet Gross :"+gross);

System.out.println("\n\nDectections :");

System.out.println("Provident Fund :"+pf);

System.out.println("Life insurance :"+lic);

System.out.println("\nTotal Dectections :"+deduction);

System.out.println("\n\nNet Salary :"+net\_salary);

}

public void promote()

{

System.out.println("\nPromotion Statement\n");

experience=2019-yyyy;

if(experience>=3)

{

if(designation.equals("Trainee")||designation.equals("Analyst")||designation.equals("Software engineer")||designation.equals("Teamlead"))

{

System.out.println("You are Promoted to Manager !");

}

else if(designation.equals("Intern"))

{

System.out.println("You are now one of our employee...");

}

else

{

System.out.println("You are already in the top position..\n");

}

}

else

{

System.out.println("You need more experience dude....!");

}

}

}

public class Employee

{

public static void main(String args[])

{

int i;

System.out.print("Enter the number of Employees :");

Scanner obj = new Scanner(System.in);

int n=obj.nextInt();

Payslip b[] = new Payslip[n];

for(i=0;i<n;i++)

{

b[i] = new Payslip();

}

System.out.println("Enter the Details of Employees:");

for(i=0;i<n;i++)

{

int k=i+1;

System.out.println("\nEmployee "+k+" :");

b[i].input();

b[i].salary();

}

System.out.println("\n1.Display Salary details of Employees\n2.Display salary details of a particular Employee\nSelect an option");

int x=obj.nextInt();

if(x==1)

{

for(i=0;i<n;i++)

{

int k=i+1;

System.out.println("Salary details of Employee "+k);

b[i].payslip();

b[i].promote();

}

}

else if(x==2)

{

System.out.println("Enter the Employee Name :");

String name = obj.next();

int flag=0;

{

for(i=0;i<n;i++)

{

if(b[i].emp\_name.equals(name))

{

b[i].payslip();

b[i].promote();

flag=1;

break;

}

}

if(flag==0)

{

System.out.println("Check the Entered Name...Terminated");

}

}

}

else

{

System.out.println("Check the option Entered......");

}

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java Employee

Enter the number of Employees :1

Enter the Details of Employees:

Employee 1 :

Enter Employee Name :ram

Enter Employee id :23

Enter designation(First letter in caps) :Manager

Enter Date of birth as(dd/mm/yyyy) :23/6/1972

Enter Date of join as(dd mm yyyy) :31 5 2001

Enter Basic pay :40000

Do you opted LIC insurance :yes

Enter LIC premium Amount :2000

1.Display Salary details of Employees

2.Display salary details of a particular Employee

Select an option

1

Salary details of Employee 1

\*\*\*\*\*\*\*\*\*Salary Slip\*\*\*\*\*\*\*\*\*\*\*

Employee name :ram

Employee ID :23

Month and Year :July and 2019

Gross:

Basic :40000.0

DA :16000.0

HRA :4000.0

Net Gross :60000.0

Dectections :

Provident Fund :3200.0

Life insurance :2000.0

Total Dectections :5200.0

Net Salary :54800.0

Promotion Statement

You are already in the top position..

\*/

1. Student

import java.util.Scanner;

public class student

{

Scanner obj = new Scanner(System.in);

int regno;

String name,dept;

char grade;

float mark1,mark2,mark3,total=0;

public void input()

{

System.out.print("Enter Name :");

name = obj.next();

System.out.print("Enter regno :");

regno = obj.nextInt();

System.out.print("Enter Dept :");

dept = obj.next();

System.out.print("Enter mark 1 :");

mark1 = obj.nextFloat();

System.out.print("Enter mark 2 :");

mark2 = obj.nextFloat();

System.out.print("Enter mark 3 :");

mark3 = obj.nextFloat();

}

public void calculation()

{

total=mark1+mark2+mark3;

//System.out.println("\nTOTAL ="+total);

if(total>270)

{

grade='O';

}

else if(total<270 && total >240)

{

grade='A';

}

else if(total<240 && total >210)

{

grade='B';

}

else if(total<150)

{

grade='F';

}

else

{

grade='C';

}

//System.out.println("\nGRADE ="+grade);

}

public int search(int id)

{

if(id==regno)

{

System.out.println("\nMatch found!\n");

return 1;

}

else

{

return 0;

}

}

public int search(String dept\_)

{

if(dept\_.equals(dept))

{

System.out.println("\nMatch found!\n");

return 1;

}

else

{

return 0;

}

}

public void display()

{

System.out.println("Name :"+name);

System.out.println("Regno :"+regno);

System.out.println("Dept :"+dept);

System.out.println("Total :"+total);

System.out.println("Grade :"+grade);

System.out.println();

}

public static void main(String args[])

{

int i,x,flag=1;;

Scanner obj = new Scanner(System.in);

System.out.print("Enter the no. of students :");

int n=obj.nextInt();

student a[] = new student[n];

for(i=0;i<n;i++)

{

a[i] = new student();

System.out.println("Student "+(i+1));

a[i].input();

a[i].calculation();

}

System.out.print("Do you need to search through the student records :");

String p = obj.next();

if(p.equals("yes"))

{

do

{

System.out.print("\nHow do you like to search\n1.By ID\n2.Dep\n3.Exit\nEnter option :");

x=obj.nextInt();

flag=1;

if(x==1)

{

System.out.print("Enter the ID :");

int id = obj.nextInt();

for(i=0;i<n;i++)

{

int o=a[i].search(id);

if(o==1)

{

flag=0;

break;

}

}

if(flag==0)

{

a[i].display();

}

else

{

System.out.print("Not found!");

}

}

else if(x==2)

{

System.out.print("Enter the dept :");

String dept =obj.next();

flag=1;

for(i=0;i<n;i++)

{

int o=a[i].search(dept);

if(o==1)

{

flag=0;

a[i].display();

}

}

if(flag==1)

{

System.out.print("Not found!");

}

}

else if(x==3)

{

break;

}

else

{

System.out.print("Enter correct option !");

}

}while(x!=3);

}

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac student .java

javac: file not found: .java

Usage: javac <options> <source files>

use -help for a list of possible options

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac student.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java student

Enter the no. of students :2

Student 1

Enter Name :sree

Enter regno :23

Enter Dept :CSE

Enter mark 1 :89

Enter mark 2 :78

Enter mark 3 :67

Student 2

Enter Name :ram

Enter regno :12

Enter Dept :EEE

Enter mark 1 :76

Enter mark 2 :67

Enter mark 3 :78

Do you need to search through the student records :yes

How do you like to search

1.By ID

2.Dep

3.Exit

Enter option :1

Enter the ID :23

Match found!

Name :sree

Regno :23

Dept :CSE

Total :234.0

Grade :B

How do you like to search

1.By ID

2.Dep

3.Exit

Enter option :2

Enter the dept :EEE

Match found!

Name :ram

Regno :12

Dept :EEE

Total :221.0

Grade :B

How do you like to search

1.By ID

2.Dep

3.Exit

Enter option :3

\*/

ASSIGNMENT 2B

1. Sorting

import java.util.Scanner;

public class sort

{

Scanner obj = new Scanner(System.in);

int i,j,k,temp,n,a[];

public void initialize()

{

System.out.println("Enter no. elements:");

n=obj.nextInt();

a=new int[n];

}

public void input()

{

System.out.println("\nEnter elements:");

for(i=0;i<n;i++)

{

a[i]=obj.nextInt();

}

}

public void sorting(int x)

{

if(x==1)

{

for(i=0;i<n;i++)

{

for(j=i+1;j<n;j++)

{

if(a[i]>a[j])

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

}

else if(x==2)

{

for(i=0;i<n;i++)

{

for(j=i+1;j<n;j++)

{

if(a[i]<a[j])

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

}

else

{

System.out.println("Enter the option correctly");

}

}

public void print()

{

System.out.println("\nThe Sorted array is");

for(i=0;i<n;i++)

{

System.out.println(a[i]);

}

}

public int end()

{

System.out.println("Wanna try again..\npress any key other than -1");

int x=obj.nextInt();

return x;

}

public static void main(String args[])

{

int i;

Scanner obj = new Scanner(System.in);

sort a = new sort();

while(true){

a.initialize();

a.input();

System.out.print("\nSorting type\n1.Ascending\n2.Descending");

for(i=0;i<2;i++)

{

System.out.println("\nEnter the option");

int x=obj.nextInt();

a.sorting(x);

a.print();

}

int f=a.end();

if(f==-1)

{

break;

}

}

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac sort.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java sort

Enter no. elements:

7

Enter elements:

1

5

2

3

7

6

4

Sorting type

1.Ascending

2.Descending

Enter the option

2

The Sorted array is

7

6

5

4

3

2

1

Enter the option

1

The Sorted array is

1

2

3

4

5

6

7

Wanna try again..

press any key other than -1

-1

\*/

1. Search

import java.util.Scanner;

public class search

{

Scanner obj = new Scanner(System.in);

int i,j,temp,n,a[];

public void initialize()

{

System.out.println("Enter no. elements:");

n=obj.nextInt();

a=new int[n];

}

public void input()

{

System.out.println("\nEnter elements:");

for(i=0;i<n;i++)

{

a[i]=obj.nextInt();

}

}

public int searching(int x)

{

int flag=0;

for(i=0;i<n;i++)

{

if(a[i]==x)

{

flag=1;

break;

}

}

if(flag==0)

return -1;

else

return i;

}

public void sorting()

{

for(i=0;i<n;i++)

{

for(j=i+1;j<n;j++)

{

if(a[i]>a[j])

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

}

}

public int bsearch(int x)

{

int lower\_limit=0,upper\_limit=n-1,middle;

middle=(lower\_limit+upper\_limit)/2;

while(lower\_limit<=upper\_limit)

{

if(x<a[middle])

{

upper\_limit=middle-1;

}

else if(a[middle]<x)

{

lower\_limit=middle+1;

}

else if(x==a[middle])

{

return middle;

}

middle=(lower\_limit+upper\_limit)/2;

}

return -1;

}

public void print1()

{

System.out.println("\nThe Sorted array is");

for(i=0;i<n;i++)

{

System.out.print(i+" ");

System.out.println(a[i]);

}

}

public static void main(String args[])

{

Scanner obj = new Scanner(System.in);

search a = new search();

a.initialize();

a.input();

System.out.print("\nEnter the number to be searched :");

int x = obj.nextInt();

System.out.print("\nEnter which type of method to search\n1.Linear\n2.Binary\nEnter the option :");

int y = obj.nextInt();

if(y==1)

{

int element=a.searching(x);

if(element!=-1)

{

System.out.println("\nThe element is found in the positon "+element);

}

else

{

System.out.println("\n404.Not Found");

}

}

else if(y==2)

{

a.sorting();

a.print1();

int element=a.bsearch(x);

if(element!=-1)

{

System.out.println("The element is found in the positon "+element);

}

else

{

System.out.println("\n404.Not Found");

}

}

else

{

System.out.println("Enter the option correctly");

}

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac search.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java search

Enter no. elements:

6

Enter elements:

2

4

5

3

1

6

Enter the number to be searched :1

Enter which type of method to search

1.Linear

2.Binary

Enter the option :2

The Sorted array is

0 1

1 2

2 3

3 4

4 5

5 6

The element is found in the positon 0

\*/

1. Matrix

import java.util.Scanner;

public class matrix

{

Scanner obj = new Scanner(System.in);

int a[][],b[][],c[][],n,i,j,k;

public void initialize()

{

System.out.print("Enter the number of rows and columns :");

n=obj.nextInt();

a=new int[n][n];

b=new int[n][n];

c=new int[n][n];

}

public void input()

{

System.out.println("\nInput");

System.out.println("\nMatrix A :");

for(i=0;i<n;i++)

{

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

{

a[i][j]=obj.nextInt();

}

}

System.out.println("\nMatrix B :");

for(i=0;i<n;i++)

{

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

{

b[i][j]=obj.nextInt();

}

}

}

public void calculation(int x)

{

if(x==1)

{

for(i=0;i<n;i++)

{

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

{

c[i][j]=a[i][j]+b[i][j];

}

}

}

else if(x==2)

{

for(i=0;i<n;i++)

{

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

{

for(k=0;k<n;k++)

{

c[i][j]+=a[i][k]+b[k][j];

}

}

}

}

else

{

System.out.println("Invalid choice");

}

}

public void display()

{

System.out.println("\nResult Matrix");

for(i=0;i<n;i++)

{

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

{

System.out.print(c[i][j]+" ");

}

System.out.println();

}

}

public static void main(String args[])

{

int i;

Scanner obj = new Scanner(System.in);

matrix a = new matrix();

a.initialize();

a.input();

for(i=0;i<2;i++)

{

System.out.print("\n1.Addition\n2.Multiplication\nEnter the option :");

int x=obj.nextInt();

a.calculation(x);

a.display();

}

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac matrix.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java matrix

Enter the number of rows and columns :3

Input

Matrix A :

4 5 6

3 5 2

1 1 4

Matrix B :

3 5 2

4 7 5

1 2 1

1.Addition

2.Multiplication

Enter the option :1

Result Matrix

7 10 8

7 12 7

2 3 5

1.Addition

2.Multiplication

Enter the option :2

Result Matrix

30 39 31

25 36 25

16 23 19

\*/

1. Non Repeating terms

import java.util.Scanner;

public class nonrepeating

{

Scanner obj = new Scanner(System.in);

int a[],i,j,n,count=0,flag=0;

public void initialization()

{

System.out.print("Enter no. of Elements :");

n=obj.nextInt();

a=new int[n];

}

public void input()

{

System.out.println("Enter elements:");

for(i=0;i<n;i++)

{

a[i]=obj.nextInt();

}

}

public int compute()

{

for(i=0;i<n;i++)

{

flag=0;

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

{

if(i==j)

{

continue;

}

if(a[i]==a[j])

{

flag=1;

break;

}

}

if(flag==0)

{

count++;

}

}

return count;

}

public static void main(String args[])

{

Scanner obj = new Scanner(System.in);

nonrepeating a = new nonrepeating();

a.initialization();

a.input();

int total=a.compute();

System.out.println("\nNumber of non repeating terms :"+total);

}

}

/\*

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> javac nonrepeating.java

PS F:\Study\SSN\3rd Sem\Java\Assignments\Assignment 1> java nonrepeating

Enter no. of Elements :7

Enter elements:

1

2

3

4

3

5

2

Number of non repeating terms :3\*/