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Homework 1

10/30/2015

// Chapter Six

//Question One

**package** homework1;

**import** java.util.Scanner;

**public** **class** Hello {

**public** **static** **void** main(String[] args) {

System.***out***.println("Please enter a string");

Scanner user = **new** Scanner(System.***in***);

String user\_answer = user.nextLine () ;

System.***out***.println("Please Character");

**char** first = user.next().charAt(0);

System.***out***.println(*count*(user\_answer,first));

}

**public** **static** **int** count (String str, **char** a ) {

**int** letter\_count = 0 ;

**for** (**int** first\_char = 0; first\_char < str.length(); first\_char ++ ){

**if** ( a == str.charAt(first\_char)) {

letter\_count ++;

}

}

**return** letter\_count;

}

}

//Chapter Six

//Question Two

**package** homework1;

**import** java.util.Scanner;

**public** **class** SortedNumbers {

**public** **static** **void** main(String[] args) {

System.***out***.println("Please enter '3' Number");

Scanner input = **new** Scanner(System.***in***);

**double** num1 = input.nextDouble() ;

**double** num2 = input.nextDouble() ;

**double** num3 = input.nextDouble() ;

*displaySortedNumbers* (num1,num2,num3);

}

**public** **static** **void** displaySortedNumbers(**double** num1, **double** num2 , **double** num3){

**if** (num1 < num2 && num1< num3){

System.***out***.println( num1 );

}**else** **if** (num2 < num3 && num2< num1){

System.***out***.println( num2 );

}**else**{

System.***out***.println( num3 );

}

**if**((num2 < num1 && num2 > num3) || (num2 > num1 && num2< num3)){

System.***out***.println(num2);

}

**if**(num3> num1 && num3 < num2 || num3 < num1 && num3 > num2){

System.***out***.println(num3);

}

}

}

**//Chapter 6**

**//Question 3**

**package** homework1;

**import** java.util.\*;

**public** **class** sixThree{

**public** **static** **void** main(String[] args){

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter an integer for the n pentagonal numbers you want displayed: ");

**int** pent = input.nextInt();

**for** (**int** n = 1; n <= pent; n++){

System.***out***.println(*getPentagonalNumber*(n));

}

}

**public** **static** **int** getPentagonalNumber(**int** n){

**return** n \* ( 3 \* n - 1) / 2;

}

}

//Chapter 6

//Question 4

**package** homework1;

**import** java.util.\*;

**public** **class** sixFour{

**public** **static** **void** main(String[] Args){

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter an integer: ");

**long** n = input.nextLong();

**int** sum = *sumDigits*(n);

System.***out***.println("The sum is: " + sum);

}

**public** **static** **int** sumDigits(**long** n){

**int** num = (**int**) (n);

**int** sum = 0;

**while** (num >= 0){

sum += num % 10;

num = num / 10;

}

**return** sum ;

}

}

//Chapter 6

//Question 5

package homework1;

import java.util.Scanner;

public class passwordChecker {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Please Enter a Password") ;

String x = input.nextLine();

if (isValid(x)){

System.out.println("Gratz");

}else{

System.out.println("Not Valid Password");

}

}

public static boolean isValid( String password){

if (password.length() < 8) {

return false;

} else {

char c;

int count = 1;

for (int i = 0; i < password.length() - 1; i++) {

c = password.charAt(i);

if (!Character.isLetterOrDigit(c)) {

return false;

} else if (Character.isDigit(c)) {

count++;

if (count < 2) {

return false;

}

}

}

}

return true;

}

}

// Chapter 6

//Question 6

package homework1;

import java.util.Scanner;

public class Letter\_counting {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.println("Please enter a String!!!!!");

String x = input.nextLine();

System.out.print("The count is " +countLetters(x));

}

public static int countLetters(String s){

int count = 0;

char c;

for (int i = 0; i < s.length() - 1; i++) {

c = s.charAt(i);

if (Character.isLetter(c)) {

count ++ ;

}

}

return count;

}

}

//Chapter 7

//Question 2

package homework1;

import java.util.\*;

public class HeadsOrTails {

public static void main(String[] args) {

Scanner Input = new Scanner(System.in);

System.out.println("Please input a string");

int x = Input.nextInt();

int [] [] L =IntArray(DecimalToBinary(x));

for(int D =0; D< 3; D ++ ){

for(int S = 0; S <3; S ++){

if (L[D][S] == 0){

System.out.print(" H ");

}else{

System.out.print(" T ");

}

}

System.out.println(" ");

}

}

public static int [] DecimalToBinary (int G){

int [] Binary = new int [9];

if( G > 511){

System.out.println("error");

}if ( G >= 256){

Binary [0] = 1;

G = G-256;

}if (G>=128){

Binary[1] = 1;

G= G-128;

} if (G>=64){

Binary[2] = 1;

G = G-64;

}if (G>=32){

Binary[3] = 1;

G = G-32;

}if (G>=16){

Binary[4] = 1;

G = G-16;

}if (G>=8){

Binary[5] = 1;

G = G-8;

}if (G>=4){

Binary[6] = 1;

G = G-4;

}if (G>=2){

Binary[7] = 1;

G = G-2;

}if(G>=1){

Binary[8] = 1;

G = G-1;

}

return Binary;

}

public static int [] [] IntArray (int [] H){

int [] [] J = new int [3] [3];

int F=0;

for(int D =0; D< 3; D ++ ){

for (int S = 0; S <3; S ++ ){

J[D][S] = H[F];

F++;

}

}

return J;

}

}

// Chapter 8

// Question 1

package homework1;

import java.util.\*;

import java.util.Scanner;

public class TheMajorDiangonal {

public static void main(String[] args){

System.out.println("Enter Demension n of nxn matrix");

Scanner input = new Scanner (System.in);

int N = input.nextInt();

double [] [] Greg = new double [N] [N];

for(int A =0; A < Greg.length; A ++ ){

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

for (int S = 0; S < Greg[A].length; S ++ ){

Greg [A] [S] = input.nextDouble();

}

}System.out.print(sumMajorDiagonal(Greg));

}

public static double sumMajorDiagonal(double [] [] M){

double D =0;

for(int A =0; A< M.length; A ++ ){

for (int S = 0; S < M[A].length; S ++ ){

if(A == S){

D= D + M [A][S];

}

}

}

return D;

}

}

//Chapter 9

//Question 1 (part 1)

**package** homework1;

**import** java.util.\*;

**public** **class** Rectangle {

**double** width = 1;

**double** height =1;

Rectangle(){};

Rectangle (**double** width, **double** height){

**this**.width =width ;

**this**.height = height;

}

**public** **double** getArea (){

**return** (**this**.width\***this**.height);

}

**public** **double** getPerimeter(){

**return** ((**this**.width\*2) +(**this**.height\*2)) ;

}

};

//Chapter 9

//Question 2 (Part 1)

package homework1;

public class Fan {

final static int SLOW = 1;

final static int MEDIUM = 2;

final static int FAST = 3;

private int speed =SLOW;

private boolean on = false;

private double raduis = 5;

private String colour = "blue";

public double getRaduis() {

return raduis;

}

public void setRaduis(double raduis) {

this.raduis = raduis;

}

public boolean isOn() {

return on;

}

public void setOn(boolean on) {

this.on = on;

}

public int getSpeed() {

return speed;

}

public void setSpeed(int speed) {

this.speed = speed;

}

public String getColour() {

return colour;

}

public void setColour(String colour) {

this.colour = colour;

}

Fan(){};

public String toString(){

String life = ("The Speed is " +this.getSpeed( ) + " ,The fan is "+ this.getColour( ) + ", with a Radius of "+ this.getRaduis( ));

if (!this.on){

life = life + (", fan is off ");

} return life;

};

}

//Chapter 9

//Question 1 (part 2)

package homework1;

public class RectangleTest {

public static void main(String[] args) {

Rectangle G = new Rectangle (4,40);

Rectangle F = new Rectangle (3.5,35.9);

System.out.println("the area of a " + G.width + " x " + G.height+ " is " + G.getArea());

System.out.println("");

System.out.println("the perimeter of a " + G.width + "x" + G.height+ " is " + G.getPerimeter());

System.out.println("");

System.out.println("");

System.out.println("the area of a " + F.width + "x" + F.height+ " is " + F.getArea());

System.out.println("");

System.out.println("the perimeter of a " + F.width + "x" + F.height+ " is " + F.getPerimeter());

}

}

//Chapter 9

//Question 2 (Part 2)

package homework1;

public class FanTest {

public static void main(String[] args) {

Fan G = new Fan();

G.setSpeed(Fan.FAST);

G.setColour("Yellow");

G.setOn(true);

G.setRaduis(10);

Fan F = new Fan();

F.setSpeed(Fan.MEDIUM);

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

System.out.println();

System.out.print(F.toString());

}

}