

TCS XPLORE JAVA HANDS ON 2025

Code copied and cleaned from this website:

<https://kumarweb28.wixsite.com/kumarweb/java-hands-on>

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| _____ / \ _____ / | | \ _____, _ \ _____ / | | | |  
//Numeric Computations - Hands on 1  
import java.io.*;  
import java.util.*;  
import java.text.*;  
import java.math.*;  
import java.util.regex.*;  
public class Solution {  
    public static void main(String[] args) throws Exception {  
        int account_id;  
        double balance, interest_rate;  
        Scanner sc = new Scanner(System.in);  
        account_id = sc.nextInt();  
        balance = sc.nextDouble();  
        interest_rate = sc.nextDouble();  
        Account account = new Account(account_id, balance, interest_rate);  
        int no_of_years = sc.nextInt();  
        double answer = calculate_interest(account, no_of_years);  
        System.out.format("%.3f", answer);  
    }  
    public static double calculate_interest(Account account, int no_of_years) {
```

```

double temp = no_of_years * account.get_interest_rate() / 100;
return (account.get_balance() * (account.get_interest_rate() +
temp) / 100);
}
}
class Account {
private int id;
private double balance;
private double interest_rate;
Account(int id, double balance, double interest_rate) {
this.id = id;
this.balance = balance;
this.interest_rate = interest_rate;
}
public int get_id() {
return this.id;
}
public void set_id(int id) {
this.id = id;
}
public double get_balance() {
return this.balance;
}
public void set_balance(double balance) {
this.balance = balance;
}
public double get_interest_rate() {
return this.interest_rate;
}
public void set_interest_rate(double interest_rate) {
this.interest_rate = interest_rate;
}
}

```

```

    }
}

//#####
//Classes and Objects - Hands on 1
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class solution {
    public static void main(String args[]) throws Exception {
        int x1, y1, x2, y2;

        Scanner scn = new Scanner(System.in);
        x1 = scn.nextInt();
        y1 = scn.nextInt();
        x2 = scn.nextInt();
        y2 = scn.nextInt();

        point p1 = new point(x1, y1);
        point p2 = new point(x2, y2);
        double distance = find_distance(p1, p2);
        System.out.format("%.3f", distance);
    }

    public static double find_distance(point p1, point p2) {
        double distance = Math.sqrt(
            (p2.x - p1.x) * (p2.x - p1.x) +
            (p2.y - p1.y) * (p2.y - p1.y)
        );
        return distance;
    }
}

class point {

```

```

int x, y;
point(int x, int y) {
this.x = x;
this.y = y;
}
}

//#####
//Conditional Operands- Hands on 1

import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class Solution {
public static void main(String[] args) throws Exception {
/* Enter your code here. Read input from STDIN. Print output to
STDOUT */

double x1, y1, x2, y2, x3, y3;
Scanner scn = new Scanner(System.in);
x1 = scn.nextDouble();
y1 = scn.nextDouble();
x2 = scn.nextDouble();
y2 = scn.nextDouble();
x3 = scn.nextDouble();
y3 = scn.nextDouble();
Point p1 = new Point(x1, y1);
Point p2 = new Point(x2, y2);
Point p3 = new Point(x3, y3);
Point highest = point_with_highest_origin_distance(p1, p2, p3);
System.out.format("%.1f \n", highest.x);
System.out.format("%.1f", highest.y);

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```

    }
    public static Point point_with_highest_origin_distance(Point p1,
    Point p2, Point p3) {
    double d1 = Math.sqrt(p1.x * p1.x + p1.y * p1.y);
    double d2 = Math.sqrt(p2.x * p2.x + p2.y * p2.y);
    double d3 = Math.sqrt(p3.x * p3.x + p3.y * p3.y);
    return d1 > d2 ? (d1 > d3 ? p1 : p3) : (d2 > d3 ? p2 : p3);
    }
    }
    class Point {
    double x, y;
    Point(double x, double y) {
    this.x = x;
    this.y = y;
    }
    }
    //#####
    //Java iterations - Hands on 1
    //Smallest character in string
    import java.io.*;
    import java.util.*;
    import java.text.*;
    import java.math.*;
    import java.util.regex.*;
    public class Solution {
    public static void main(String[] args) throws Exception {
    /* Enter your code here. Read input from STDIN. Print output to
    STDOUT */
    String str;
    Scanner scn = new Scanner(System.in);
    str = scn.next();

```

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int[] values = new int[str.length()];
for (int i = 0; i < str.length(); i++) {
    values[i] = (int)(str.charAt(i));
}
int min = values[0];
for (int i = 0; i < values.length; i++) {
    if (values[i] <= min) {
        min = values[i];
    }
}
char c = (char) min;
System.out.print(c);
}
}

//#####
//Java iterations - Hands on 2

import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class Solution {
    public static void main(String[] args) throws Exception {
        /* Enter your code here. Read input from STDIN. Print output to
        STDOUT */

        Scanner scn = new Scanner(System.in);
        int[] num = new int[5];
        for (int i = 0; i < 5; i++) {
            num[i] = scn.nextInt();
        }
        String res = calculate_factorial(num[i]);
        System.out.println(res);
    }
}

```

```

    }
    }
    public static String calculate_factorial(int n) {
        BigInteger fact = new BigInteger("1");
        for (int i = 1; i <= n; i++) {
            fact = fact.multiply(new BigInteger(i + ""));
        }
        return fact.toString();
    }
}

//#####
//Java iterations - Hands on 3
//Find second largest prime number
NOTE: 2/3 Test cases passed
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;
public class Solution {
    public static boolean is_prime(int num) {
        if (num <= 1) return false;
        if (num == 2) return true;
        if (num % 2 == 0) return false;
        for (int i = 3; i <= Math.sqrt(num); i += 2) {
            if (num % i == 0) return false;
        }
        return true;
    }
}
public static void main(String args[]) throws Exception {

```

```
/*Enter your code here. Read input from STDIN. Print output to
STDOUT*/
```

```
Scanner sc = new Scanner(System.in);
```

```
int count = sc.nextInt();
```

```
List prime_list = new ArrayList<>();
```

```
for (int i = 0; i < count; i++) {
```

```
int number = sc.nextInt();
```

```
if (is_prime(number)) {
```

```
prime_list.add(number);
```

```
}
```

```
}
```

```
if (prime_list.size() < 2) {
```

```
System.out.println("No second largest prime");
```

```
return;
```

```
}
```

```
Set unique_primes = new TreeSet<>(Collections.reverseOrder());
```

```
unique_primes.addAll(prime_list);
```

```
Iterator iter = unique_primes.iterator();
```

```
iter.next();
```

```
if (iter.hasNext()) {
```

```
System.out.println(iter.next());
```

```
} else {
```

```
System.out.println("No second largest prime");
```

```
}
```

```
}
```

```
}
```

```
//#####
```

```
//Java arrays - Hands on 1 (Problem 1)
```

```
import java.io.*;
```

```
import java.util.*;
```

```
import java.text.*;
```



```

import java.math.*;
import java.util.regex.*;

public class Solution {
    public static void main(String[] args) throws Exception {
        /* Enter your code here. Read input from STDIN. Print output to
        STDOUT */
        Scanner scn = new Scanner(System.in);
        Document[] docs_array = new Document[4];
        Document[] res = new Document[4];
        for (int i = 0; i < docs_array.length; i++) {
            docs_array[i] = new Document();
            res[i] = new Document();
        }
        for (int i = 0; i < docs_array.length; i++) {
            docs_array[i].set_id(scn.nextInt());
            docs_array[i].set_title(scn.next());
            docs_array[i].set_folder_name(scn.next());
            docs_array[i].set_pages(scn.nextInt());
        }
        res = docs_with_odd_pages(docs_array);
        for (int i = 0; i < res.length; i++) {
            if (res[i].get_title() != null) {
                System.out.println(res[i].get_id() + " " + res[i].get_title() + " " +
                res[i].get_folder_name() + " " + res[i].get_pages());
            }
        }
    }

    public static Document[] docs_with_odd_pages(Document[]
    docs_array) {
        Document[] odd_docs = new Document[4];
        for (int i = 0; i < docs_array.length; i++) {
            odd_docs[i] = new Document();

```

```

    }
    int k = 0;
    for (int i = 0; i < docs__array.length; i++) {
        if (docs__array[i].get__pages() % 2 != 0) {
            odd_docs[k++] = docs__array[i];
        }
    }
    int p = odd_docs.length;
    for (int i = 0; i < p - 1; i++) {
        for (int j = 0; j < p - i - 1; j++) {
            if (odd_docs[j].get__id() > odd_docs[j + 1].get__id()) {
                Document t = odd_docs[j];
                odd_docs[j] = odd_docs[j + 1];
                odd_docs[j + 1] = t;
            }
        }
    }
    return odd_docs;
}

class Document {
    private int id, pages;
    private String title, folder__name;
    public void set__id(int id) {
        this.id = id;
    }
    public void set__title(String title) {
        this.title = title;
    }
    public void set__folder__name(String folder__name) {
        this.folder__name = folder__name;
    }
}

```

```

    }
    public void set__pages(int pages) {
        this.pages = pages;
    }
    public int get__id() {
        return this.id;
    }
    public String get__title() {
        return this.title;
    }
    public String get__folder__name() {
        return this.folder__name;
    }
    public int get__pages() {
        return this.pages;
    }
    }
    //#####
    //Java arrays - Hands on 1 (Problem 2)
    import java.io.*;
    import java.util.*;
    import java.text.*;
    import java.math.*;
    import java.util.regex.*;
    public class Solution {
        public static void main(String[] args) throws Exception {
            /* Enter your code here. Read input from STDIN. Print output to
            STDOUT */
            Scanner scn = new Scanner(System.in);
            Book[] books_array = new Book[4];
            Book[] sorted = new Book[4];

```

```

for (int i = 0; i < books__array.length; i++) {
    books__array[i] = new Book();
    sorted[i] = new Book();
}
for (int i = 0; i < books__array.length; i++) {
    books__array[i].set__id(scن.nextInt());
    books__array[i].set__title(scن.next());
    books__array[i].set__author(scن.next());
    books__array[i].set__price(scن.nextDouble());
}
sorted = sort_books_by_price(books__array);
for (int i = 0; i < sorted.length; i++) {
    System.out.println(sorted[i].get__id() + " " + sorted[i].get__title() +
        " " + sorted[i].get__author() + " " + sorted[i].get__price());
}
}

public static Book[] sort_books_by_price(Book[] books__array) {
    int n = books__array.length;
    for (int i = 0; i < n - 1; i++) {
        for (int j = 0; j < n - i - 1; j++) {
            if (books__array[j].get__price() > books__array[j + 1].get__price()) {
                Book temp = books__array[j];
                books__array[j] = books__array[j + 1];
                books__array[j + 1] = temp;
            }
        }
    }
    return books__array;
}

class Book {

```

```

private int id;
private String title, author;
private double price;
public void set__id(int id) {
    this.id = id;
}
public void set__title(String title) {
    this.title = title;
}
public void set__author(String author) {
    this.author = author;
}
public void set__price(double price) {
    this.price = price;
}
public int get__id() {
    return this.id;
}
public String get__title() {
    return this.title;
}
public String get__author() {
    return this.author;
}
public double get__price() {
    return this.price;
}
}
}
//#####
//Java arrays - Hands on 2 (Problem 1)
import java.util.Scanner;

```

```

public class Solution {
    public static void main(String[] args) throws Exception {
        /* Do not alter code in main method */
        Shirt[] shirts = new Shirt[5];
        Scanner sc = new Scanner(System.in);
        for (int i = 0; i < 5; i++) {
            int tag = sc.nextInt();
            sc.nextLine();
            String brand = sc.nextLine();
            double price = sc.nextDouble();
            sc.nextLine();
            char g = sc.nextLine().charAt(0);
            shirts[i] = new Shirt(tag, brand, price, g);
        }
        double price = sc.nextDouble();
        for (Shirt s : shirts) {
            System.out.println(get_discount_price(s));
        }
        Shirt[] result = get_shirt_with_more_than_specific_price(shirts,
            price);
        for (Shirt s : result) {
            if (s.tag != 0) {
                System.out.println(s.tag + " " + s.price + " " + s.brand);
            }
        }
    }

    public static Double get_discount_price(Shirt s) {
        char ge = s.g;
        int f = 0;
        if (ge == 'm') f = 10;
        if (ge == 'f') f = 20;
    }
}

```

```

    if (ge == 'u') f = 30;
    double p = s.price;
    return p - ((p * f) / 100);
}

public static Shirt[] get_shirt_with_more_than_specific_price(Shirt[]
shirts, double price) {
    Shirt[] r = new Shirt[5];
    for (int i = 0; i < r.length; i++) {
        r[i] = new Shirt(0, "", 0.0, 'f');
    }
    int k = 0;
    for (int i = 0; i < r.length; i++) {
        if (shirts[i].price > price) {
            r[k++] = shirts[i];
        }
    }
    int n = r.length;
    for (int i = 0; i < n - 1; i++) {
        for (int j = 0; j < n - i - 1; j++) {
            if (r[j].price > r[j + 1].price) {
                Shirt t = r[j];
                r[j] = r[j + 1];
                r[j + 1] = t;
            }
        }
    }
    return r;
}

class Shirt {
    int tag;

```

```

String brand;
double price;
char g;
Shirt(int tag, String brand, double price, char g) {
this.tag = tag;
this.brand = brand;
this.price = price;
this.g = g;
}
}
//#####
//Java arrays - Hands on 2 (Problem 2)
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;
public class Solution {
public static void main(String[] args) throws Exception {
/* Enter your code here. Read input from STDIN. Print output to
STDOUT */
Scanner scn = new Scanner(System.in);
Book[] books_array = new Book[4];
Book[] res = new Book[4];
for (int i = 0; i < books_array.length; i++) {
books_array[i] = new Book();
res[i] = new Book();
}
for (int i = 0; i < 4; i++) {
books_array[i].set_id(scn.nextInt());
scn.nextLine(); // consume the newline character

```



```

books_array[i].set__title(sc.nextLine());
books_array[i].set__author(sc.nextLine());
books_array[i].set__price(sc.nextDouble());
}
String value = sc.next();
res = search_title(value, books_array);
int[] matched_id = new int[4];
int j = 0;
for (int i = 0; i < res.length; i++) {
    if (res[i].get__id() != 0) {
        matched_id[j++] = res[i].get__id();
    }
}
Arrays.sort(matched_id);
for (int i = 0; i < matched_id.length; i++) {
    if (matched_id[i] != 0) {
        System.out.println(matched_id[i]);
    }
}
}

public static Book[] search_title(String value, Book[] books) {
    int k = 0;
    Book[] matching = new Book[4];
    for (int i = 0; i < matching.length; i++) {
        matching[i] = new Book();
    }
    for (int i = 0; i < books.length; i++) {
        String val = value.toLowerCase();
        String book_title = books[i].get__title().toLowerCase();
        if (book_title.contains(val)) {
            matching[k++] = books[i];
        }
    }
}

```

```

    }
    }
    return matching;
}
}

class Book {
    private int id;
    private String title;
    private String author;
    private double price;
    public int get__id() {
        return this.id;
    }
    public void set__id(int id) {
        this.id = id;
    }
    public String get__title() {
        return this.title;
    }
    public void set__title(String title) {
        this.title = title;
    }
    public String get__author() {
        return this.author;
    }
    public void set__author(String author) {
        this.author = author;
    }
    public double get__price() {
        return this.price;
    }
}

```

```
public void set__price(double price) {  
    this.price = price;  
}  
}
```