**University - Requirement 1**

The Government all these days were using paperwork to store data of University and Colleges that are available. Your organization has been given the opportunity to create an application to have an easy process for this. Go on and create an application. There are two major domains College and University.  
  
**Requirement 1:**

Let’s start off by creating two **College** objects and check whether they are equal.

1.    Create a **College** Class with the following attributes:

|  |  |
| --- | --- |
| **Member Field Name** | **Type** |
| name | String |
| website | String |
| mobile | String |
| founder | String |
| numberOfDept | Integer |
| location | String |
| startingDate | java.util.Date |

  2.    Mark all the attributes as private

3.    Create / Generate appropriate Getters & Setters

4.    Add a default constructor and a parameterized constructor to take in all attributes in the given order:   
**College(String name, String website, String mobile, String founder,Integer numberOfDept, String location, java.util.DatestartingDate)**

5.    When the “note” object is printed, it should display the following details: **[Override the toString method]**  
Print format:  
Name: "name"  
Website: "website"  
Mobile: "mobile"  
Founder: "founder"  
Number of Dept: "numberOfDept"  
Location: "location"  
Starting Date: "startingDate"

6.    Two colleges are considered same if they have the same name and startingDate. Implement the logic in the appropriate function. (Case – Insensitive)  
**[Override the equals method]**  
  
The input format consists of college details separated by comma in the below order,  
**name,website,mobile,founder,numberOfDept,location,startingDate**

The Input to your program would be details of two colleges, you need to display their details as given in "5th point(refer above)" and compare the two colleges and display whether they are same or different.  
  
**Note:**There is an empty line between display statements. Print the empty lines in the main method.

**Sample INPUT & OUTPUT 1:**   
Enter college 1 detail:  
**IIT Madras,www.iitm.ac.in,7845612390,iit,16,Madras,15-12-1959**  
Enter college 2 detail:  
**iit Madras,www.iitm.ac.in,7845612390,iit,16,Madras,15-12-1959**  
  
College 1:  
Name: IIT Madras  
Website: www.iitm.ac.in  
Mobile: 7845612390  
Founder: iit   
Number of Dept: 16  
Location: Madras  
Starting Date: 15-12-1959  
  
College 2:  
Name: iit Madras  
Website: www.iitm.ac.in  
Mobile: 7845612390  
Founder: iit   
Number of Dept: 16  
Location: Madras  
Starting Date: 15-12-1959  
  
College 1 is same as College 2   
  
**Sample INPUT & OUTPUT 2:**   
Enter college 1 detail:  
**SKCT,www.skct.edu.in,7402600200,BalaKrishna Naidu,6,kovaipudhur,20-05-1985**  
Enter college 2 detail:  
**SKCET,www.skcet.edu.in,7402452130,Vankantram,6,kuniamuthur,02-10-1995**  
  
College 1:  
Name: SKCT  
Website: www.skct.edu.in  
Mobile: 7402600200  
Founder: BalaKrishna Naidu  
Number of Dept: 6  
Location: kovaipudhur   
Starting Date: 20-05-1985  
  
College 2:  
Name: SKCET  
Website: www.skcet.edu.in  
Mobile: 7402452130  
Founder: Vankantram  
Number of Dept: 6  
Location: kuniamuthur   
Starting Date: 02-10-1995  
  
College 1 and College 2 are different

**Test Cases**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Assign Groups](https://cognizant.e-box.co.in/problem/showTestcaseGroup/8262)   | **SNo** | **Name** | **Input** | **Output** | **Purpose** | **Sample** | | --- | --- | --- | --- | --- | --- | | 1 | TC 4 | IIT,www.iitm.ac.in,7845612390,iit,16,Madras,15-12-1959 IIT,www.iitd.ac.in,7845612456,iit,16,Delhi,10-02-1961 | Enter college 1 detail: Enter college 2 detail:  College 1: Name: IIT Website: www.iitm.ac.in Mobile: 7845612390 Founder: iit Number of Dept: 16 Location: Madras Starting Date: 15-12-1959  College 2: Name: IIT Website: www.iitd.ac.in Mobile: 7845612456 Founder: iit Number of Dept: 16 Location: Delhi Starting Date: 10-02-1961  College 1 and College 2 are different | General |  | | 2 | TC 3 | skct,www.skct.edu.in,7402600200,BalaKrishna Naidu,6,kovaipudhur,20-05-1985 SKCT,www.skct.edu.in,7402600200,BalaKrishna Naidu,6,kovaipudhur,20-05-1985 | Enter college 1 detail: Enter college 2 detail:  College 1: Name: skct Website: www.skct.edu.in Mobile: 7402600200 Founder: BalaKrishna Naidu Number of Dept: 6 Location: kovaipudhur Starting Date: 20-05-1985  College 2: Name: SKCT Website: www.skct.edu.in Mobile: 7402600200 Founder: BalaKrishna Naidu Number of Dept: 6 Location: kovaipudhur Starting Date: 20-05-1985  College 1 is same as College 2 | General |  | | 3 | TC 2 | SKCT,www.skct.edu.in,7402600200,BalaKrishna Naidu,6,kovaipudhur,20-05-1985 SKCET,www.skcet.edu.in,7402452130,Vankantram,6,kuniamuthur,02-10-1995 | Enter college 1 detail: Enter college 2 detail:  College 1: Name: SKCT Website: www.skct.edu.in Mobile: 7402600200 Founder: BalaKrishna Naidu Number of Dept: 6 Location: kovaipudhur Starting Date: 20-05-1985  College 2: Name: SKCET Website: www.skcet.edu.in Mobile: 7402452130 Founder: Vankantram Number of Dept: 6 Location: kuniamuthur Starting Date: 02-10-1995  College 1 and College 2 are different | General |  | | 4 | TC 1 | IIT Madras,www.iitm.ac.in,7845612390,iit,16,Madras,15-12-1959 iit Madras,www.iitm.ac.in,7845612390,iit,16,Madras,15-12-1959 | Enter college 1 detail: Enter college 2 detail:  College 1: Name: IIT Madras Website: www.iitm.ac.in Mobile: 7845612390 Founder: iit Number of Dept: 16 Location: Madras Starting Date: 15-12-1959  College 2: Name: iit Madras Website: www.iitm.ac.in Mobile: 7845612390 Founder: iit Number of Dept: 16 Location: Madras Starting Date: 15-12-1959  College 1 is same as College 2 | General |  | |

**University - Requirement 2**

**Requirement 2:**  
Now we are gonna start creating a university and add colleges to it. Start with creating a university and use menu-driven approach to add, remove, display details of the college in the university.  
  
a)Create a Class **College** with the following attributes:

|  |  |
| --- | --- |
| **Member Field Name** | **Type** |
| name | String |
| website | String |
| mobile | String |
| founder | String |
| numberOfDept | Integer |
| location | String |
| startingDate | java.util.Date |

Mark all the attributes as private  
Create / Generate appropriate Getters & Setters

Add a default constructor and a parameterized constructor to take in all attributes in the given order:   
**College(String name, String website, String mobile, String founder,Integer numberOfDept, String location, java.util.DatestartingDate)**

b)Create a Class **University** with the following attributes:

|  |  |
| --- | --- |
| **Member Field Name** | **Type** |
| name | String |
| collegeList | List<College> |

Mark all the attributes as private,  
Create / Generate appropriate Getters & Setters,

Add a default constructor and a parameterized constructor to take in all attributes in the given order:**University(String name, List<College>collegeList)**  
In constructor pass the **collegeList** value as an empty list. Only one **University** will be present at a time.

c) Create the following static method in College class,

|  |  |
| --- | --- |
| **Method Name** | **Description** |
| public static College createCollege(String detail) | This method accepts a string which contains college details separated by commas. Split the details and create a college object from the details and return it. |

The input format consists of college details separated by comma in the below order,  
**name,website,mobile,founder,numberOfDept,location,startingDate**

d) Create the following methods in University class,

|  |  |
| --- | --- |
| **Method Name** | **Description** |
| public void addCollegeToUniversity(College college) | This method accepts a College object and adds the College to the College list of the current university. |
| public Boolean removeCollege(String name) | This method will get the name of the college and delete the college with the specified name from the current university. If a college with the given name found, delete the college and return **true**. If a collegewith the name is not found return **false**. |
| public void displayColleges() | This method will display the college list in the current university. If the college list is empty display "**No colleges to show"**, else display "**Colleges in [university name]**" and display all the college details in the specified format. Where [university name] specifies the name of the university. |

After deletion, if true is returned print "**College successfully deleted**", else print "**College not found in the University**". After adding college to the university, print "**College successfully added**".  
  
**Note:** The above print statements should be present in the main method.  
  
When the “college” object is printed, it should display the following format  
Print format:  
System.out.format("%-15s%-20s%-15s%-15s%-15s%-15s%-15s\n", "Name","Website","Mobile","Founder","Number of Dept","Location","Starting Date");  
  
**Sample Input and Output:**   
Enter the name of the University:   
**IIT**   
1.Add College   
2.Delete College   
3.Display Colleges   
4.Exit   
Enter your choice:   
**3**   
No colleges to show   
1.Add College   
2.Delete College   
3.Display Colleges   
4.Exit   
Enter your choice:   
**2**   
Enter the name of the college to be deleted:   
**IIT**   
College not found in the University   
1.Add College   
2.Delete College   
3.Display Colleges   
4.Exit   
Enter your choice:   
**1**   
**IIT Madras,http.iitm.ac.in,7845612390,** **iit** **,16,Tamil Nadu,15-12-1959**   
College successfully added   
1.Add College   
2.Delete College   
3.Display Colleges   
4.Exit   
Enter your choice:   
**3**   
Colleges in IIT   
Name           Website             Mobile         Founder        Number of Dept Location       Starting Date     
IIT Madras     http.iitm.ac.in     7845612390     iit            16             Tamil Nadu     15-12-1959        
1.Add College   
2.Delete College   
3.Display Colleges   
4.Exit   
Enter your choice:   
**2**   
Enter the name of the college to be deleted:   
**IIT Madras**   
College successfully deleted   
1.Add College   
2.Delete College   
3.Display Colleges   
4.Exit   
Enter your choice:   
**4**

**Test Cases**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Assign Groups](https://cognizant.e-box.co.in/problem/showTestcaseGroup/8263)   | **SNo** | **Name** | **Input** | **Output** | **Purpose** | **Sample** | | --- | --- | --- | --- | --- | --- | | 1 | TC 2 | Indian Institute of Technology 1 IIT Madras,http.iitm.ac.in,7845612390,iit,16,Tamil Nadu,15-12-1959 1 IIT Kharagpur,www.iitkgp.ac.in,7845674586,iit,15,West Bengal,10-02-1951 2 IIT Kanpur 3 1 IIT Kanpur,www.iitk.ac.in,7845645523,iit,14,Uttra Pradesh,23-09-1959 2 IIT Madras 3 1 IIT Delhi,www.iitd.ac.in,7845612456,iit,17,Delhi,10-02-1961 3 4 | Enter the name of the University: 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Enter the name of the college to be deleted: College not found in the University 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Colleges in Indian Institute of Technology Name           Website             Mobile         Founder        Number of Dept Location       Starting Date   IIT Madras     http.iitm.ac.in     7845612390     iit            16             Tamil Nadu     15-12-1959      IIT Kharagpur  www.iitkgp.ac.in    7845674586     iit            15             West Bengal    10-02-1951      1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Enter the name of the college to be deleted: College successfully deleted 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Colleges in Indian Institute of Technology Name           Website             Mobile         Founder        Number of Dept Location       Starting Date   IIT Kharagpur  www.iitkgp.ac.in    7845674586     iit            15             West Bengal    10-02-1951      IIT Kanpur     www.iitk.ac.in      7845645523     iit            14             Uttra Pradesh  23-09-1959      1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Colleges in Indian Institute of Technology Name           Website             Mobile         Founder        Number of Dept Location       Starting Date   IIT Kharagpur  www.iitkgp.ac.in    7845674586     iit            15             West Bengal    10-02-1951      IIT Kanpur     www.iitk.ac.in      7845645523     iit            14             Uttra Pradesh  23-09-1959      IIT Delhi      www.iitd.ac.in      7845612456     iit            17             Delhi          10-02-1961      1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: | General |  | | 2 | TC 1 | IIT 3 2 IIT 1 IIT Madras,http.iitm.ac.in,7845612390,iit,16,Tamil Nadu,15-12-1959 3 2 IIT Madras 4 | Enter the name of the University: 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: No colleges to show 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Enter the name of the college to be deleted: College not found in the University 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Colleges in IIT Name           Website             Mobile         Founder        Number of Dept Location       Starting Date   IIT Madras     http.iitm.ac.in     7845612390     iit            16             Tamil Nadu     15-12-1959      1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Enter the name of the college to be deleted: College successfully deleted 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: | General |  | | 3 | TC 3 | Anna University 1 KCT,http://www.kct.edu.in,9845612370,Kumara Guru,6,Coimbatore,15-05-1988 3 2 KCT 3 2 ECT 1 ECET,http://www.ecet.edu.in,9487456120,Eswar,5,Coimbatore,25-05-89 3 4 | Enter the name of the University: 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Colleges in Anna University Name           Website             Mobile         Founder        Number of Dept Location       Starting Date   KCT            http://www.kct.edu.in9845612370     Kumara Guru    6              Coimbatore     15-05-1988      1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Enter the name of the college to be deleted: College successfully deleted 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: No colleges to show 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Enter the name of the college to be deleted: College not found in the University 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: College successfully added 1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: Colleges in Anna University Name           Website             Mobile         Founder        Number of Dept Location       Starting Date   ECET           http://www.ecet.edu.in9487456120     Eswar          5              Coimbatore     25-05-0089      1.Add College 2.Delete College 3.Display Colleges 4.Exit Enter your choice: | General |  | |

**University - Requirement 3**

**Requirement 3:**  
   In this requirement, you need to validate the website and the mobile number of the note.  
  
a)Create a Class **Main** with the following static methods:

|  |  |
| --- | --- |
| **Method Website** | **Description** |
| static Boolean validateWebsite(String website) | Validate the website based on the rules given below. Returns **true**ifwebsite is valid else return **false** |
| static Boolean validateMobile(String mobileNo) | Validate the mobile number based on the rules given below. Returns**true**ifmobileNo is valid else return**false** |

b) While validating website follow the below rules,  
     
http://www.iit.edu.in  
iit - domain name  
edu - sTLD  
in - ccTLD  
  
1. The website should start **http://** or **https://** protocol  
2. The website may or may not contain " **www."**after the protocol.  
3. The domain name should contain only alphabets, either uppercase or lowercase and should not contain any special characters.  
4. sTLD (sponsored top-level domain) should contain 2 to 6 characters  
5. ccTLD(country code top-level domain) may or may not be present in a website and it should contain 2 to 6 characters  
  
c) While validating mobile number follow the below rules,  
  
1.The mobile number should have prefix as **" +91 "**(international calling code).  
2.The mobile number should have 10 numbers [0-9].  
  
**Note:** Print "**Website is valid**" if website is valid else print "**Website is invalid**". Print "**Mobile number is valid**" if mobile number is valid else print "**Mobile number is invalid**".  
            All the above print statements are present in the main method.  
  
Menu:  
1.Validate Website  
2.Validate Mobile number  
  
**Sample Input and Output 1:**  
  
1.Validate Website  
2.Validate Mobile number  
Enter your choice:  
**1**  
Enter the Website to be validated:  
**https://caspercollege.edu.in**  
Website is valid  
  
**Sample Input and Output 2:**  
  
1.Validate Website  
2.Validate Mobile number  
Enter your choice:  
**1**  
Enter the Website to be validated:  
**https://www.iit\_m.ac.in**  
Website is invalid  
  
**Sample Input and Output 3:**  
  
1.Validate Website  
2.Validate Mobile number  
Enter your choice:  
**2**  
Enter the Mobile no. to be validated:  
**+919876543210**  
Mobile number is valid  
  
**Sample Input and Output 4:**  
  
1.Validate Website  
2.Validate Mobile number  
Enter your choice:  
**2**  
Enter the Mobile no. to be validated:  
**+9987643210**  
Mobile number is invalid

**Test Cases**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Assign Groups](https://cognizant.e-box.co.in/problem/showTestcaseGroup/8264)   | **SNo** | **Name** | **Input** | **Output** | **Purpose** | **Sample** | | --- | --- | --- | --- | --- | --- | | 1 | TC 4 | 2 +9987643210 | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Mobile no. to be validated: Mobile number is invalid | General |  | | 2 | TC 14 | 2 +349478451621 | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Mobile no. to be validated: Mobile number is invalid | General |  | | 3 | TC 9 | 1 caspercollege.edu | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is invalid | General |  | | 4 | TC 11 | 1 https:\\www.iitm.ac.in | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is invalid | General |  | | 5 | TC 3 | 2 +919876543210 | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Mobile no. to be validated: Mobile number is valid | General |  | | 6 | TC 10 | 1 https://caspercollege+edu | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is invalid | General |  | | 7 | TC 6 | 1 https://www.iitm.ac.in | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is valid | General |  | | 8 | TC 7 | 1 https://caspercollege.edu. | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is invalid | General |  | | 9 | TC 1 | 1 https://caspercollege.edu.in | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is valid | General |  | | 10 | TC 5 | 1 http://www.skct.edu | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is valid | General |  | | 11 | TC 8 | 1 www.skct.edu.in | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is invalid | General |  | | 12 | TC 2 | 1 https://www.iit\_m.ac.in | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Website to be validated: Website is invalid | General |  | | 13 | TC 13 | 2 919876543210 | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Mobile no. to be validated: Mobile number is invalid | General |  | | 14 | TC 15 | 2 +91976543210 | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Mobile no. to be validated: Mobile number is invalid | General |  | | 15 | TC 12 | 2 +918876543210 | 1.Validate Website 2.Validate Mobile number Enter your choice: Enter the Mobile no. to be validated: Mobile number is valid | General |  | |

**University - Requirement 4**

**Requirement 4:**  
In this requirement develop a feature in which you can search a List of Colleges by name, startingDate, location.  
  
a) Create a Class **College** with the following attributes:

|  |  |
| --- | --- |
| **Member Field Name** | **Type** |
| name | String |
| website | String |
| mobile | String |
| founder | String |
| numberOfDept | Integer |
| location | String |
| startingDate | java.util.Date |

Mark all the attributes as private, Create / Generate appropriate Getters & Setters. Add a default constructor and a parameterized constructor to take in all attributes in the given order: **College(String name, String website, String mobile,String founder, Integer numberOfDept, String location,Date startingDate)**

b) Create a class **CollegeBO**with the following methods,

|  |  |
| --- | --- |
| **Method Name** | **Description** |
| public List<College> findCollege(List<College> collegeList,List<String> nameList) | This method accepts a list of colleges and list of names as arguments and returns a list of colleges that match with given list of names. |
| public List<College> findCollege(List<College> collegeList,Date startingDate) | This method accepts a list of colleges and starting date as arguments and returns a list of colleges that are starting on the given specified date. |
| public List<College> findCollege(List<College> collegeList, String location) | This method accepts a list of colleges and location as arguments, then find all the colleges present on the location from the college list and return the list of colleges present in the location. |

The college details should be given as a comma-separated value in the below order,  
name, website, mobile, founder, numberOfDept, location, startingDate

When the “college” object is printed, it should display the following details  
Print format:  
**System.out.format("%-15s %-20s %-15s %-15s %-20s %-15s %s\n", "Name","Website","Mobile","Founder","No of departments","Location","Starting date");**  
  
**Note:**The college lists are displayed in the main method.  
              If any other choice is selected, display "**Invalid Choice**"  
              If search detail is not found, display "**No such college is present**"  
  
The above statements are displayed in the main method.  
**Sample Input and Output 1:**

Enter the number of colleges:

**5**

**IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959**

**IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958**

**NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a search type:

1.By name

2.By starting date

3.By location

**1**

Enter the number of names:

**2**

**BITS**

**NIT Trichy**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Website | Mobile | Founder | No of departments | Location | Starting date |
| BITS | www.bits.ac.in/ | 9876543218 | Das Birla | 12 | Pilani | 11-06-1964 |
| NIT Trichy | www.nitt.edu/ | 9876543216 | Govt of India | 11 | Trichy | 01-05-1964 |

**Sample Input and Output 2:**

Enter the number of colleges:

**5**

**IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959**

**IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958**

**NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a search type:

1.By name

2.By starting date

3.By location

**2**

Enter the starting date:

**30-05-1959**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Website | Mobile | Founder | No of departments | Location | Starting date |
| IIT Madras | www.iitm.ac.in/ | 9876543210 | Govt of India | 15 | Chennai | 30-05-1959 |

**Sample Input and Output 3:**

Enter the number of colleges:

**5**

**IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959**

**IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958**

**NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a search type:

1.By name

2.By starting date

3.By location

**3**

Enter the location:

**Mumbai**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Website | Mobile | Founder | No of departments | Location | Starting date |
| IIT Bombay | www.iitb.ac.in/ | 9876543211 | Govt of India | 16 | Mumbai | 20-05-1958 |

**Sample Input and Output 4:**

Enter the number of colleges:

**5**

**IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959**

**IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958**

**NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a search type:

1.By name

2.By starting date

3.By location  
**5**  
Invalid Choice

**Test Cases**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Assign Groups](https://cognizant.e-box.co.in/problem/showTestcaseGroup/8265)   | **SNo** | **Name** | **Input** | **Output** | **Purpose** | **Sample** | | --- | --- | --- | --- | --- | --- | | 1 | s5 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 1 1 IIT Delhi | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the number of names: Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Delhi       www.iitd.ac.in/      9876543213      Govt of India   14                   Delhi           15-05-2018 | General |  | | 2 | s7 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 3 Chennai | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the location: Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 | General |  | | 3 | s10 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-2018 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 2 22-01-2018 | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the starting date: No such college is present | General |  | | 4 | s4 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 5 | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Invalid Choice | General |  | | 5 | s8 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 7 | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Invalid Choice | General |  | | 6 | s9 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-2018 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 1 1 abcd | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the number of names: No such college is present | General |  | | 7 | s1 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 1 2 BITS NIT Trichy | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the number of names: Name            Website              Mobile          Founder         No of departments    Location        Starting date BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-1964 NIT Trichy      www.nitt.edu/        9876543216      Govt of India   11                   Trichy          01-05-1964 | General |  | | 8 | s2 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 2 30-05-1959 | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the starting date: Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-1959 | General |  | | 9 | s11 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-2018 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 3 Ahamedabad | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the location: No such college is present | General |  | | 10 | s3 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-1958 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-1964 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 3 Mumbai | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the location: Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-1958 | General |  | | 11 | s12 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-2018 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 1 1 VIT | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the number of names: Name            Website              Mobile          Founder         No of departments    Location        Starting date VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-2018 | General |  | | 12 | s13 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-2018 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 2 01-05-2018 | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the starting date: Name            Website              Mobile          Founder         No of departments    Location        Starting date NIT Trichy      www.nitt.edu/        9876543216      Govt of India   11                   Trichy          01-05-2018 | General |  | | 13 | s14 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-2018 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-05-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 3 Roorkee | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the location: Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Roorkee     www.iitr.ac.in/      9876543215      Govt of India   8                    Roorkee         22-05-2018 | General |  | | 14 | s6 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 2 21-05-2018 | Enter the number of colleges: Enter a search type: 1.By name 2.By starting date 3.By location Enter the starting date: Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT kharagpur   www.iitkgp.ac.in/    9876543212      Govt of India   20                   Kharagpur       21-05-2018 | General |  | |

**University - Requirement 5**

**Requirement 5:**  
  
In this requirement, you need to sort the list of colleges based on name, startingDate or numberOfDept.   
  
a) Create a Class College with the following attributes:

|  |  |
| --- | --- |
| **Member Field Name** | **Type** |
| name | String |
| website | String |
| mobile | String |
| founder | String |
| numberOfDept | Integer |
| location | String |
| startingDate | java.util.Date |

Mark all the attributes as private, Create / Generate appropriate Getters & Setters, Add a default constructor and a parameterized constructor to take in all attributes in the given order: **College(String name, String website, String mobile,String founder, Integer numberOfDept, String location,Date startingDate)**

b) Create the following static methods in the College class,

|  |  |
| --- | --- |
| **Method Name** | **Description** |
| static College createCollege(String detail) | This method accepts a String. The college detail separated by commas is passed as the argument. Split the details and create a college object and return it. |

The college details should be given as a comma-separated value in the below order,  
name, website, mobile, founder, numberOfDept, location, startingDate  
  
c) The College class should implement the **Comparable** interface which sorts the College list based on name attributes. While comparing, all the name attributes in the list are unique [Case Sensitive. Uppercase letters followed Lowercase].  
  
d) Create a class **StartingDateComparator** which implements Comparator interface and sorts the College list based on startingDate. While comparing, all the startingDate attributes in the list are unique.

e) Create a class **DepartmentComparator** which implements Comparator interface and sorts the College list based on the numberOfDept.While comparing, all the numberOfDept attributes in the list are unique.  
  
Get the number of College and College details and create a College list. Sort the College according to the given option and display the list.  
  
When the “college” object is printed, it should display the following details  
Print format:  
**System.out.format("%-15s %-20s %-15s %-15s %-20s %-15s %s\n", "Name","Website","Mobile","Founder","No of departments","Location","Starting date");**  
  
**Sample Input and Output 1:**

Enter the number of the colleges:

**4**

**IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a type to sort:

1.Sort by name

2.Sort by number of departments

3.Sort by starting date

**1**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Website | Mobile | Founder | No of departments | Location | Starting date |
| BITS | www.bits.ac.in/ | 9876543218 | Das Birla | 12 | Pilani | 11-06-1964 |
| IIT Guwahati | www.iitg.ac.in/ | 9876543214 | Govt of India | 10 | Guwahati | 17-05-1994 |
| IIT Roorkee | www.iitr.ac.in/ | 9876543215 | Govt of India | 8 | Roorkee | 22-05-2001 |
| VIT | www.vit.ac.in/ | 9876543217 | Viswanathan | 13 | Vellore | 10-06-1984 |

**Sample Input and Output 2:**

Enter the number of the colleges:

**4**

**IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a type to sort:

1.Sort by name

2.Sort by number of departments

3.Sort by starting date

**2**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Website | Mobile | Founder | No of departments | Location | Starting date |
| IIT Roorkee | www.iitr.ac.in/ | 9876543215 | Govt of India | 8 | Roorkee | 22-05-2001 |
| IIT Guwahati | www.iitg.ac.in/ | 9876543214 | Govt of India | 10 | Guwahati | 17-05-1994 |
| BITS | www.bits.ac.in/ | 9876543218 | Das Birla | 12 | Pilani | 11-06-1964 |
| VIT | www.vit.ac.in/ | 9876543217 | Viswanathan | 13 | Vellore | 10-06-1984 |

**Sample Input and Output 3:**

Enter the number of the colleges:

**4**

**IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994**

**VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984**

**IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001**

**BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964**

Enter a type to sort:

1.Sort by name

2.Sort by number of departments

3.Sort by starting date

**3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Website | Mobile | Founder | No of departments | Location | Starting date |
| BITS | www.bits.ac.in/ | 9876543218 | Das Birla | 12 | Pilani | 11-06-1964 |
| VIT | www.vit.ac.in/ | 9876543217 | Viswanathan | 13 | Vellore | 10-06-1984 |
| IIT Guwahati | www.iitg.ac.in/ | 9876543214 | Govt of India | 10 | Guwahati | 17-05-1994 |
| IIT Roorkee | www.iitr.ac.in/ | 9876543215 | Govt of India | 8 | Roorkee | 22-05-2001 |

**Test Cases**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Assign Groups](https://cognizant.e-box.co.in/problem/showTestcaseGroup/8266)   | **SNo** | **Name** | **Input** | **Output** | **Purpose** | **Sample** | | --- | --- | --- | --- | --- | --- | | 1 | s9 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-07-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-2018 3 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-2018 IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-2018 BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-2018 NIT Trichy      www.nitt.edu/        9876543216      Govt of India   11                   Trichy          01-07-2018 | General |  | | 2 | s5 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 2 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Delhi       www.iitd.ac.in/      9876543213      Govt of India   14                   Delhi           15-05-2018 IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-2018 IIT kharagpur   www.iitkgp.ac.in/    9876543212      Govt of India   20                   Kharagpur       21-05-2018 | General |  | | 3 | s2 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 2 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Roorkee     www.iitr.ac.in/      9876543215      Govt of India   8                    Roorkee         22-05-2001 IIT Guwahati    www.iitg.ac.in/      9876543214      Govt of India   10                   Guwahati        17-05-1994 BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-1964 VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-1984 | General |  | | 4 | s8 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-07-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-2018 2 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date NIT Trichy      www.nitt.edu/        9876543216      Govt of India   11                   Trichy          01-07-2018 BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-2018 VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-2018 IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-2018 | General |  | | 5 | s7 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 NIT Trichy,www.nitt.edu/,9876543216,Govt of India,11,Trichy,01-07-2018 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-2018 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-2018 1 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-2018 IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-2018 IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 NIT Trichy      www.nitt.edu/        9876543216      Govt of India   11                   Trichy          01-07-2018 VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-2018 | General |  | | 6 | s1 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 1 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-1964 IIT Guwahati    www.iitg.ac.in/      9876543214      Govt of India   10                   Guwahati        17-05-1994 IIT Roorkee     www.iitr.ac.in/      9876543215      Govt of India   8                    Roorkee         22-05-2001 VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-1984 | General |  | | 7 | s4 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 1 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-2018 IIT Delhi       www.iitd.ac.in/      9876543213      Govt of India   14                   Delhi           15-05-2018 IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 IIT kharagpur   www.iitkgp.ac.in/    9876543212      Govt of India   20                   Kharagpur       21-05-2018 | General |  | | 8 | s6 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-2018 IIT Bombay,www.iitb.ac.in/,9876543211,Govt of India,16,Mumbai,20-05-2018 IIT kharagpur,www.iitkgp.ac.in/,9876543212,Govt of India,20,Kharagpur,21-05-2018 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-2018 3 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date IIT Delhi       www.iitd.ac.in/      9876543213      Govt of India   14                   Delhi           15-05-2018 IIT Bombay      www.iitb.ac.in/      9876543211      Govt of India   16                   Mumbai          20-05-2018 IIT kharagpur   www.iitkgp.ac.in/    9876543212      Govt of India   20                   Kharagpur       21-05-2018 IIT Madras      www.iitm.ac.in/      9876543210      Govt of India   15                   Chennai         30-05-2018 | General |  | | 9 | s3 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 3 | Enter the number of the colleges: Enter a type to sort: 1.Sort by name 2.Sort by number of departments 3.Sort by starting date Name            Website              Mobile          Founder         No of departments    Location        Starting date BITS            www.bits.ac.in/      9876543218      Das Birla       12                   Pilani          11-06-1964 VIT             www.vit.ac.in/       9876543217      Viswanathan     13                   Vellore         10-06-1984 IIT Guwahati    www.iitg.ac.in/      9876543214      Govt of India   10                   Guwahati        17-05-1994 IIT Roorkee     www.iitr.ac.in/      9876543215      Govt of India   8                    Roorkee         22-05-2001 | General |  | |

**University - Requirement 6**

**Requirement 6:**  
  
In this requirement, given a list of colleges, you need to find the number of colleges present in a location using Map.  
  
a) Create a Class College with the following attributes:

|  |  |
| --- | --- |
| **Member Field Name** | **Type** |
| name | String |
| website | String |
| mobile | String |
| founder | String |
| numberOfDept | Integer |
| location | String |
| createdDate | java.util.Date |

Mark all the attributes as private, Create / Generate appropriate Getters & Setters. Add a default constructor and a parameterized constructor to take in all attributes in the given order: **College(String name, String website, String mobile,String founder, Integer numberOfDept, String location,Date startingDate)**  
  
b) Create the following static methods in the College class,

|  |  |
| --- | --- |
| **Method Name** | **Description** |
| static Map<String,Integer> calculateLocationCount(List<College> list) | This method accepts a list of College as arguments and returns a TreeMap with the location as key and number of colleges present on the location as value and returns the map. |

In the TreeMap have the location as key and Count the number of colleges present on the location and keep the number of colleges as value. Print the value sorted by location.  
  
The college details should be given as a comma-separated value in the below order,  
name, website, mobile, founder, numberOfDept, location, startingDate  
  
Print format:  
**System.out.format("%-15s %s\n","Location","Count");**  
  
**Sample Input and Output 1:**

Enter the number of colleges:

**4**

**IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959**

**IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-1958**

**MIT,www.mitindia.edu/,9876542320,Govt of India,11,Chennai,12-05-1949**

**JNU,www.jnu.ac.in/,9879879877,Govt of India,10,Delhi,13-05-1969**

|  |  |
| --- | --- |
| Location | Count |
| Chennai | 2 |
| Delhi | 2 |

**Test Cases**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [Assign Groups](https://cognizant.e-box.co.in/problem/showTestcaseGroup/8267)   | **SNo** | **Name** | **Input** | **Output** | **Purpose** | **Sample** | | --- | --- | --- | --- | --- | --- | | 1 | s2 | 4 IIT Guwahati,www.iitg.ac.in/,9876543214,Govt of India,10,Guwahati,17-05-1994 VIT,www.vit.ac.in/,9876543217,Viswanathan,13,Vellore,10-06-1984 IIT Roorkee,www.iitr.ac.in/,9876543215,Govt of India,8,Roorkee,22-05-2001 BITS,www.bits.ac.in/,9876543218,Das Birla,12,Pilani,11-06-1964 | Enter the number of colleges: Location        Count Guwahati        1 Pilani          1 Roorkee         1 Vellore         1 | General |  | | 2 | s4 | 3 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 MIT,www.mitindia.edu/,9876542320,Govt of India,11,Chennai,12-05-1949 AAA,www.aaa.ac.in/,9876543218,Aditiya,12,Chennai,11-06-1964 | Enter the number of colleges: Location        Count Chennai         3 | General |  | | 3 | s3 | 5 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-1958 MIT,www.mitindia.edu/,9876542320,Govt of India,11,Chennai,12-05-1949 JNU,www.jnu.ac.in/,9879879877,Govt of India,10,Delhi,13-05-1969 AAA,www.aaa.ac.in/,9876543218,Aditiya,12,Chennai,11-06-1964 | Enter the number of colleges: Location        Count Chennai         3 Delhi           2 | General |  | | 4 | s1 | 4 IIT Madras,www.iitm.ac.in/,9876543210,Govt of India,15,Chennai,30-05-1959 IIT Delhi,www.iitd.ac.in/,9876543213,Govt of India,14,Delhi,15-05-1958 MIT,www.mitindia.edu/,9876542320,Govt of India,11,Chennai,12-05-1949 JNU,www.jnu.ac.in/,9879879877,Govt of India,10,Delhi,13-05-1969 | Enter the number of colleges: Location        Count Chennai         2 Delhi           2 | General |  | |