

Lab Task 12 – Collections

1. **Codebits Academy** is into software educational service for the past two years. It has a large campus with thousands of students. The school has three buildings and each is allocated to primary, higher, and labs correspondingly. The school has basic necessities such as auditorium, office, library, and so on. In the span of two years, the school has produced many top ranked students in the state.

The school decides to conduct a science exhibition this year. The top authorities of the local government have been asked to attend the 5-day function. Since, the exhibition consists of more than 100 exhibits, the staff decided to use a projector and guide the public to the required locations. Apart from that, the Principal of the school also wanted to display the top rankers of the school in the past two years.

Therefore, assuming that you are a computer staff member,

- a.) Use the concepts of **ArrayList** class and create a multi-dimensional array collection which displays the details:
 - The name of the exhibit
 - The name of the person who has created it
 - The name of the subject
 - The floor on which the exhibit is displayed
 - The name of the building considering the school has three buildings named **Primary, Higher, and Labs**.

Add a minimum of 15 records and display the same. At the last moment, one such student fails to attend the exhibition as he is not feeling well. Therefore, using the method **RemoveAt()**, remove a particular record at the desired index location.

- b.) Use the concepts of **Hashtable** class and display the following:
 - Name of the top rankers in the past two years.
 - Percentage and year in which they have scored the highest.

- Name of the people who scored highest in each subject in the past two years along with their marks. Also display their subjects.

One of the students whose name is already displayed for being a topper last year has got admission in one of the top colleges of the state with a tremendously high score. Using the **ContainsKey()** method, display the appropriate message.

2. James Stuart Media Limited is a learning solutions company with a presence across 10 countries. The company helps the individuals in adapting themselves to the changing knowledge requirements of the fast-growing world. The company is ISO certified for providing quality education services support since 1990.

Every year, the company lists the names of people who got promotions. This task is done manually. This, in turn, created many problems during communication. To overcome this problem, the IT department of **James Stuart Media Limited**, has created software that displays the list of employees who have been promoted after each appraisal. After creating the list, it is forwarded in the company's intranet, so that other people can be updated about the latest happenings in the company.

As software executive of this company, develop a program that uses **SortedList** class and **Dictionary generic class**. Create a **Dictionary generic class** and using the **Add()** method, add the following details:

Name	Department
Tom Lee	Training
James Anderson	HR
Michael Chan	Content Development
Jackie Jackson	Training
Bruce Douglas	Graphics

Kim Date	HR
Joseph Mathews	Content Development
Rose Dorson	Marketing
Andrews Stephan	Graphics

To avoid any discrepancies in the list, use the methods and properties of **SortedList** class and display the records in an alphabetical order.

After the program is developed, it is verified against the checklist given by HR. Later, you find that Andrews Stephan of Graphics department has left the company. Therefore, using `ContainsValue()` and `Remove()` methods, remove the corresponding record.

=====SUBMISSION=====

Please note serious attention is now being drawn to the originality of every task submitted. As it is generally believe that no two persons can reason exactly the way, picking the same variable names, implementing logic exactly the same way etc. Therefore, each student is expected to submit only his/her own authentic work.