Lab Task 11 – Introducing Generics

1. **Intergenic Research Library** provides extensive collection of books to the students of **Genic University**. The Research Library becomes an important exploring tool around for all the current students who hold the University IDs.

The books in **Intergenic Research Library** are mainly categorized into the following:
- ✓ Archaeological
- ✓ World Music and Poetry
- ✓ Art
- ✓ Historical Collections
- ✓ Medical Science, Population Science, Environmental Science
- ✓ Teaching and Learning
- ✓ Photography
- ✓ Film and Theatre
- ✓ Law

The library is open during weekdays from 9-5 pm and is closed on weekends. However, if there is any examination that is fast approaching, the library will be open on special request. The events in the library are updated every weekend. The deadlines for closing all the accounts in the library are at the end of the corresponding academic year.

Since the university has its population increasing year by year, the librarian requests to prepare software that will help the library staff to settle the accounts.

Therefore, the IT team of the university thus decides to help the librarian by creating software that uses the concepts of **Generics**. The details that were given to the software team are as follows:

a)   Name of the student

b)   Year of study

c)   The book that the student has taken:
- ✓ Name of the book
- ✓ ID of the book

d)   The date on which the book was issued

e)   The date on which the book is to be returned

f)   Name of the students who haven't returned the book
- ✓ Name of the book that was not written along with the ID of the book

Hence, use the idea of interface **IDefaulterList** to declare methods in C#:

a)   **GetName():** To get the name of the student.

b)   **GetYear():** To display the year in which the student is working.

c)   **GetBook():** To get the details of the name and ID of the book.

d)   **GetDateIssue():** To display the date when the book was issued.

e)   **GetDateReturn():** To display the date when the book is supposed to be issued.

f)   **GetDefaulter():** To get the names of all the students who haven't returned the book. This method should also include the name and ID of the book that was not returned.

Now, create a class **Library** that will implement the interface **IDefaulterList.** Create a generic class **GenericDefaulterList** with the type parameter applied on the interface **IDefaulterList.**

Finally, create a main method in the class **UniversityLibrary** that will in turn create an instance for the class **GenericDefaulterList** that has its type parameter value as **Library**, since the class **Library** implements the interface **IDefaulterList.**

Display the required details in an orderly manner using format specifiers. Ensure that the date displayed is in appropriate date format.

===============================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.