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Introduction

The thirst for learning, upgrading technical skills and applying the concepts in real life environment at a fast pace is what the industry demands from IT professionals today. However busy work schedules, far-flung locations, and unavailability of convenient time-slots pose as major barriers when it comes to applying the concepts into realism. And hence the need to look out for alternative means of implementation in the form of ladder approach.

The above truly pose as constraints especially for our students too! With their busy schedules, it is indeed difficult for our students to keep up with the genuine and constant need for integrated application which can be seen live especially so in the field of IT education where technology can change on the spur of a moment. *Well, technology does come to our rescue at such times!!*

Keeping the above in mind and in tune with our constant endeavour to use Technology in our training model, we at Aptech have thought of revolutionizing the way our students learn and implement the concepts using tools themselves by providing a *live and synchronous eProject learning environment!*

So what is this eProject?

eProject is a step by step learning environment that closely simulates the classroom and Lab based learning environment into actual implementation. It is a project implementation at your fingertips!! An electronic, live juncture on the machine that allows you to

- Practice step by step i.e. ladder approach.
- Build a larger more robust application.
- Usage of certain utilities in applications designed by user.
- Single program to unified code leading to a complete application.
- Learn implementation of concepts in a phased manner.
- Enhance skills and add value.
- Work on real life projects.
- Give a real life scenario and help to create applications more complicated and useful.
- Mentoring through email support.

How do we start accessing the Sample eProject?

The students at the centre are expected to complete this eProject and send complete documentation with source code within the time allotted to eprojects@aptech.ac.in

Looking forward to a positive response from your end!!

Objectives of the project

The Objective of this program is to give a sample project to work on real life projects. These applications help you build a larger more robust application.

The objective is not to teach you the software's but to provide you with a real life scenario and help you create basic applications using the tools.

You can revise the topics before you start with the project.

These programs should be done in the Lab sessions with assistance of the faculty if required.

It is very essential that a student has a clear understanding of the subject.

Kindly get back @ eprojects@aptech.ac.in in case of any doubts regarding the application or its objectives.

Problem Statement

Introduction

Mohan Ltd. has a library which is managed by Ms. Monica manually. All records are on paper and Monica finds it very difficult to manage when somebody issues or returns the books. She has to maintain list of books along with details such as Author name, book title etc. When a book is to be issued, she has to manually search for that book and again for issuing book she has to maintain a register which will have details of book issued such as Name of the book, Author, Employee details (name, department etc) , Date of issue, Date of return, etc. This process is tedious and time consuming. She has brought it to the notice of her seniors and they have proposed the solution of developing a system which will help Monica managing the things more effectively and also save her time. She will be the only user of the system.

Requirement Summary

Depending on the decision taken to computerize the entire operation of library management, a system is to be developed based on the following requirements.

1. Add employee record. Each employee should have following attributes:
 - Employee ID(unique)
 - Name
 - Address
 - Phone Number
 - Department
2. A unique system ID would also be generated internally for each employee.
3. Update/Delete an employee record
 - The record would be selected using employee ID
 - The record can be deleted if there are no books issued by user.
4. Add a book item. Each book should have following attributes:
 - Call Number
 - ISBN/Name of book
 - Title

- Author name
5. The call number format to be adopted would be as follows:
 - (First 2 alphabets of title)-(first 2 alphabets of author)-sequence number of book
 - XX-XX-NNN
 6. The ISBN number format to be adopted would be as follows:
 - (Numeric code for subject)-(sequence number)
 - NNN-NNNN
 - It would be unique for each specific title/author combination
 7. Author name shall support 30 character names
 8. Title shall support 100 character names.
 9. Update/Delete a book item.
 - The book can be retrieved using the call number
 - The data items which can be updated are:
 - a. ISBN
 - b. Title
 - c. Author Name
 10. The book can be deleted only if no user has issued it.
 11. Query the database
 - The system shall let librarian query book's detail information by their ISBN number or Author or Title.
 - The search result would also produce a list of books, which match the search parameters with following Details:
 - a. Call number
 - b. ISBN number
 - c. Title
 - d. Author
 - The display would also provide the number of copies which is available for issue.
 - The display shall provide a means to select one or more rows to a user-list
 - A detailed view of each book should provide information about check-in/check out status, with the borrower's information.

- The search display will be restricted to 20 results per page and there would be means to navigate from sets of search results.
- The user can perform multiple searches before finally selecting a set of books for check-in or check-out. These should be stored across searches.

12. Check – Out a book

- Librarians can check out a book using its call number
- The checkout can be initiated from a previous search operation where user has selected a set of books.
- The student ID who is issuing the book would be entered
- The issue date would automatically reflect the current system date.
- The due date would automatically be stamped as 5 days from current date.

13. Check –in a book

- Librarians can check in a book using its call number
- The check-in can be initiated from a previous search operation where user has selected a set of books.
- The return date would automatically reflect the current system date.
- Any late fees would be computed as difference between due date and return date at rate of 10 cents a day.

14. Display book detail.

- This view would display details about a selected book from search operation
- The details to be displayed are:
 1. Call number
 2. ISBN
 3. Title
 4. Author
 5. Issue status (In library or checked out)
 6. If book is checked out it would display
 7. User ID & Name
 8. Checkout date
 9. Due date

14. View Employee details

- Librarian can select a user record for detailed view
- The detail view should show:
 - User name, ID, Address & Phone number
 - The books issued by user with issue date, due date, call number, title
 - Late fees & Fines summary and total

Standards plan:

Every code block must have comments.

The logic of the program needs to be explained. Proper documentation should be maintained.

Complete Project Report along with synopsis, code and documentation should be prepared.

Documentation:

No project is complete without documentation. In fact, it is one of the most important activities during the development of a project. The documentation of an ideal project will be in the form of a project report comprising of the following documents:

- Certificate of Completion.
- Table of Contents.
- Problem Definition.
- Customer Requirement Specification.
- Project Plan.
- E-R Diagrams.
- Algorithms.
- GUI Standards Document.
- Interface Design Document.
- Task Sheet.
- Project Review and Monitoring Report.
- Unit Testing Check List.
- Final Check List.

Deliverables

You need to submit the following Deliverables:

1. Hardbound Documentation of the project.
2. You need to follow all the following points as a part of your eprojects execution process and will carry **10 marks** in the final eProject Result.
 - a) Send us 2 (two) eprojects status mail, each should be after 10 days interval from your eprojects start date. Incase if your project is less than 30 days then also you need to send 2 (two) status mails (first status mail between 7-10 days and second 3 days before the end date of project).
 - b) The status mail should consist of description with review document (what's going on the project). Also you can send your doubts / clarification or any additional inputs required to complete your eproject any time during the project planning and execution.
 - c) At the time of project submission also send us the feedback along with your documentation (soft and hard bound copy). The Feedback form is attached with this mail.

Remember that the subject of your email should start either with the word **STATUS:** or **DOUBT:** accordingly..

Hardware/ Software Requirements

Hardware

- A minimum computer system that will help you access all the tools in the courses is a Pentium 166 or better
- 128 Megabytes of RAM or better

Software

- Visual Basic/ visual studio 6.0
- Visual basic .net / C#
- Visual Studio .net 2003
- Java Virtual Machine/ J2EE server
- Notepad/Java editor
- j2sdk1.4.1_02 (or later).
- EJB Dev Kit
- Java enabled web server
- JSP / Servlets Dev. Kit

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