Chapter 7

Conclusions
In this thesis the detail results and conclusions have been included at end of each section of the chapters 3, 4 and 5. Thus an overall conclusion has been included in this chapter.

The main objective of this thesis is to find the effective design and implementation methods for developing the E-learning softwares from first generation to the third generation. The ultimate goal of any E-learning software is to replace the classroom teaching up to maximum extend. This goal can be achieved only through the simulation of the teacher through software, which is always the most advanced stage of any E-learning software. The well defined generalized strategy has been successfully formulated to achieve this goal which comprises steps like

- Technical Specifications
- Tool Selection process for developing higher quality E-learning software (Web based and standalone) with less time
- Development of Pedagogy Rule Base
- Model Development and Optimization
- Personalization and Further Optimization of Model
- Providing the Collaborative Environment using web based P2P Technology
- Effective use of Mobile Technology
- New Object Oriented Approach using SCORM based Reusable Learning Objects

This strategy has been successfully applied and tested to develop the E-learning software for simulating the teacher of C language. This generalized strategy has been again tested while developing the solutions for mobile devices and applying the Object Oriented Principles to develop the E-learning software for simulating the teacher of Microsoft Visual Basic and HTML.

Basically this software development strategy shows the generalized way of developing E-learning software for simulating of the teacher. For few typical complicated subjects the appropriate modifications are necessary without changing the basic approach suggested in this strategy. The various case studies have been considered to show this fact like
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- Simulation of the teacher for Visual Basic
- Pseudo Simulation E-learning Technique for developing Data Structures E-learning software
- New E-learning Software for Microprocessor
- Innovative E-learning Software for algorithms simulation in Computer Graphics

In this study the generalized software engineering based step by step E-learning content development methodology has been proposed. It has been shown that the basic generalized strategy for development of simulation of teacher follows the basic principles of software engineering.

Without the help of economical and reliable CD piracy protection mechanism the Research & Development activities cannot be accelerated in the field of Computer Based Training (CBT) through CDs. Nobody would like to invest time, energy and money in digital multimedia for education field without the reliable CD protection. Thus there is a need of new economical and robust CD protection mechanism. To achieve this goal the new technique has been successfully invented and tested.