2.7 System Features

2.7.1 Modified Interface

The resulting interfaces are basically of two types and the user can choose which to use, they are loosely, flexible, movable widows arranged in an initial arrangement but the learner is free to move them around, this decision was made based on the survey study carried out which revealed that just like different people arrange their books while reading multiple numbers differently likewise each wished to view the video and slide arrangement according to their requirements, see results for Q3 in Appendix A. A Timeline window is also provided for the viewer in prototype 2 where he can view the entire lecture slide content in a timeline mode

2.7.2 Concept Map Tool Facility

The current "Synmark" window was changed to be used as a click and pop window so that it gave more space to the content of the lecture to be viewed see the diagrams in Appendix B where the system run shows the synmark window as a pop-up to the interface window. The concept map tool was researched to be more usable in a pop-up architecture, where it was at the user disposal to view the current concept location in the concept map, hence the concept map is added as part of the synmark window.

2.7.3 Note Sharing and Feedback Statistical Analysis Add On

Synote allows effective communication between the instructor and students:
The instructor is able to monitor student feedback via the easy categorization and pictorial view of the synmarks which have a flag added as part of the synmark framework.
The students have the facility to put flags ("questions", "solutions" "comments", "problem area") which make their posts easy to read and attract the attention of the viewers and instructors to the relevant sections parts of lecture which are also displayed as a timeline for a quick glance at the feedback. This is a also a way of giving useful feedback to the instructor. This view gives a statistical analysis and the instructor can determine which parts of the lecture are causing the greatest confusion (depending on the frequency of 'Problem Area' flag synmark indicated on the timeline chart).

CHAPTER 3

SYSTEM ARCHITECTURE

3.1 Overview

The system follows the three-tier architectural style and is organized into three layers: the interface layer, application layer and the storage layer. The interface layer is the collection of web pages that allows the users to interact with the system. It is implemented using Java and Grails at large and contains the facility of not only synchronizing videos with slides but also student evaluation. The application layer contains the logic and rules for storing data in the database layer and also retrieving it in accordance with the user's needs. Finally, the storage layer stores the whole data in a database as required by the system which include the video and slide url's , as well the "synmarks" data.

3.2 Rationale

The three-tier architecture style is used because it not only separates the user interface and the stored data, but also provides an application logic layer. The application layer provides a middle layer that allows the data and the web interface to be loosely coupled. The application layer has to be modified if there are any changes to the format of the data files and the interface layer will need little or no modification. This makes it easy for clients of this software to modify the data file format and attributes for further research purposes if they wish to do so. This layer makes the system more maintainable and reusable and also hides the complexity of processing data from the users.

3.3 Architectural View

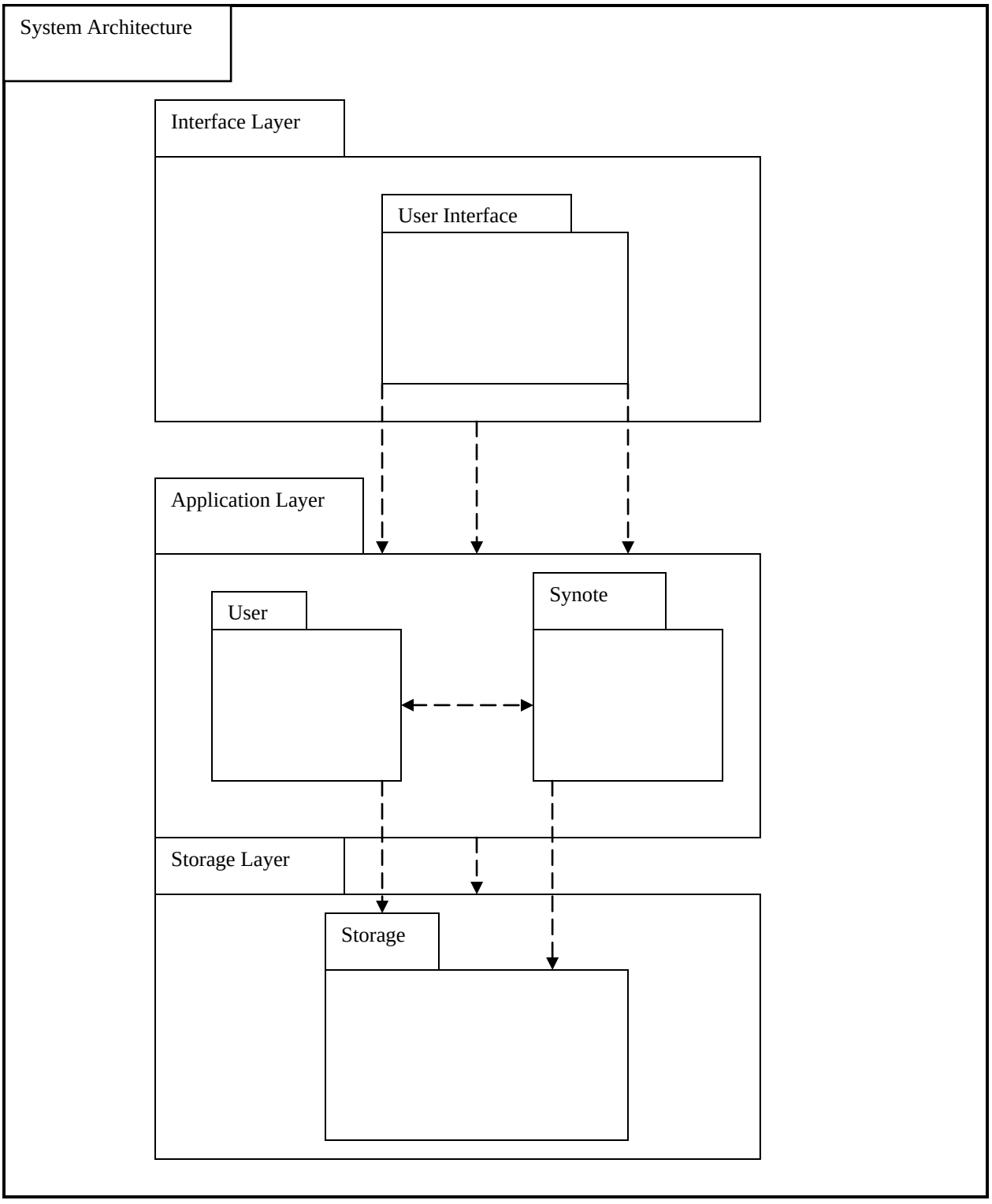


Figure 3.3.1 An Architectural View of Synote

CHAPTER 4

SYSTEM DESIGN & IMPLEMENTATION

4.1 Implementation Decisions and Design

The development was carried out using the Google Web Toolkit platform for website development and the language deployed was Groovy and Grails, the IDE used was notepad++ and the execution testing was done command-line, the database interaction was handled via hibernate and MySQL provided the underlying database functionality.

4.2 Conceptual View

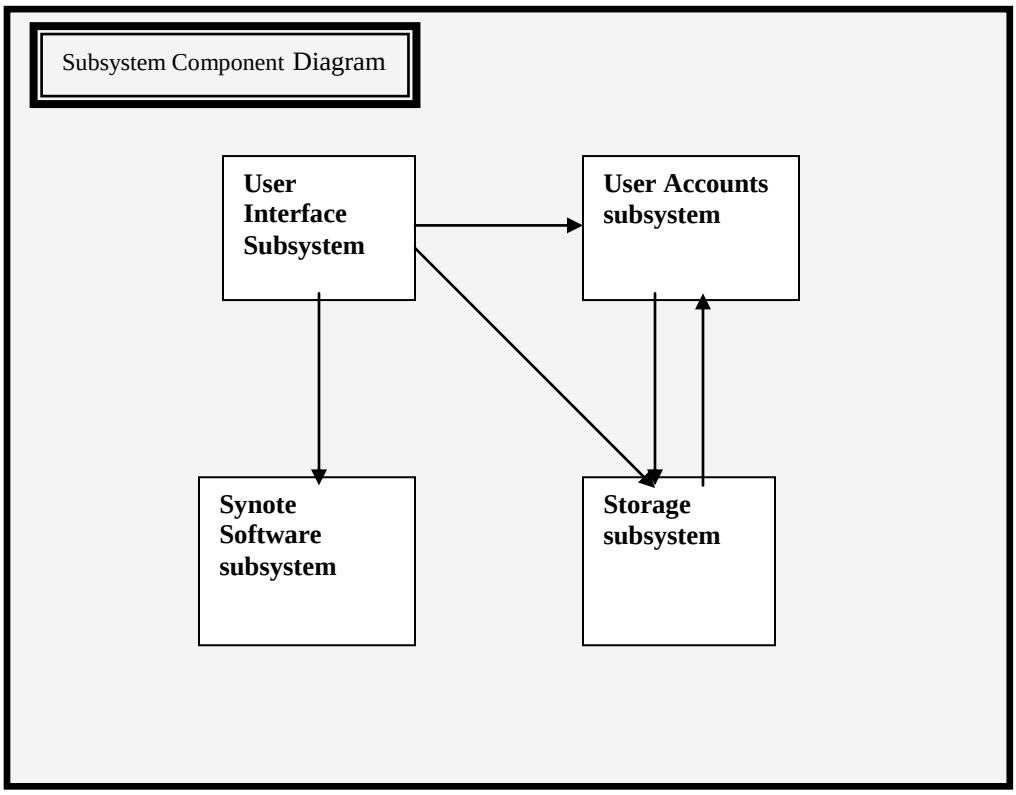


Fig 4.2.1 The Conceptual View for the Synote System

4.3 Physical View

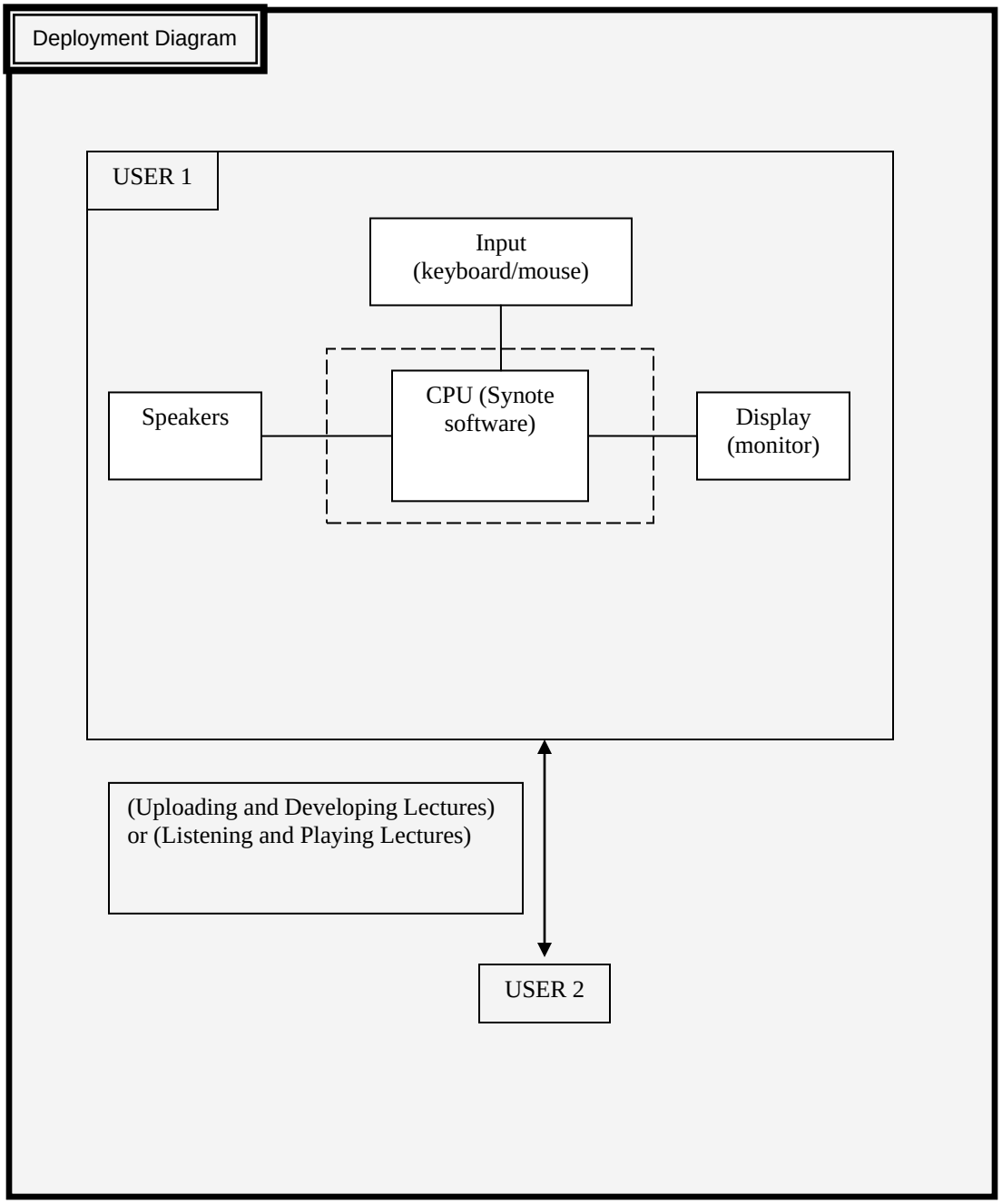


Fig 4.3.1 The Deployment Diagram for the Synote System

4.4 Low Level Design

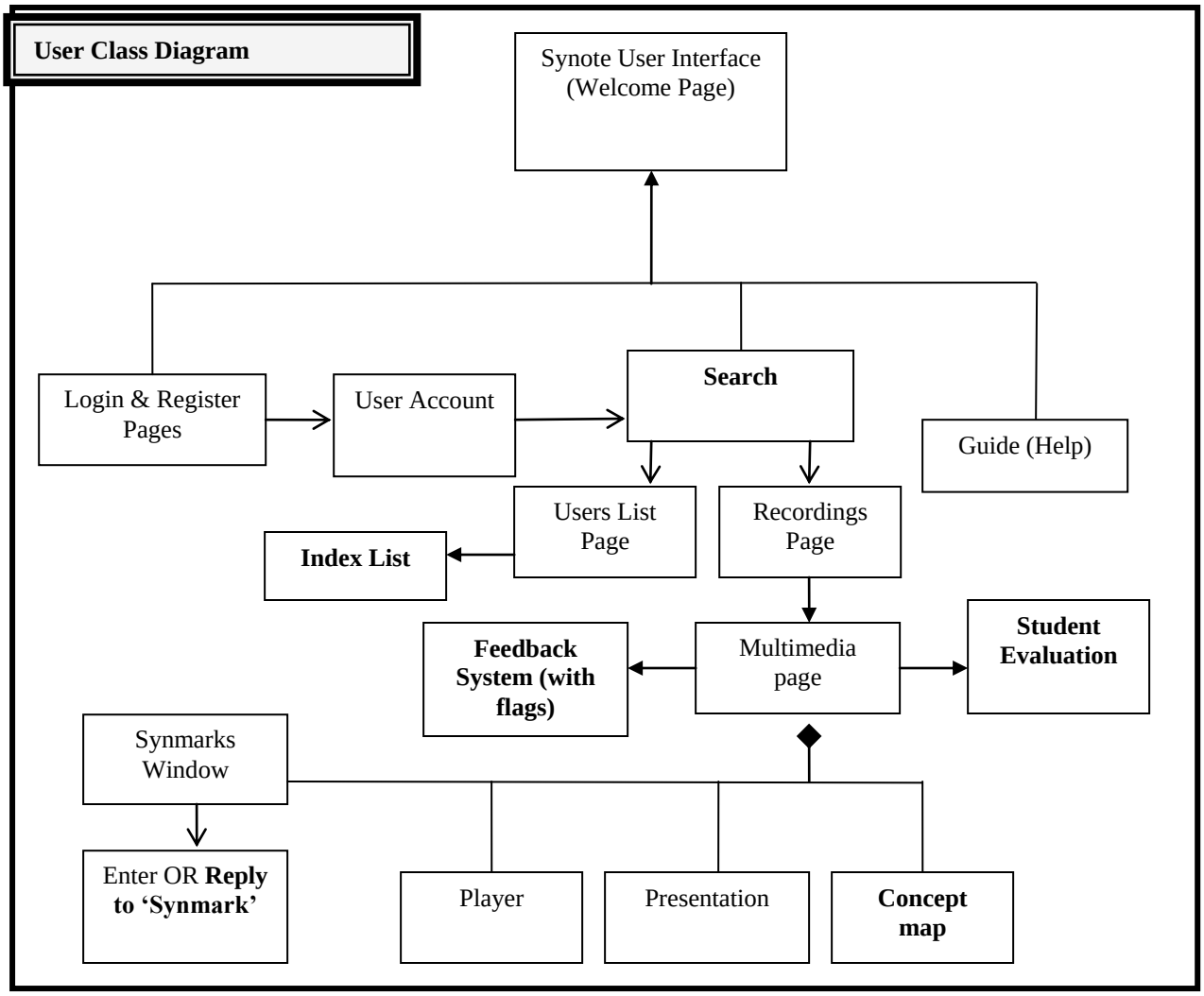


Fig 4.4.1 The Synote User Webpages (bolded one to be implemented or enhanced)

CHAPTER 8

APPENDIX

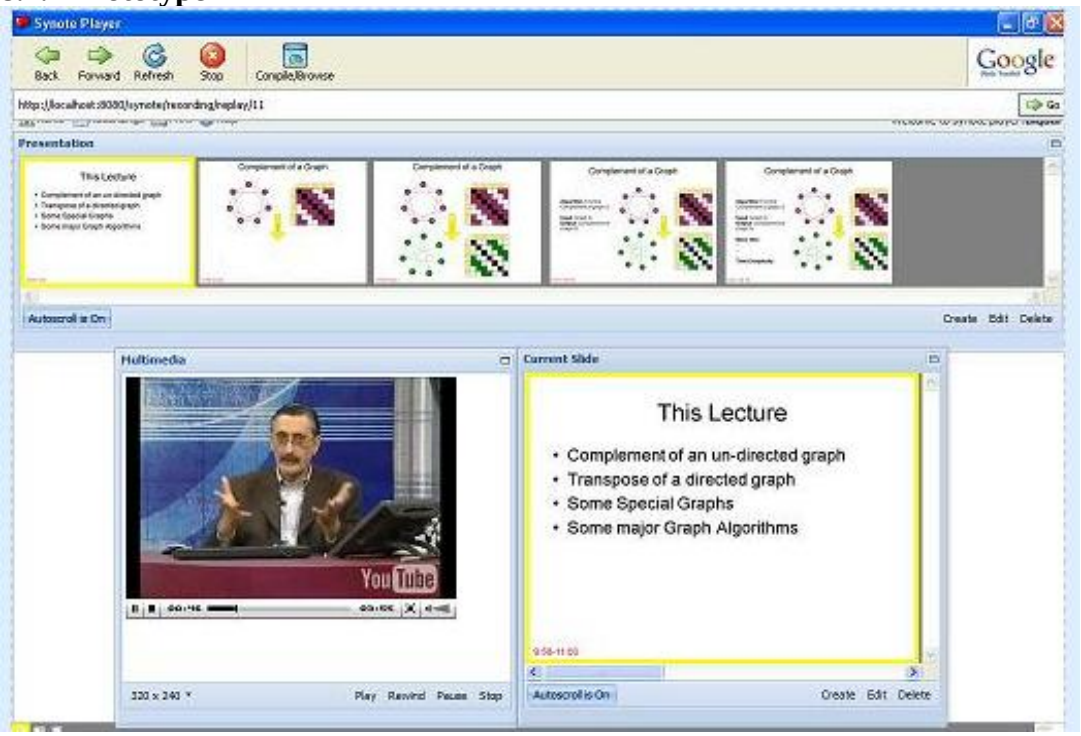
APPENDIX A

Research Results

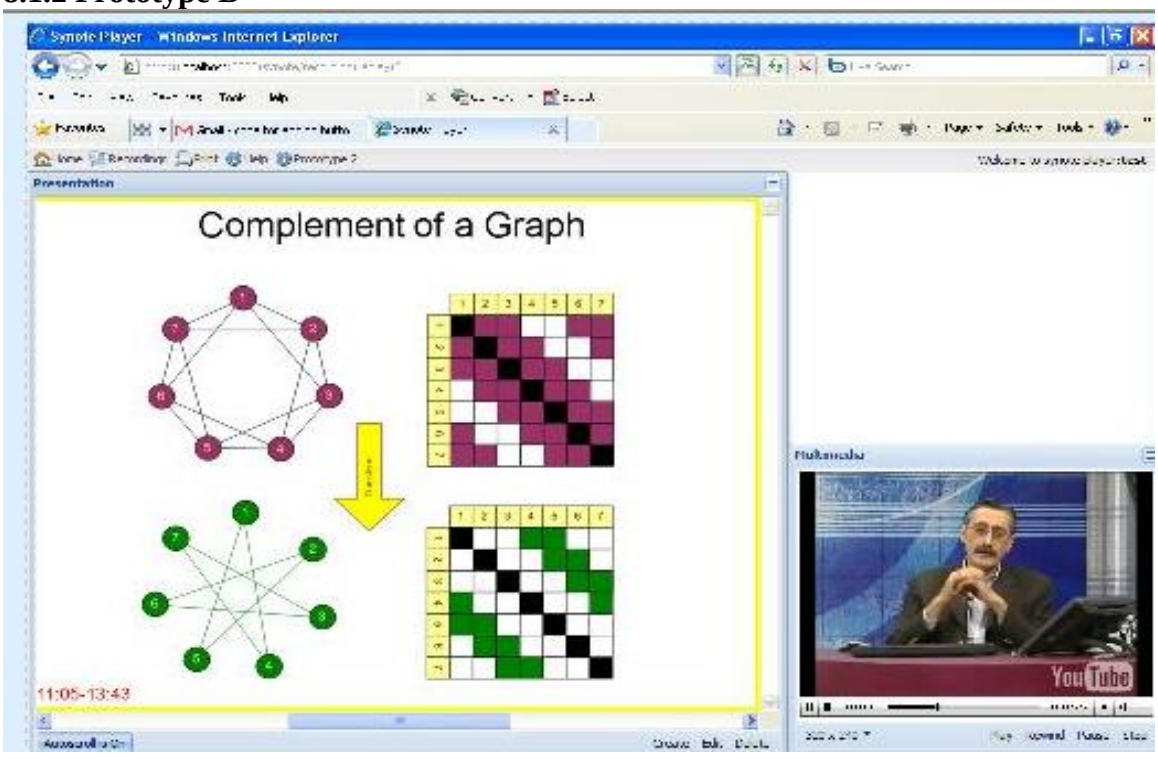
APPENDIX B

8.1 Screenshots

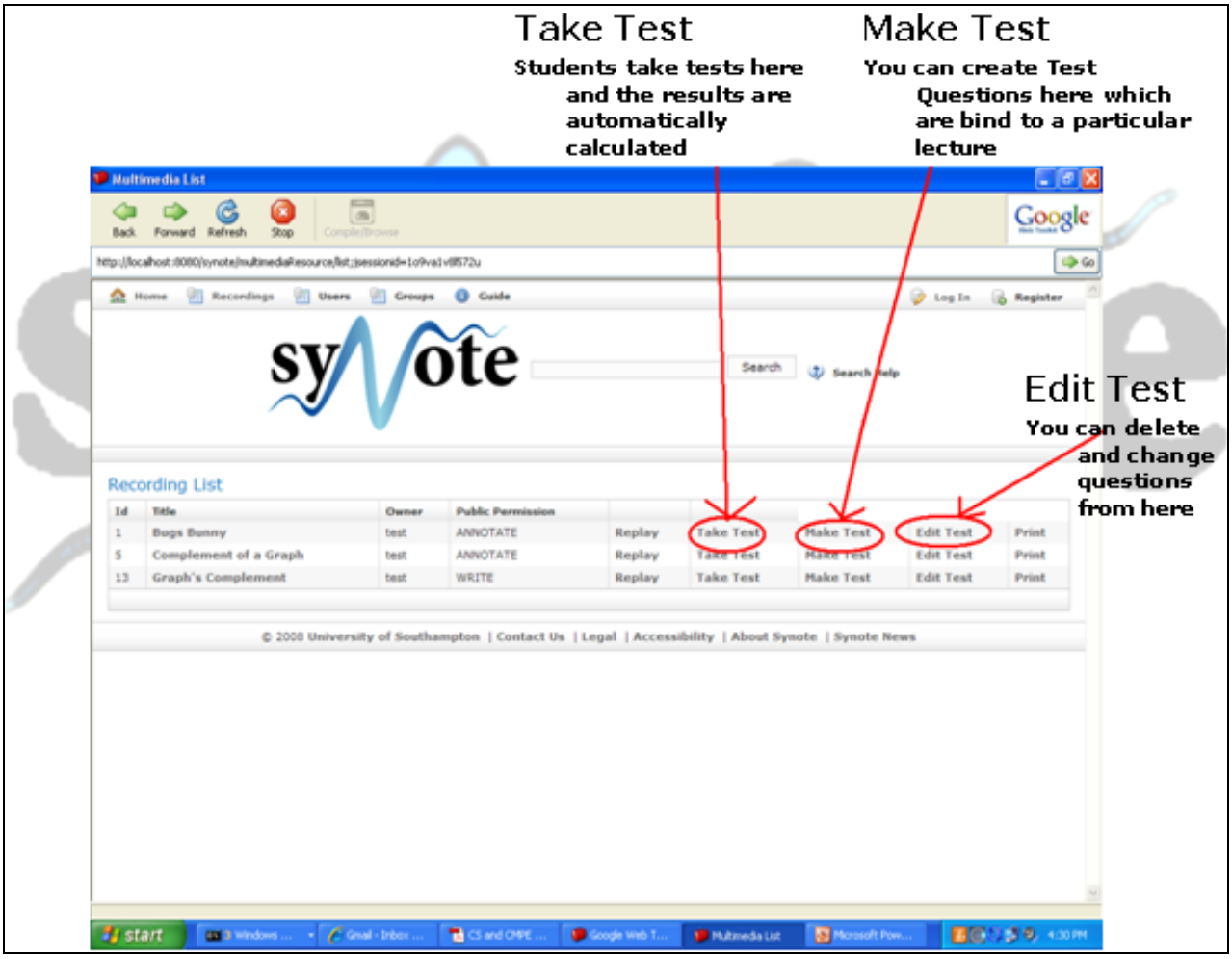
8.1.1 Prototype A



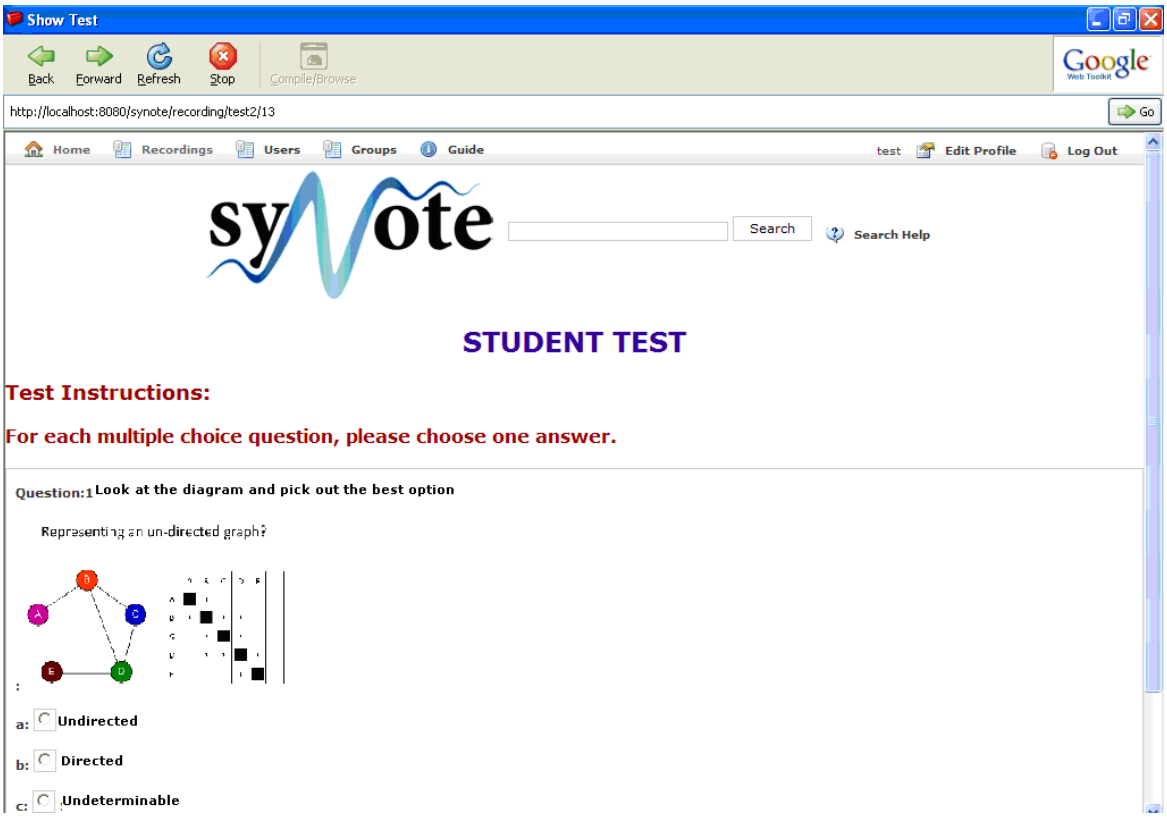
8.1.2 Prototype B



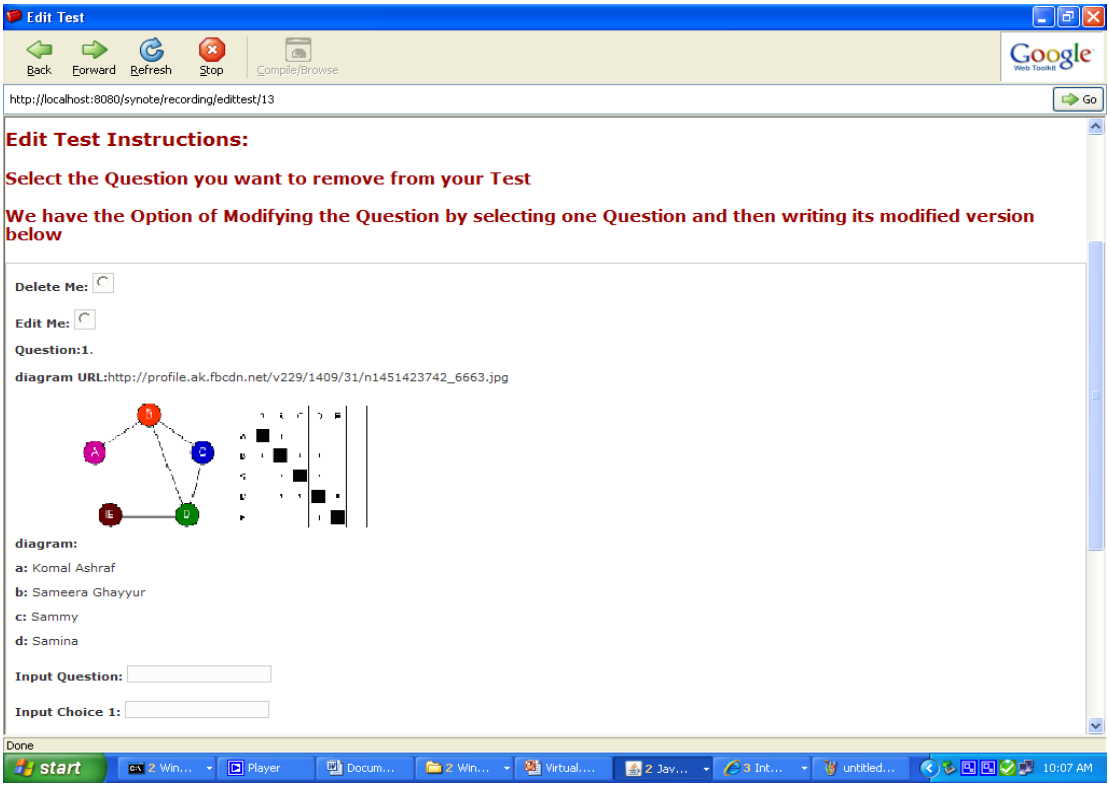
8.1.1 Student Evaluation and Testing



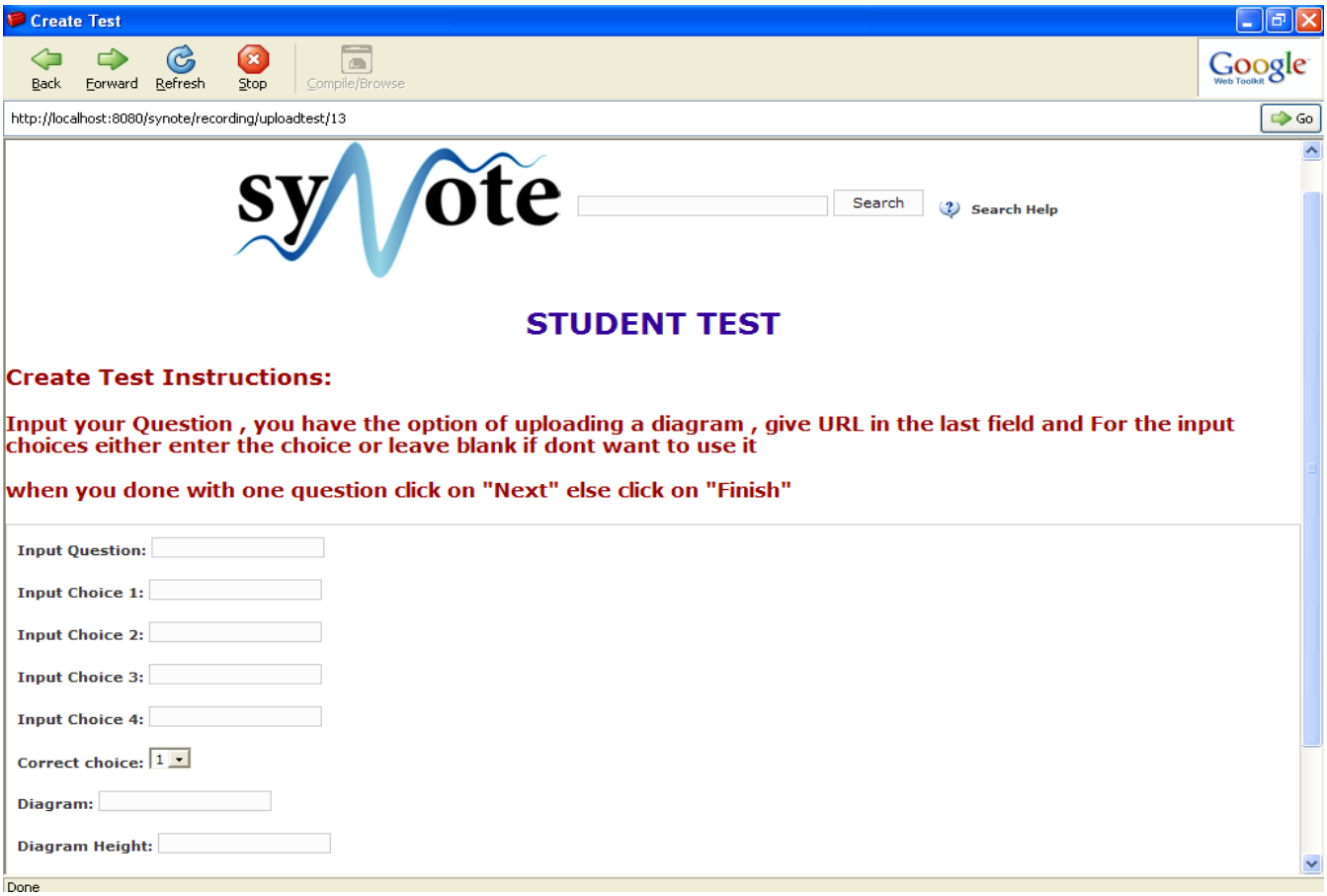
8.1.2 Testing Module (Take Test)



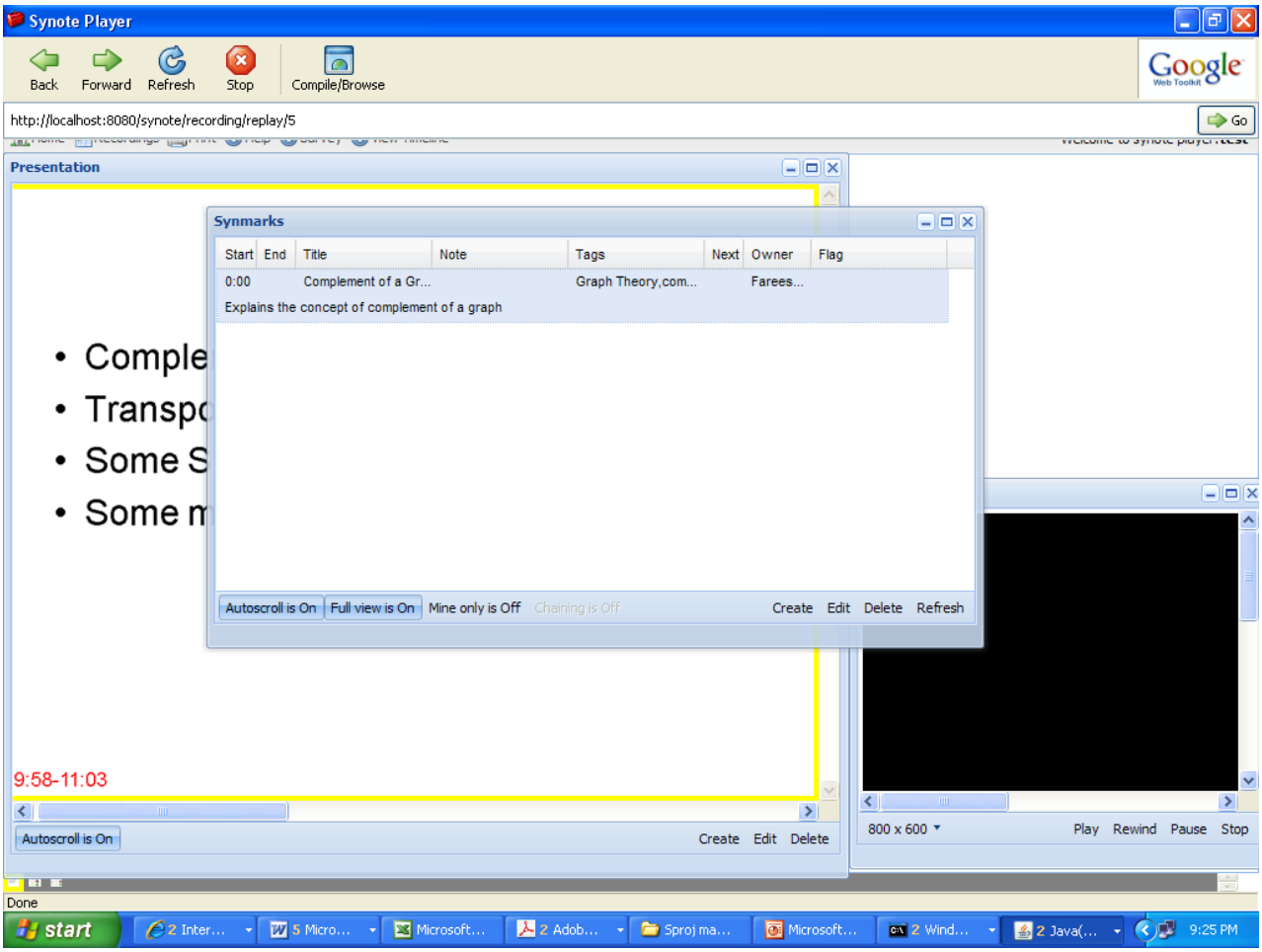
8.1.3 Edit Test



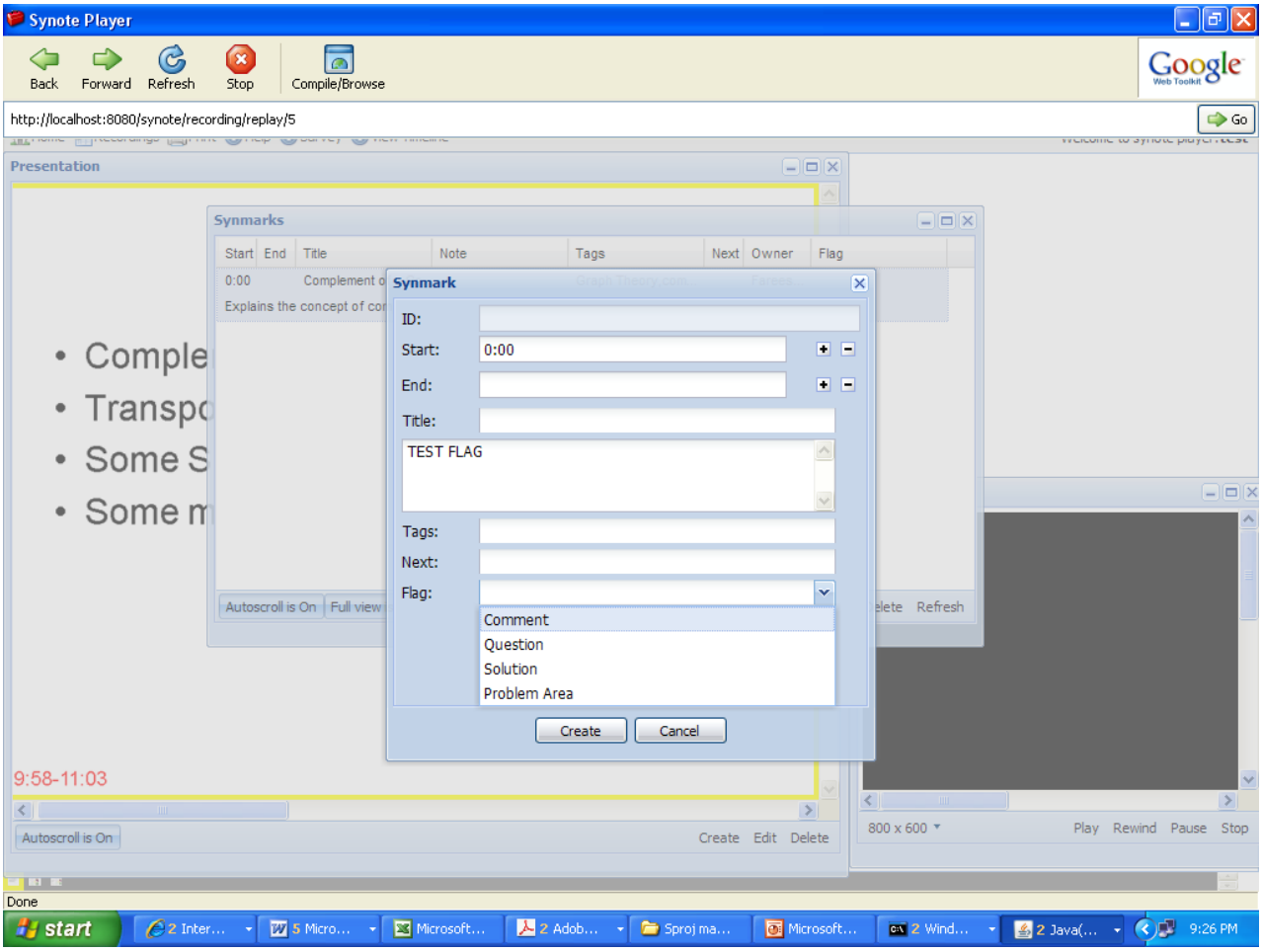
8.1.4 Create Test



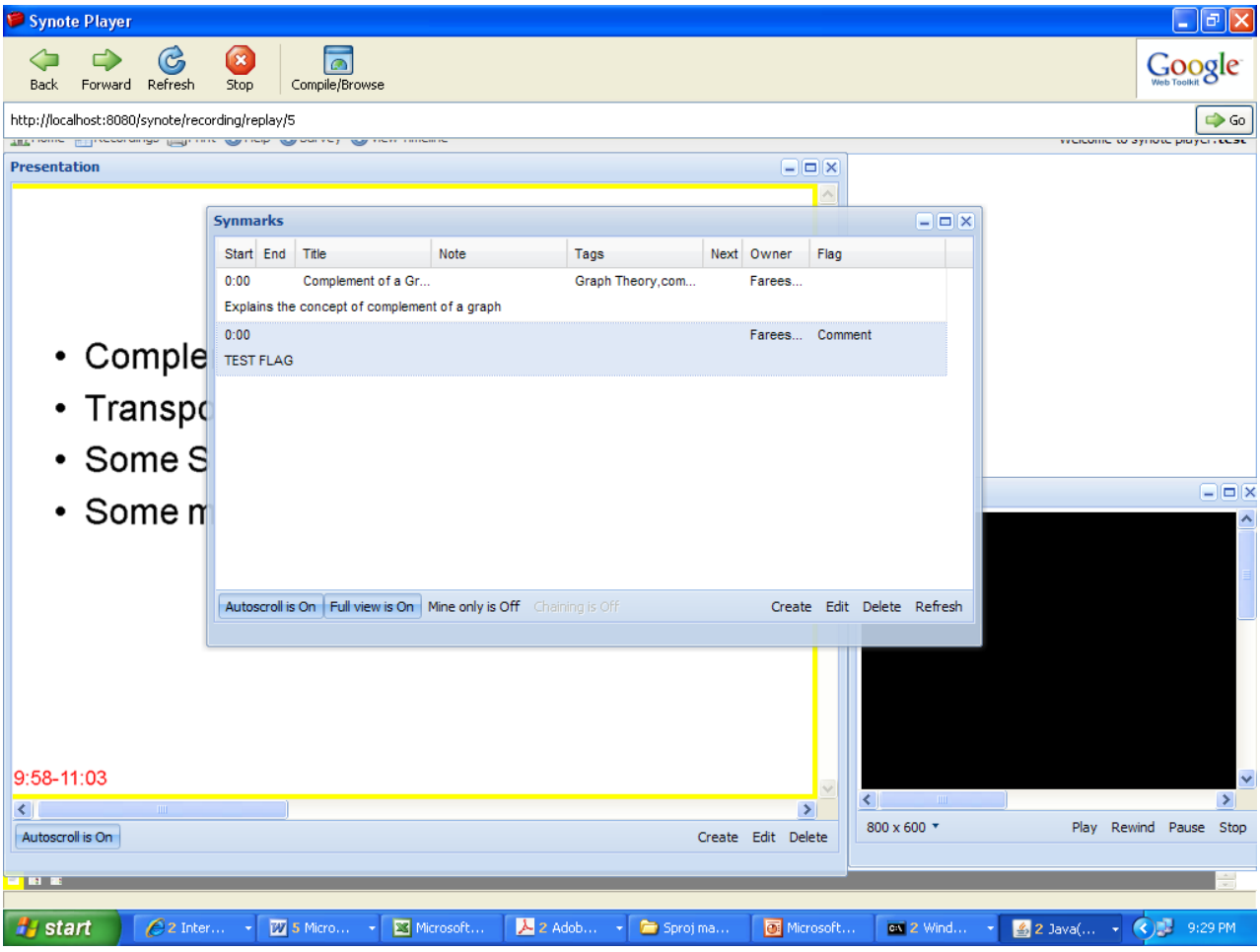
8.1.5 Symark


Synote Player
Back
Forward
Refresh
Stop
Compile/Browse
Google
Web Toolkit
http://localhost:8080/synote/recording/replay/5
Go
Presentation
Synmarks
Start
End
Title
Note
Tags
Next
Owner
Flag
0:00
Complement of a Gr...
Graph Theory,com...
Farees...
Explains the concept of complement of a graph
Autoscroll is On
Full view is On
Mine only is Off
Chaining is Off
Create
Edit
Delete
Refresh
9:58-11:03
Autoscroll is On
Create
Edit
Delete
800 x 600
Play
Rewind
Pause
Stop
Done
start
9:25 PM

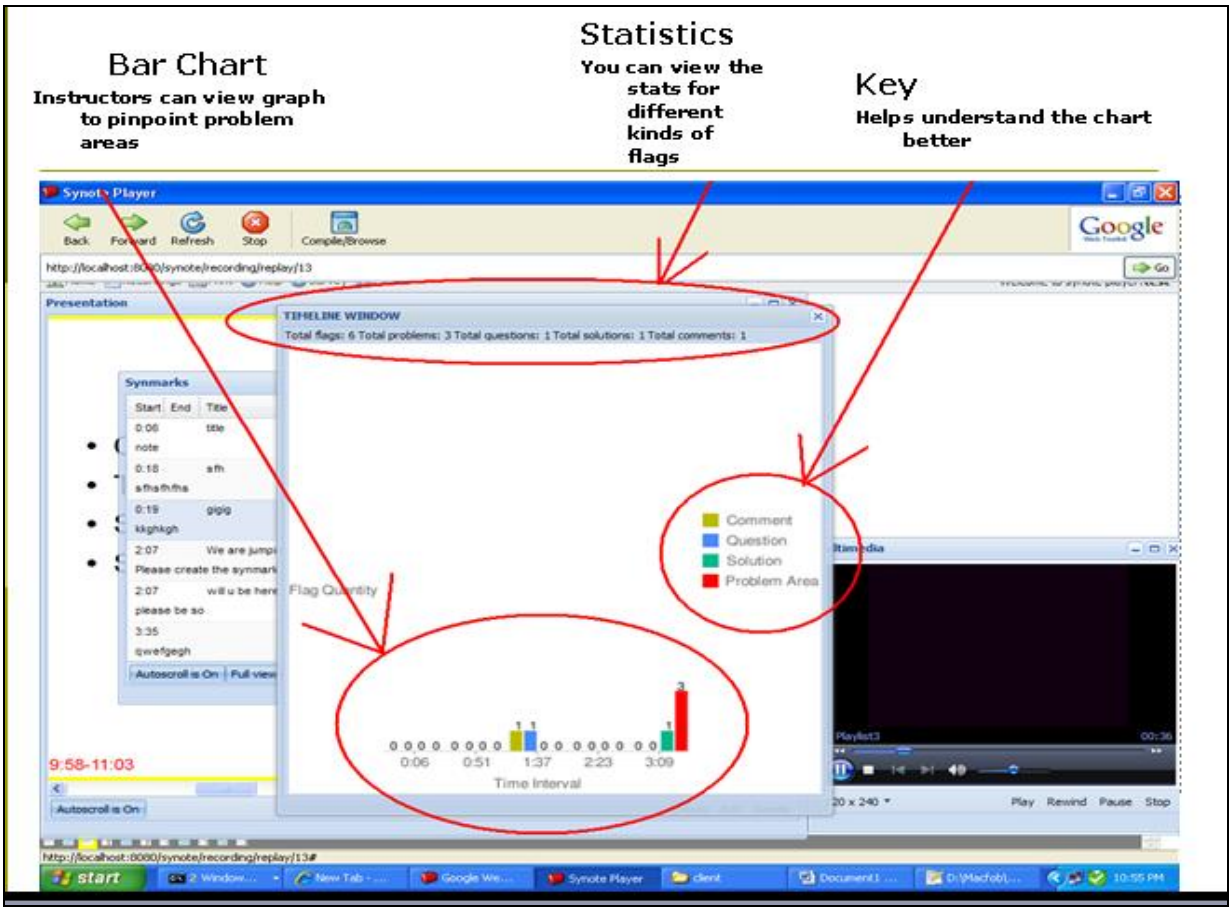
8.1.6 Flag selected from drop-down list



8.1.7 New Synmark



8.1.8 Timeline for flags



8.1.6 Concept Map for student to flip through in his own pace