



Using Technology to Provide Multimodal Learning Opportunities and Enhance Student Engagement in Face-to-Face and Online Courses

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Abstract



- ▶ This poster showcases how the presenters incorporate a variety of technologies, media and interactive elements to provide multimodal learning opportunities and enhance student engagement in both face-to-face and online courses. It highlights the pedagogical, logistical and evaluative considerations of creating a multimodal environment that will address the needs of a wide range of students with diverse backgrounds and learning styles, including whether student learning outcomes are achieved.

Multimodal Learning Approaches: Online Courses

- ▶ Text – Mini-Lectures, course textbooks, supplemental readings
- ▶ Online office hours – Chat Room
- ▶ Podcasts (“Fireside Chats”)
- ▶ Pleasing graphics, photographs and icons; attractive color scheme; consistent format, organization and flow
- ▶ PowerPoint presentations
- ▶ Weekly online Discussion Forums – with instructor feedback and peer review
- ▶ Hands-on exercises with software
- ▶ Real-world projects (accident scene reconstruction; competitive intelligence analysis methods; comprehensive business plan with all of the elements, including financial statements; case studies)
- ▶ Self-reflection through pre-tests and post-tests
- ▶ Self-reflection through comparison with industry panels

Multimodal Learning Approaches: Face-to-Face Courses

- ▶ Text – Lectures, course textbooks, supplemental readings
- ▶ Weekly study hall
- ▶ PowerPoint presentations
- ▶ Online Discussion Forums – with instructor feedback
- ▶ Hands-on exercises with software
- ▶ Real-world projects using web applications to solve problems
- ▶ Self-reflection on a student's engagement, retention and behavior
- ▶ Supplemental website with solutions to the lab assignments, live applications and sample student projects
- ▶ Group projects with peer evaluation

Assessment Measures Used

- ▶ The presenters use a combination of techniques and technologies to provide both formative and summative feedback to students so that students are actively engaged in their own learning and have a clearer view of their performance and what is required to achieve excellence in their courses.
- ▶ Among these assessment methods are self-reflection, peer review, pre-tests and post-tests, group projects, discussion forums, online and paper-based quizzes, real-world projects, homework assignments, labs using software and oral presentations.
- ▶ In terms of self-assessment, preliminary results indicate that students tend to be honest to almost harsh in evaluating their own participation in class on such elements as engagement, attention and behavior.
- ▶ Moreover, peer evaluation provides an opportunity for more regular and robust feedback throughout the semester beyond what the faculty member can provide, especially in courses with large enrollment.
- ▶ One goal of multimodal learning is to promote student-student and instructor-student interaction, especially in online courses.

Group Work Using Technology

- ▶ Team Projects – in INFO I210, INFO 211, INFO I421
- ▶ In INFO I421, groups of 3–4 students:
 - Identify a real client outside of the school and interview the client about his/her database management needs
 - Design a system that supports the needs of the client
 - Build the database management application
 - Document the project
 - Present their project in four stages to the entire class
 - Conduct a peer review of each other
 - Faculty member grades the team, but adjusts it based on peer review information from the students on that team

Real-World Projects Using Software

USA State Capitals Game

This game is powered with **AJAX**: a technology promising better user experiences.

Instructions: This simple game tests your knowledge of US State Capitals. The computer randomly choose a State. You type the Capital of the State into the text box. The computer evaluates your answer automatically. Your answers are case insensitive. You earn 2 points for each correct answer. To skip a State, press the "Skip State" button or simply hit the "Enter" key. The game is timed and 5 minutes are all you have. Click the "Start" button to start the game now.

Important Note: Your browser must accept cookies for the game to work properly. The cookie is temporary and is destroyed when you exist the game.

BE QUICK. BE SMART

Time Remaining: 04:50 State: West Virginia Your Score: 0

Capital:

Start Skip State Reload

Creating the U.S. State Capitals game in INFO I211

Supplemental V x Kung Fu Panda Medi x
 https://www.indiana.edu/~i211/kungfupanda_mvc/ Thursday, March 27, 2014

KUNG FU PANDA Media Library!

An interactive application designed with MVC pattern

Welcome to KUNG FU PANDA Media Library!

This application is designed to demonstrate the popular software design pattern named MVC. The application hosts four different medium objects: movie, book, music cd, and game. The movie library is complete. The partially completed book, cd, and game libraries are to show how easy it is to host additional medium objects. The application is meant to be flexible and extensible.

Major features include:

- List all media
- Display details of a specific medium
- Add new medium
- Update or delete an existing medium
- Search media by words in title
- Autosuggestion implemented with AJAX
- Filter media
- Sort media

Click an image below to explore a library. Click the logo in the b




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Supplemental V x List All Movies x
 https://www.indiana.edu/~i211/kungfupanda_mvc/movie/index Thursday, March 27, 2014

KUNG FU PANDA Media Library!

An interactive application designed with MVC pattern

Movies in My Library Search movie by title: Go

Include: G PG PG-13 R Refresh

Title	Rating	Release Date	More Information
The Shawshank Redemption	R	1994-10-14	More about The Shawshank Redemption
The Godfather	R	1972-03-24	More about The Godfather
The Godfather II	R	1974-12-20	More about The Godfather II
The Dark Knight	PG-13	2008-07-18	More about The Dark Knight
Inception	PG-13	2010-07-16	More about Inception
Chocolat	R	2001-01-19	More about Chocolat
Raiders of the Lost Ark	PG	1981-06-12	More about Raiders of the Lost Ark
Life is Beautiful	PG-13	1999-02-12	More about Life is Beautiful
Aladdin	G	1992-11-25	More about Aladdin
Secret of the Wings	G	2012-08-16	More about Secret of the Wings

[Add new movie](#)

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Creating the
 Kung Fu Panda
 Media Library
 application

Thursday, March 27, 2014



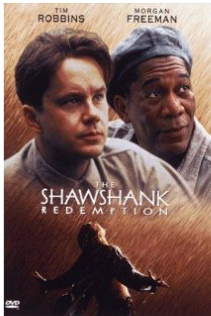
Media Library!

An interactive application designed with MVC pattern



Movie Details

Search movie by title:



Title: The Shawshank Redemption
Rating: R
Release Date: 1994-10-14
Director: Ric Roman Waugh
Description: Two imprisoned men bond over a number of years, finding solace and eventual redemption through acts of common decency.

[Back to movie list](#)

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Media Library!

An interactive application designed with MVC pattern



Add Movie

Search movie by title:

Title: *

Rating: G PG PG-13 R

Release Date: * (yyyy-mm-dd)

Director: *

Image File: * (include file extension. e.g. .jpg, .png)

Description:

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Creating an accident reconstruction in INFO I470

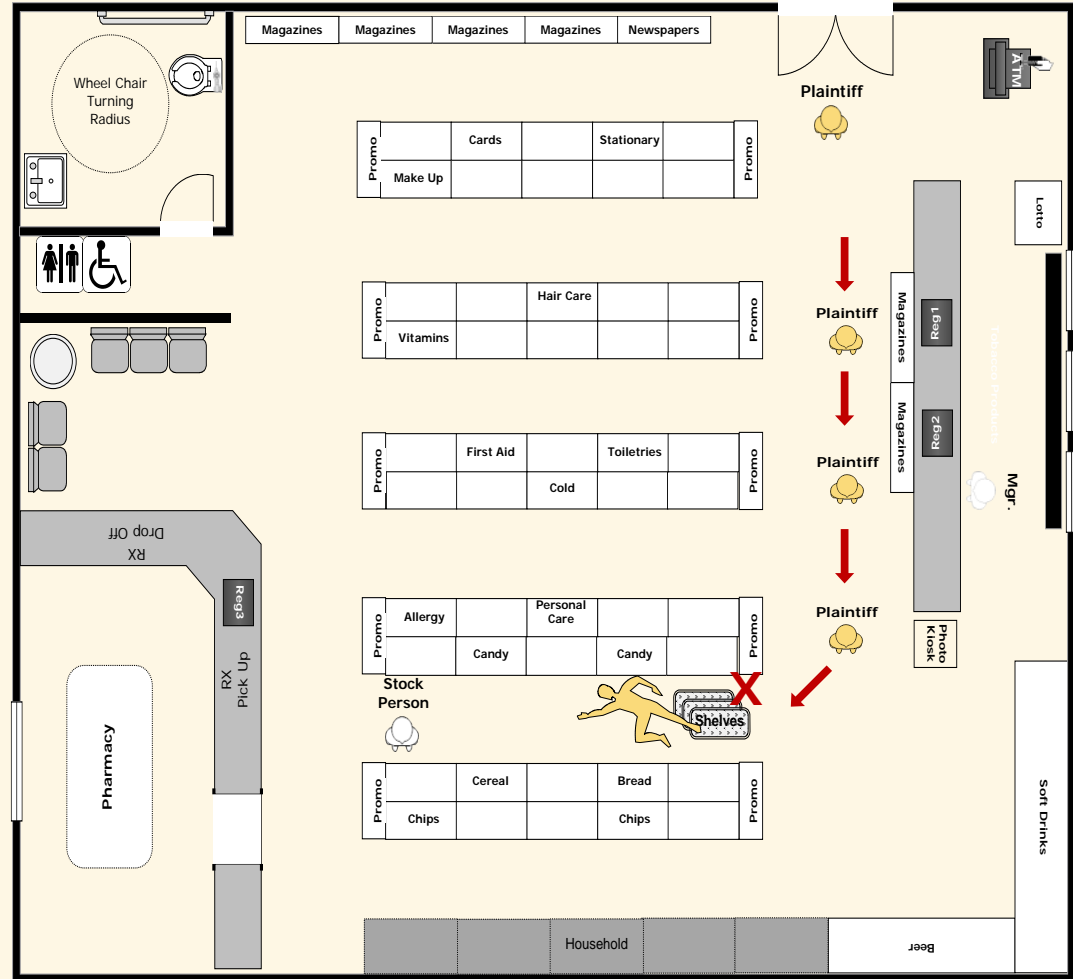
Accident Description:

Plaintiff arrived at the pharmacy to pick up her prescription. She entered through the main entrance and crossed the front of the store.

She proceeded to walk toward the candy aisle.

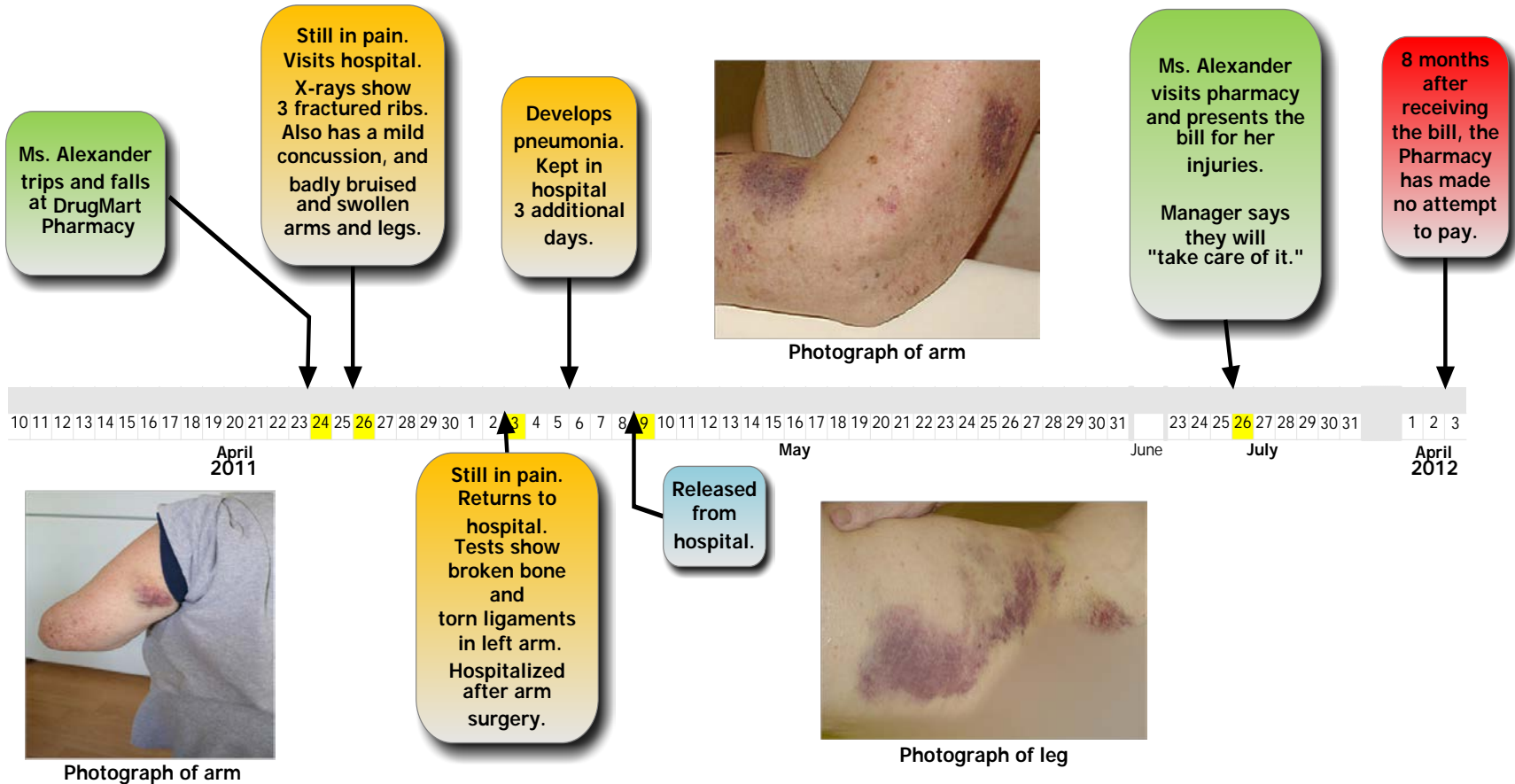
Upon turning up the aisle, she tripped over shelving units which were placed on the floor.

The fall resulted in the plaintiff's injuries.



Pharmacy

Creating a timeline in INFO I470





For More Information

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