R²D² TECHNOLOGIES

TEST PLAN

R2D2 TECHNOLOGIES

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I. INTRODUCTION

The Bookstore Order System ("BOS") is a web application designed to work in all current web browsers, including their mobile counterparts. The application's focus on inclusion is predicted to result in a higher frequency of errors. In preparation, the BOS will incorporate a number of tools and methods to handle them.

II. SCOPE

The testing the application will focus on creating, approving, searching, and printing or exporting orders from the Bookstore and accessing the application as a Lead Instructor, the Department Head, or the Program Director. The system will also allow the Bookstore staff to process textbook orders and send email notifications on order statuses. Other major functions of the application will allow for the Administrator to create, modify, and delete user account access.

III. TESTING STRATEGIES

System Test

The focus of the system design is concentrated on the common use of the application by different entities. The application is ran from several devices across several platforms and each component of the application is tested for logical errors and design discrepancies.

Design Functionality Test

The design functionality serves to test all functions such as creating, searching, printing, modifying, and deleting textbooks, orders, and users. All are tested for precise interaction and execution.

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The API Test

This will test the interface between Bookstore Order System and book suppliers. Communication between BSO and suppliers will be analyzed for filtering accurate results that migrate into the BSO record system with no mismatched data.

Data Record Query Test

The data record query test will examine the process of adding new records, searching for and retrieving stored records. An analysis on each process involved with stored data will be performed to verify full functionality.

Records Printing and Exporting Test

Exporting records to printable and external documents will be tested for accurate format conversion.

IV. TESTING TOOLS

Tools used in testing will include MySQL, the HostGator cPanel toolkit, Visual Studio, StormPHP, and Excel. All major web browsers will be used in testing.

V. FUNCTIONS TESTED

⇒ The Bookstore Order System uses a serious functions and queries combinations in PHP, JQuery, MySQL, and an API. Each function call either retrieved data from or populated form information to be posted to the database. The functions, their queries and the API were all tested for logical errors, and many of the functions used try/catches for an possible exceptions.

⇒ All data was tested for correctness. The application was tested with several different types of inputs to insure records are being stored in the database with the accurate data types. Several test cases were used to retrieve the data input from the database to insure the data was retrieved complete and accurate.

⇒ The user interface was tested across several browser for visual and performance issues, this included Google Chrome, Internet Explorer 11, Edge, Firefox, and Safari.

⇒ Application input, removal, edits, and deletion functions were all tested for with multiple types of data.

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Test Case Summary List

Pass	Fail	Test Case
X		Display and interface are compatible and consistent with all web browsers
X		Integrates with all browser functionality (touch screen/mouse, refresh, back page and forward page buttons)
X		The user interface always routes correctly
X		Data entries validate properly and data formats prevent erroneous entries
X		Records store and retrieve successfully
X		Modifying and removing records does not destabilize the record system
X		All possible unsuccessful attempts at searches, storing data and retrieving data are handled
X		The record system maintains a backup process
X		Automated system processes monitor and alert on system stability events
X		Mitigation systems for unusual record data
X		System communicates effectively with book suppliers
X		System filters out irrelevant search results
X		System successfully migrates search result information into the records system
X		All user access levels only access appropriate functions
X		Supports simultaneous users, prevents concurrency faults
	X	Printing system produces accurate format conversions and results
	X	Exporting system produces functional external documents
X		Try/Catch statements prevent all possible exceptions
X		No code insertion vulnerabilities
X		The system is stable

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VI. MAJOR DEFECTS FOUND

- Email notifications not being sent with order status change.

  Possible Solution: Use of triggers to listen for change on order status.

- Report page doesn't display when trying to export.

  Possible Solution: Use JQuery event listeners, and PHP to export the page out to a print format and excel table.

- Last login table not updating in the database.

  Possible Solution: Revisit the LastLogin function in the code to check and see if the datetime method is proper working.

- Books images are displaying incorrectly if they are larger than the default image.

  Possible Solution: Resize the saved images to account for change in screen resolution when viewing.

VII. SUMMARY

Though our application may have few bugs and functionality glitches, the applications works exceptionally well. We have worked to remove all major bugs and to keep application stable and functioning. The Bookstore Order System components all work as they should and data integrity is validated by the output from the API and the tables being displayed.