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BOOKSTORE ORDER SYSTEM

FUNCTIONAL SPECIFICATIONS

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DEFINITIONS, ACRONYMS, AND ABBREVIATIONS

API: In computer programming, an **application programming interface** (**API**) is a set of subroutine definitions, protocols, and tools for building application software. In general terms, it is a set of clearly defined methods of communication between various software components. A good API makes it easier to develop a computer program by providing all the building blocks, which are then put together by the programmer. (en.wikipedia.org)

HTTP: HTTP means HyperText Transfer Protocol. **HTTP** is the underlying protocol used by the World Wide Web and this protocol defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands. (webopedia.com)

IMAP4: Internet Message Access Protocol, version 4 is a more complex protocol, which provides more extensive functionality than is available through POP3. With **IMAP4**, clients can not only retrieve messages from a server, but they can also manipulate the remote message folders (or mailboxes) in which the messages are stored. (msdn.microsoft.com)

ISBN: The International Standard Book Number (**ISBN**) is a unique numeric commercial book identifier. An ISBN is assigned to each edition and variation (except reprintings) of a book. For example, an e-book, a paperback and a hardcover edition of the same book would each have a different ISBN. (en.wikipedia.org)

IT: Information Technology

MAX: Maximum

MIN: Minimum

POP3: POP3 is a protocol for receiving email by downloading it to your computer from a mailbox on the server of an Internet service provider. (google dictionary)

SQL: **SQL** (pronounced "see-que-el") stands for Structured Query Language. SQL is used to communicate with a database. According to ANSI (American National Standards Institute), it is the standard language for relational database management systems. (sqlcourse.com)

UI: In information technology, the user interface (**UI**) is everything designed into an information device with which a person may interact. This can include display screens, keyboards, a mouse and the appearance of a desktop. It is also the way through which a user interacts with an application or a website.

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PROJECT DEFINITION

The Bookstore Order System is a database-driven web application designed to facilitate the book ordering process for members of the college's faculty. Staff members will be provided a login by the college's IT department; the provided logins will be used to access the site. The authentication will then set the role of the user based on their position at the college and enable or disable features accordingly. The main features of this application are the ability to view previous orders, view the status of current orders, and place an order – which includes both new orders and reorders. Other features include email notifications and order updating. Order updating will be handled by bookstore staff, who will also be provided with a login.
The development cycle for this project will consist of five phases: Documentation, Database Development, Application Development, Testing, and Finalization.

PHASE ONE, "Documentation," will consist of organizing both the group and the ideas surrounding the project. This includes drafting functional specifications and system design specifications.

PHASE TWO, "Database Development," will consist of creating and setting up the database. This will be a multi-stage phase, first beginning with an analysis of the system – a paper exercise in which the data will be sorted into tables, key relationships will be examined, and all data normalized. The next stage will be the creation of the database followed by testing.

PHASE THREE, "Application Development," will consist of developing the user-interface and the functionality of its back-end.

PHASE FOUR, "Testing," will run concurrently with the previous phase. It will, however, feature a 'longer' deadline as finding and fixing bugs on the nearly-complete application will shift to highest priority.

PHASE FIVE, "Finalization," will consist of application review and further documentation. Documents that have changed, due to feature inclusion or feature exclusion, will be updated accordingly. Furthermore, this phase will include the creation of a user-guide and will be capped with a general review of how the project currently stands against what was requested. This phase will end with the submission of the project.

CURRENT SYSTEM

At the time of writing, the system currently stands in the waning section of Phase One. The team has finished and furnished a number of documents pertaining to the creation of the team, delegation of responsibilities, and a general plan for the project. The team is currently in the process of creating a functional specification and relevant diagrams and will move towards creating documentation for the database in the following weeks.

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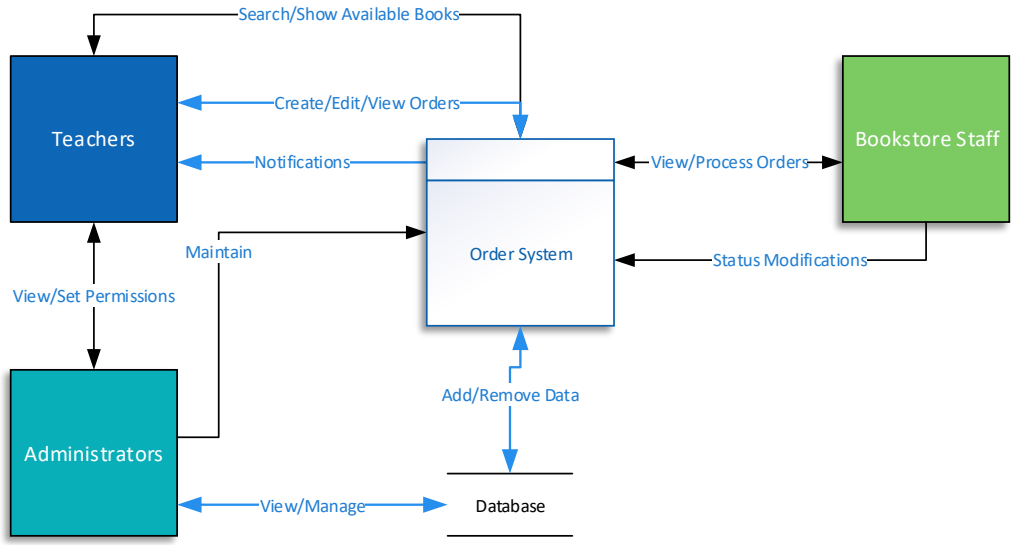
SYSTEM CONTEXT DIAGRAM



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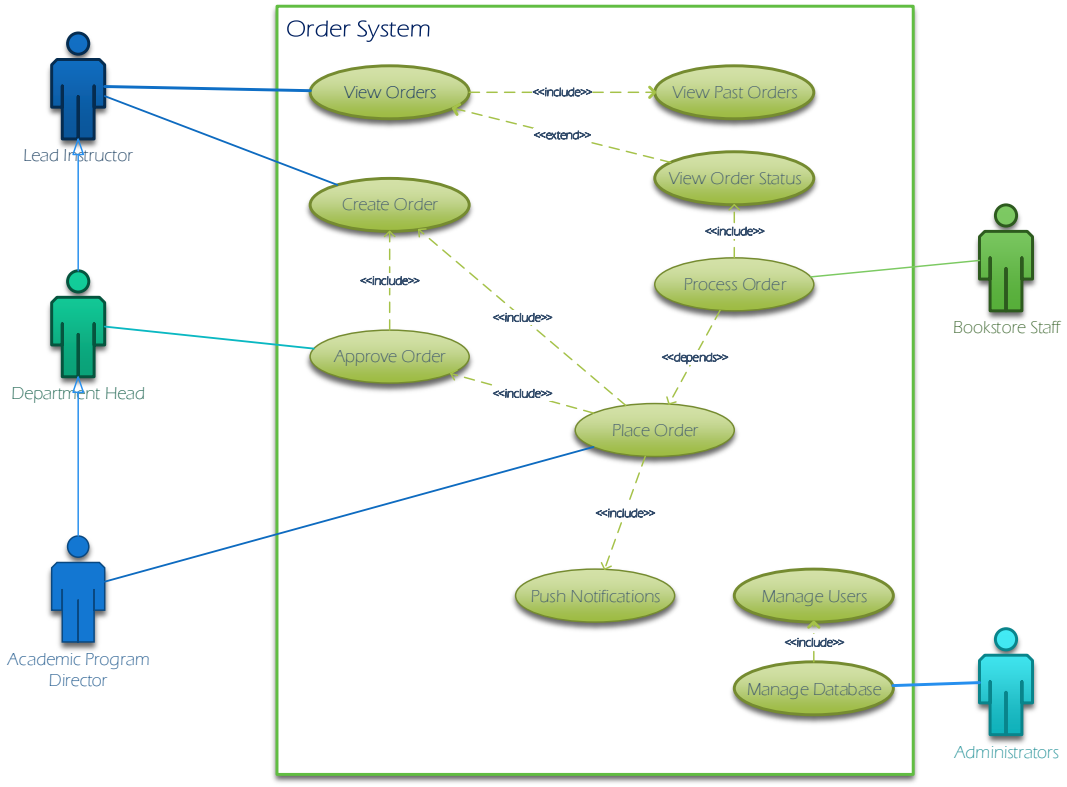
USE CASES

Objective: Produce, view, process, and manage orders for the college bookstore.

Primary Actors: Lead Instructors, Program Director, Department Head, Bookstore Staff.

Use Case (a)



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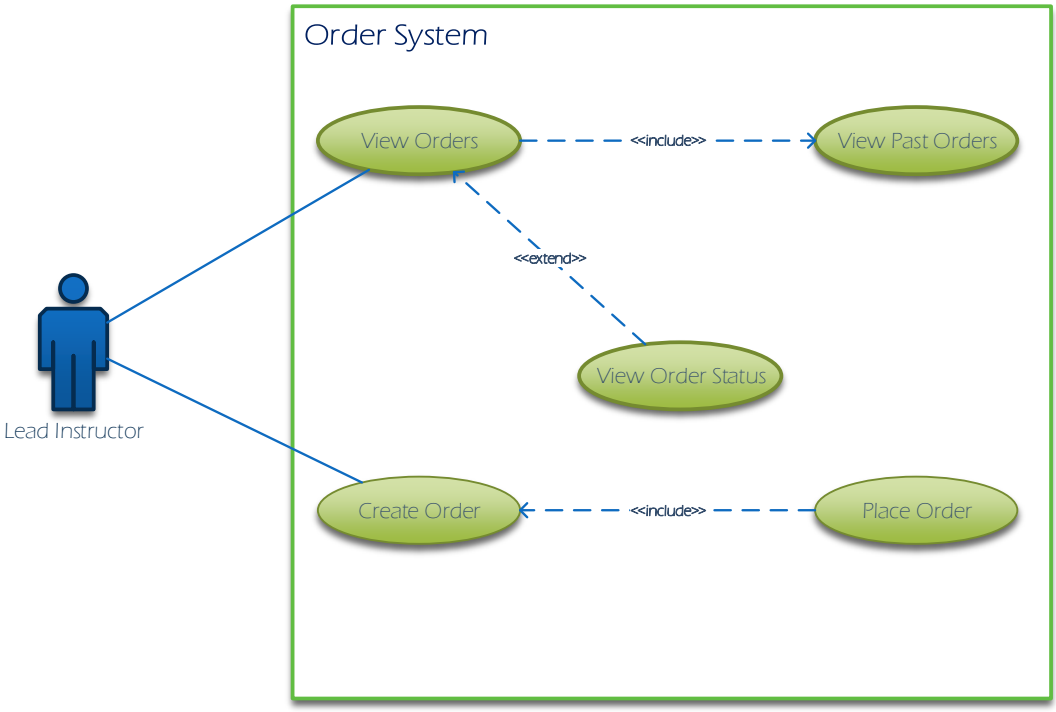
Objective: View previous and create orders

Primary Actors: Lead Instructors

Use Case (b)



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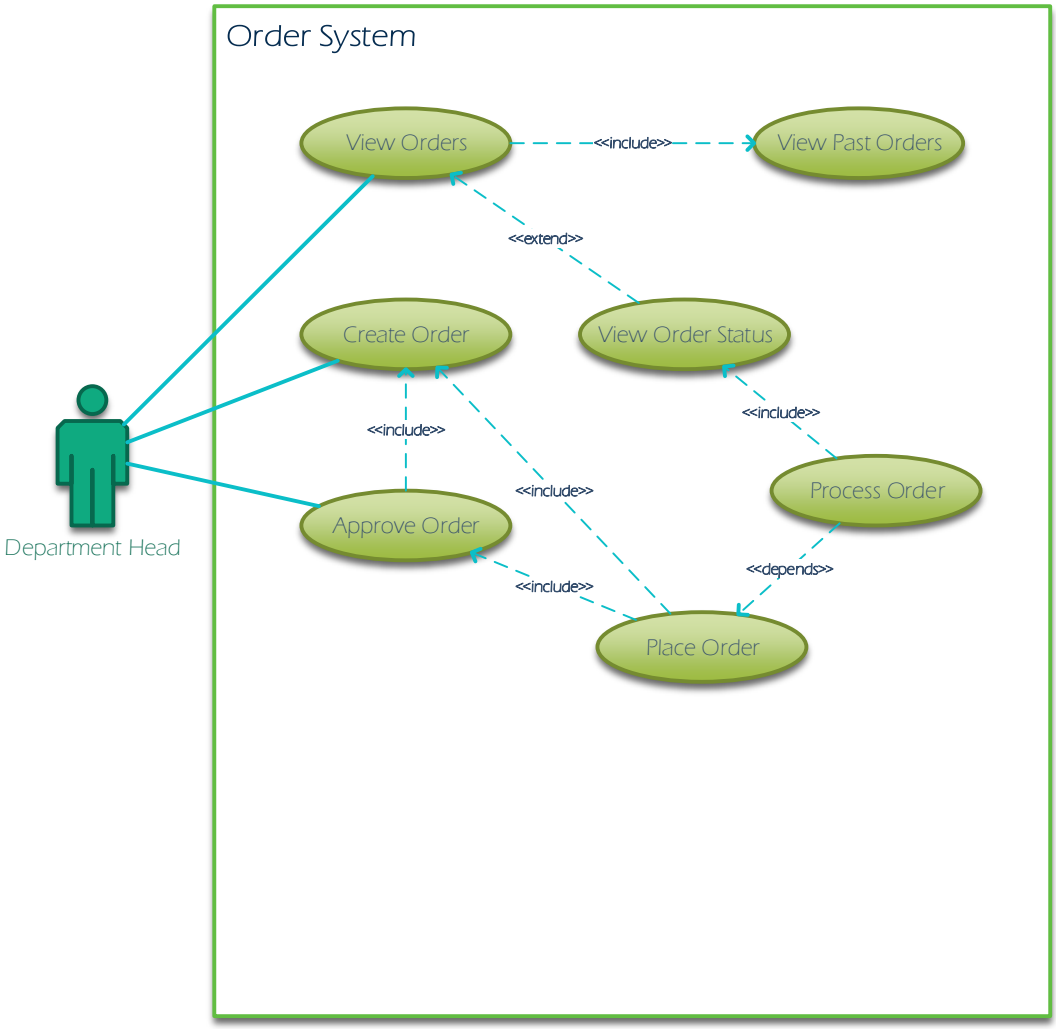
Objective: View previous, create, approve, and place orders

Primary Actor: Department Head

Use Case (c)



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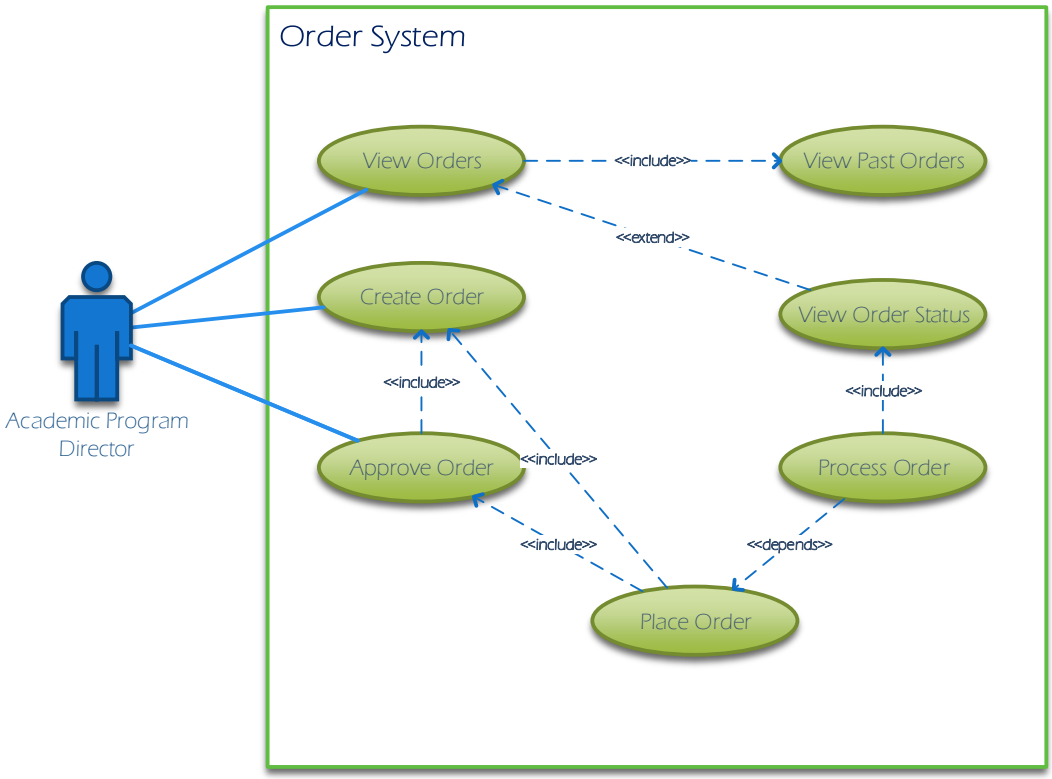
Objective: View previous, create, approve, and place orders

Primary Actor: Academic Program Director

Use Case (d)



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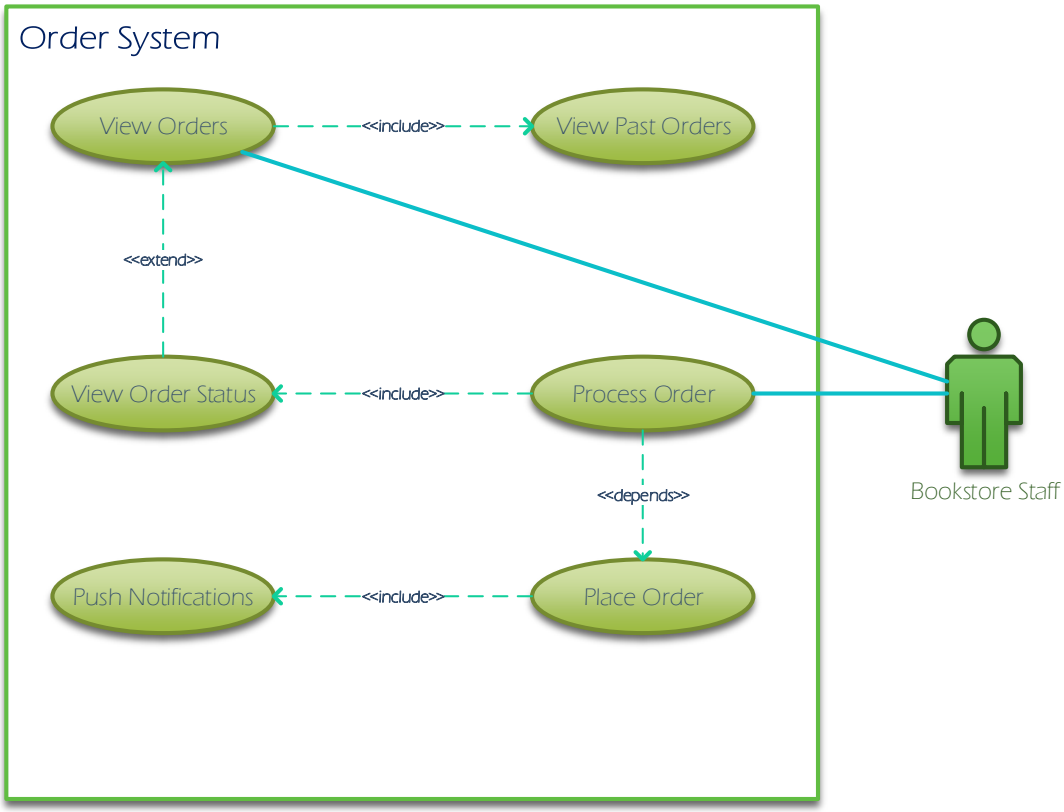
Objective: View previous, view order status, and process orders

Primary Actors: Bookstore Staff

Use Case (e)



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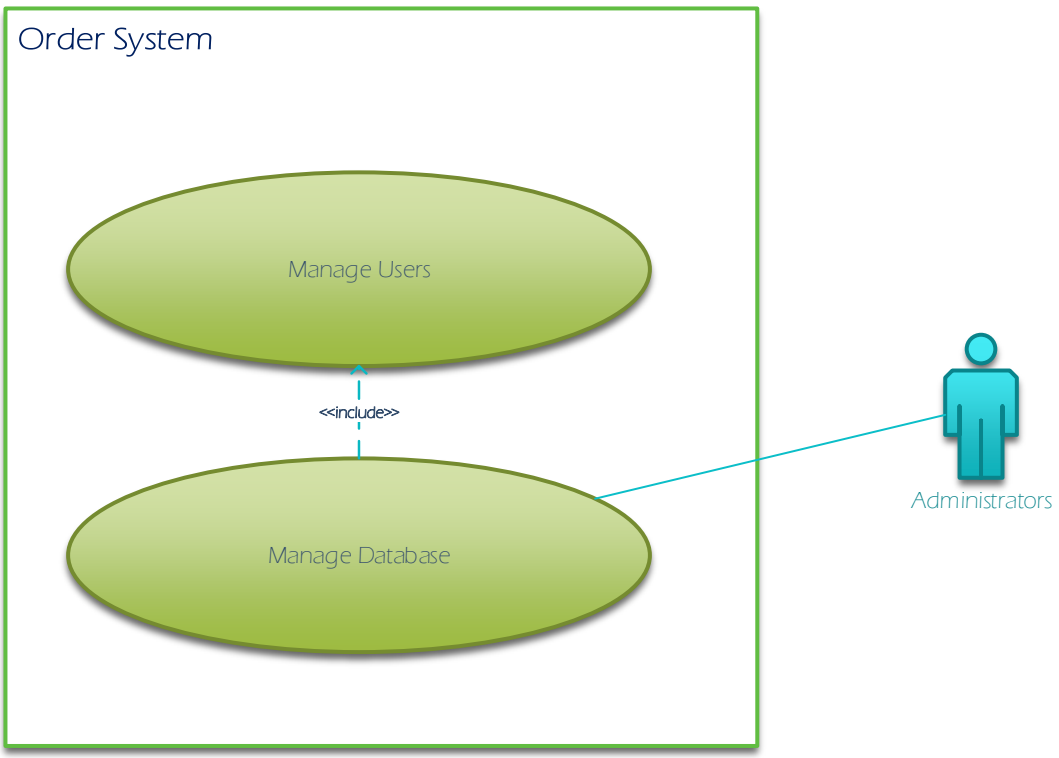
Objective: Manage database and create user login account and access levels

Primary Actor: Administrator

Use Case (f)



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Use Case: Book Searches and Past Orders	
Actor	Teachers and Above.
Description	Describes the search process.
Successful Completion	1. Actor requests a specific publication. 2. Software queries available suppliers for publication. 3. Query results are sorted and viewable.
Alternative	1. Actor searches previously placed orders. 2. Available suppliers are queried for previously ordered publication. 3. Query results are sorted and viewable.
Precondition	None.
Postcondition	Availability is determined.
Assumptions	That access level has been assigned.

Use Case: Create Order	
Actor	Lead Instructor and Above.
Description	Creating an order request.
Successful Completion	1. A search result is selected. 2. Course information, quantity, and additional comments are entered. 3. Order request is submitted.
Precondition	A search query or past order selection has been performed.
Postcondition	The order request begins an approval process.
Assumptions	That access level has been assigned.

Use Case: Approve Order	
Actor	Department Head or Academic Program Director.
Description	Approving an order.
Successful Completion	1. The order request is reviewed. 2. Modifications to the order, if necessary, can be made. 3. Approve or deny order request.
Precondition	An order request.
Postcondition	Order moves to placement.
Assumptions	High access level.

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Use Case: Place Order	
Actor	Academic Program Director.
Description	Confirming a book order.
Successful Completion	1. Approval process is complete. 2. Orders are placed.
Precondition	Approval process.
Postcondition	Order moves to processing.

Assumptions	Final step in selection.

Use Case: Process Order and Change Order Status	
Actor	Bookstore Staff
Description	Initiating and processing book orders.
Successful Completion	1. Book order is sent. 2. Order updates (confirmation, shipping, delivery) are noted. 3. Books arrive and are stocked.
Alternative	1. Book order update requires action. 2. Order is modified, or removed. 3. Notifications are sent of changes.
Precondition	Successful or rescinded orders.
Postcondition	Books are stocked.
Assumptions	All previous steps successful.

Use Case: View Order Status	
Actor	All Relevant Users
Description	Viewing the status of a non-stocked order.
Successful Completion	User views order.
Precondition	Order is not yet stocked
Postcondition	None
Assumptions	Order exists in database.

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FUNCTIONAL SPECIFICATIONS

Appendices

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Appendix A: Task List

TASK AND RESPONSIBILITIES

NAME	POSITION / FUNCTION
Roderick Oliver	Project Manger
Daniel Greer	Lead Database Architect/Analyst
David Slama	Database Architect/Analyst
Ray Hill	Lead UI Developer
Roderick Oliver	UI Developer
Roderick Oliver	Lead Application Developer
David Slama	Application Developer
Ray Hill	Technical Writer
Roderick Oliver	Technical Writer

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Appendix B: SDSSIC Chart

SYSTEM REQUIREMENTS

System Input: *The system must be able to accept all of the following but not limited to*

⇒ ISBNs
⇒ Semester Month/Year
⇒ Course Code
⇒ Course Start Date
⇒ Phone numbers
⇒ Email Addresses

Data Processing: *The system must be able to perform all of the following but not limited to*

⇒ Process SQL statement to search the data records
⇒ Modify database tables and records with product change
⇒ Compare time and date stamps for matching records
⇒ Compare Min/Max quantities for matching records
⇒ Backup and store all previous, current, and future data
⇒ Create itemized product reports
⇒ Email notifications

System Output: *The system must be able to produce the following output*

⇒ Emails and printable content
⇒ Book Title, Author, Edition, ISBN, Publisher, Semester, etc.
⇒ Semester, Course code, Campus Name, and bookstore location
⇒ Order date and order quantity
⇒ Email notifications for order approvals and order status

Storage & Backup: *The system must maintain the following data*

⇒ MySQL Server Database
⇒ Backup files stored

Interface Requirements: *The system must be accessible from the following but not limited to*

⇒ External system interfaces (desktop and laptop computers)
⇒ Mobile devices (mobile phones, tablets, notebooks)

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Communications interfaces: *The system must be able do the following but not limited to*

⇒ Transmit information via the network to the sever using HTTP protocols
⇒ Send email over the network using POP3 or IMAP4 protocols
⇒ Process information from the user interface using SQL statements
⇒ Send to, and retrieve data, from external database via web APIs

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Appendix C: Feasibility Analysis

Operational Feasibility:

The capabilities in which the Bookstore Order System will provide is an intuitive way for Greenville Technical College, bookstore to be able to catalog all textbooks ordered for previous, current, and future semesters. Giving the Lead Instructors, the Program Director, and the Department Head, more transparency and visibility of textbooks ordered for the program curriculum. The ability to use the application will take very little training and therefore should not interfere with any responsibilities the CPT may already be committed to.

Technical Feasibility:

The technical components for the Bookstore Order System include the using of a MySQL compatible server, a hosting domain with email protocols capabilities, with the ability to send and receive emails. The CPT department currently are running servers that are compatible with MySQL and have email capabilities, and also have Microsoft Office O365, for retrieving emails and generating reports. Due to the college having met these requirements already, there should not be any constraints to prevent the application from working as it should.

Schedule Feasibility:

Due to the demanding timeframe in which this project has to be done, all the requirements associated with, and other deliverables for this project are to be, and has been, completed on-time. Because of the nature surrounding the project, the team is committed to assuring the delivery of a functioning, completed application. The success of the project will express that the team is dedicated to providing quality products and superb service.

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Team Sign-off,

_____
David Slama

_____
Ray Hill

_____
Daniel Greer

_____
Roderick Oliver