**E-COMMERCE**

420-411-VA

#### **ASSIGNMENT-2**

For this assignment you will validate your understanding of the Model View Controller (MVC) pattern and related concepts by extending it with business logic. You will work on an individual part and then integrate it with your teammates’ parts as a practice for the project.

You are also asked to research and read about various topics related to web applications.

For the parts that require code implementation, write the code in specific php files and submit the files as a compressed file with this document.

You need to demo your submission to the teacher in class.

**Group work.**

* Push the latest MVC code to a common repository as a base code accessible by all team members, the same team as the project’s team.
* Each team member will Pull or Clone the base code to their local copy.
* Work on the individual parts below then Push your changes to the base code.
* Preserve the commit history to be presented as part of this assignment’s deliverable.

**Individual work.**

1. Research and then describe where should the business logic rules be implemented as part of an MVC:

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| Business logic refers to how we should display, interact and create data. So it will be almost entirely be implemented in the Model except for displaying the data to the user which will take place in the View. So in other words the model would have it all and the view would have the UI only. |

1. List and Describe the pros and cons of implementing the business logic rules in the code versus the database:

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| PROS in code:   1. Easier to read, update and manage in the source code 2. far easier to change without affecting/altering current database structure 3. when implemented in the code it is far easier to test using unit testing   CONS in code:   1. risk for inconsistent data in the database if its used by several apps 2. logic will have to be implemented in several different apps 3. might be slower for more complex logic which could be optimized in SQL   PROS in database:   1. Can be faster for data-heavy operations 2. Ensures rules are always applied regardless of the app accessing the database   CONS in database:   1. Stored procedures are harder to read and harder to debug 2. Managing and tracking changes in the database is more complex than in code 3. Logic written for one database (e.g., MySQL) may not work on another (e.g., PostgreSQL). |

1. Choose **only one, one rule per teammate,** of the business rules below and implement it as part of the MVC, you don’t need to implement the interface to test the rule, you may write the test as a unit test. Implement also the user input validation as per the function below:

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| // Rule 1: Employee Record Validation  // Ensure all employee records contain necessary details: first name, departmentID, and title.  // Rule 2: Project Record Validation  // Ensure all project records contain necessary details: name, and budget.  // Rule 3: Project Budget Validation  // Ensure all project records have a budget amount greater than zero.  // Rule 4: Department Record Validation  // Ensure all department records contain necessary detail: name.  // Rule 5: Employee Title Validation  // Ensure all employee records have the title only containing alphabetical characters. |
| **In addition to the business rule apply the following user input validation to the fields:**  // Function to validate user input  function validateInput($data) {  // Trim whitespace from the beginning and end of the input  $data = trim($data);  // Remove backslashes from the input  $data = stripslashes($data);  // Convert special characters to HTML entities  $data = htmlspecialchars($data);  return $data;  } |

1. **eCommerce Platform Features**

Research, list, and describe the features of an ecommerce platform that allows developers to deploy an out of the box ecommerce web application that is customizable depending on the needs of a company. The description and features must include but are not limited to:

* The name of the platform
* The company that provides the platform
* The technologies used by the platform
* The types of customizations it provides, meaning how a developer can extend or customize the platform
* The features it provides such as store creation, product management, and orders tracking
* The pricing model
* A list of companies that use the platform
* The current software version of the platform

1. **ECommerce Platform Business Aspects**

Define the terms below, and describe how they are implemented for an ecommerce website, using full comprehensive statements and in your own words:

* **Drop Shipping**

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| Drop shipping refers to the practice where a retailer sells product online without ever holding any inventory rather they send the products straight from the manufacturer to the customer. |

* **Multitenant**

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| Multi-tenant is term for a website that is shared amongst various online stores owned by different people which allows the whole system to operate at a lower cost increasing overall foot traffic. In a way you could compare this business aspect as a sort of online mall where many store owners sell their wares. |

* **Multi-store platform**

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| A multi-store-platform is similar to the multitenant in the sense that it houses several storefronts however it differs quite significantly since every storefront is for the same business on example would be walmart or amazon and how depending on where you are the page will change to reflect different catalogs, currencies or languages. |

* **Exit** **intent**

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| As the name implies an exit intent triggers when the user is about to exit the site and is designed to prevent the user from leaving many examples that exist are sudden discounts, cart reminders or free shipping offers anything and everything that would make the user want to stay for an extra 30 seconds to spend just that much more money |

* **Web** **analytics**

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| Web analytics is the practice of collecting any all data about how your user interacts with your online store in order to understand what they’re actually and to optimize your store for more traffic and higher revenue. Certain things that web analytics can tell you are which demographics does your user pertain to, where they are from, which pages they visited, what products they looked at and added to their cart and when do they leave, a very popular web analytics is Google Analytics. Another reason why analytics are important is for identifying which products are most popular, improve marketing campaigns, optimize checkout flow and most importantly to boost sales. |

1. **Payment provider integration**

Describe in brief the procedure, identify and list the steps for a developer to follow to implement the customer payment feature that integrates with a payment provider e.g., PayPal, in order for the ecommerce website to accept customers’ payments for orders.

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| 1. First step’s first is picking a payment provider in our case paypal 2. Create a paypal developer account to get access to sandbox/testing environments in order to test code in a isolated environment 3. Get API credentials in order to actually use the paypal API which allows the paypal transactions 4. Add the payment button 5. Verify the payment, save it on the database and fulfill the order if everything checks out 6. Using the sandbox test all flows making sure everything works as intended 7. Handle a successful transaction(email or pop-up) confirming it went through and display a failure message if it fails. 8. Swap in the real API keys and the app is up |