COS30041 Creating Secure and Scalable Software

Software Proposal for Distinction (D)

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Intended Grade: HD [In case of HD, your tutor will take into your HD Research proposal for consideration as one big project to judge your HD proposal]

Submission for Feedback (Week 6 – 7) and Final Approval (Week 8, Fri, 5:00pm)

[Note: Based on past experience, it will take at least 2 to 3 submissions to make it right. So, start early]

Instructions - This document is for students aiming to achieve Distinction (D) or above.

For **D grade**, a student needs to do a software application that can demonstrate their skills in developing enterprise application using **a variety of technologies discussed in this subject**. In judging whether your application will be approved or not, the lecturer will be looking into whether the student can utilize various technologies (e.g. as a guide 70%+ of those discussed in the subject) in the application.

For **HD grade**, a student needs to complete the software for D grade as well as a research report. For detailed requirements of the research report, please see the HD_Research_Proposal_Template document in 81_HD_Task_5.4.

Intended Learning Outcomes (extracted from Unit Outline)
1. Build and deploy secure and scalable application using contemporary frameworks
2. Explain and apply strategies, patterns and frameworks to address a range of scalability issues
3. Explain and apply strategies, patterns and frameworks to address a range of security issues
4. Use contemporary tools to evaluate the scalability and security of applications

SOFTWARE PROPOSAL for Distinction

Software Title: Ragib Televisions (website)

Introduction

I am planning on developing a web application where people find out information about different TVs available and can directly purchase them. Furthermore I wish to let 1 authorised user (i.e. manager/ admin account) view all these information in full details.

Business Scenario

A new Television Company plans on having a net outlet for their business in order to let customers order their goods online, instead of walking all the way to their store. Thus they want their customer to see all the TVs they have and also some general information about themselves and the TVs they sell. Furthermore, they also wish to have a secure access to the system in order to obtain the list of customers, products sold to them and their quantities in order to find the popularity of products and take notes of the product trends.

1. Software Requirements

1.1 Requirements Justification

Below is a brief list of functionalities for the software:

F1. Create myCustomer Table in database to collect, store the sale's information and their relevant logic

F2. Create myCustomer Entity Class as DAL (map to database table) and their relevant logic. It will contain the most basic logic to allow us to transfer data to and from the database without using the SQL directly

F3. Create myCustomerTransactionManagementFaçadeClass in the BLL and its relevant logic. It will serve as an interface to simplify the codes and contains most of the basic logic being used inside the methods in myCustomerManagedBean (except the very basic SQL ones)

F4. Create myCustomerDTO and its relevant logic. It will mainly transfer data from the web UI to BLL

F5. Create myCustomerTransactionManagementRemote Class (RI) and their relevant logic. It will be used to call the methods from the myCustomerTransactionFacade to the myCustomerManagedBean

F6. Create the myCustomerManagedBean class and their relevant logic. It will be the managed bean that will contain all the getters, setter and all the logic needed by the system

F7. Build websites for Home, Products, Owner Details webpages which will have information regarding general company, product details and owner details. It will be used in order to fulfil the Business's requirements in terms of Homepage, informing customers about television products and informing customers about company details,

F8. Build websites for Enquiry, Payment which will be used to collect all customer details (like first name, last name, email, street address, suburb, state, postcode, phone number, price, quantity of product, comment, credit card details, name on credit card, card number, card expiry date, CVV number). This will be used by the business to keep track of the transaction and be stored finally in the database following the respective method call and bean actions in the software *(see the current architecture diagram for clarification)*

F9. Build websites for manager for login, manager menu (where they will be able to view their transaction by using the transaction id). This will be used by the employees in the company to keep track of the customer's transactions and note product popularity and customer demand as per requirement

F10. Use glassfish's fileRealm to create the admin or manager accounts as it can be used to set up a role based security directly without going through any hassle of coding for it. So even if the database used to store the sales record table gets corrupted or changed, the company will not have to worry about losing their admin privileges.

1.2 Functionality and Technology Matrix

The following table shows the relevant technologies discussed in this subject that could be used to implement the functionalities as suggested in the Functionalities section above.

Functionality	Related technologies discussed in this subject (i.e. Java EE) + others, please specify. <<i.e. specify technologies used in each tire >>
F1	JavaEE and table Database tier
F2	JavaEE and entity class in DAL tier
F3	JavaEE and façade class and BLL tier
F4	JavaEE and DTO
F5	JavaEE and RI tier
F6	JavaEE and ManagedBean
F7	JavaEE and web browser (like firefox)
F8	JavaEE and web browser (like firefox)
F9	JavaEE and web browser (like firefox)
F10	JavaEE and File Realm in glassfish