

**SCHOOL OF COMPUTING (SOC)**  
**DIPLOMA IN INFOCOMM SECURITY MANAGEMENT**  
**ST0510 J2EE Application Development**

**2020/2021 SEMESTER 1**  
**ASSIGNMENT 2**

**A: Instructions and Guidelines:**

1. The assignment must be submitted by **16 August 2020 (Sun), 23:59 hrs**. You are required to submit your source codes to the BlackBoard (eSP). Remember to provide your Class, Group, Admission Number(s) and Name(s) on the softcopy.
2. Students are to work in a group consisting of 2 members.
3. Marks will be given separately for each student in the group, depending on his contribution to the assignment. The assignment will account for **15%** of your final grade.
4. The assignment should be implemented using JSPs, Servlets, HTML, Apache Tomcat, Eclipse and MySQL.
5. An interview will be conducted in the week of **17 Aug 2020 and 24 Aug 2020 (or as scheduled by your tutor)**. You may be expected to explain the program logic and modify the program during the interview. **If you are absent from the interview, you will be awarded zero mark for the assignment.**
6. **No marks will be awarded**, if the work is copied or you have allowed others to copy your work. **Warning: Plagiarism means passing off as one's own the ideas, works, writings, etc., which belong to another person. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turning it in as your own, even if you would have the permission of that person. Plagiarism is a serious offence and disciplinary action will be taken against you. If you are guilty of plagiarism, you may fail all modules in the semester, or even be liable for expulsion.**
7. 50% of the marks will be deducted for assignments that are received within ONE (1) calendar day after the submission deadline. No marks will be given thereafter. Exceptions to this policy will be given to students with valid LOA on medical or compassionate grounds. Students in such cases will need to inform the lecturer as soon as reasonably possible. Students are not to assume on their own that their deadline has been extended.

---

## **B: Web Application Specification**

### **Online Shop**

#### **1. Overview**

The COVID-19 pandemic is transforming consumer spending habits and lifestyles around the world, including Singapore. The situation has also acted as a catalyst for the Government's constant encouragement to retailers to go digital through the [SMEs Go Digital programs](#).

#### **2. Basic features**

In this assignment your team will continue to enhance the **Online Shop Web Application from Assignment 1** with the following basic features:

##### **A. Main website (For public and customers):**

- (a) Shopping cart (with checkout and simulated payment fulfilment)
  - i. Allow CRUD of items in the shopping cart
  - ii. Allow checkout feature showing total amount, with and without GST.
  - iii. Allow simulated payment processing with 16 digit test credit card
    - i. Test credit card:  
[https://www.paypalobjects.com/en\\_US/vhelp/paypalmanager\\_help/credit\\_card\\_numbers.htm](https://www.paypalobjects.com/en_US/vhelp/paypalmanager_help/credit_card_numbers.htm)
    - ii. Order information must be captured in the database upon completion of payment.
- (b) Customer Self-service
  - i. Access control must be applied to all relevant pages (i.e. only authorized users are allowed to access those pages that they are authorized to do so)
  - ii. View and update personal information (e.g. contacts and delivery address)
  - iii. View purchase history in list format
- (c) Consumes a relevant external REST web service (e.g. Currency conversion)

##### **B. Online Shop administration (For administrator or authorized users with Login/Logout):**

- (a) Access control must be applied to all relevant pages (i.e. only authorized users are allowed to access those pages that they are authorized to do so)
- (b) Product management
  - i. Allow dynamic product image upload
  - ii. Allow product search, inquiry and reporting
    - Example:
      - Listing of best and least selling products
      - Listing of products with low stock level exceeding certain preset threshold.
- (c) Customer management
  - i. Allow CRUD of customer information
  - ii. Allow customer inquiry and reporting
    - Example:

- Listing of customers by residential or delivery street code.
- (d) Order management
  - i. Allow order inquiry and reporting
    - Example:
      - Listing of orders of by date or period or month.
      - Listing of top 10 customers who made the most purchase by value
      - Listing of customers who purchased certain products

**C. Innovation, Creativity & User Experience**

- (a) User friendliness – Website is easy to navigate and error free.
- (b) Innovation, creativity and advanced features – See list of suggested features in Section 3.

**D. PowerPoint Submission & Interview**

- (a) Architecture diagram, showing clearly where MVC is being implemented.
- (b) Screen shots of Main website, Online shop admin and extra features are clearly shown.
- (c) Interview participation & performance.

**3. Suggested advance features**

The following are some suggested features (but not limited to). Your team is free to any other RELEVANT advance features.

Marks will be awarded based on level of difficulty in implementation as well as relevancy to the project.

- (a) Payment engine integration (e.g. Paypal, Stripe or any payment providers)
- (b) Order fulfilment such as delivery management etc.
- (c) Proper deploy and consumption of a relevant REST web service (e.g. retrieval of product info and rating of product by customers)
- (d) Deployment on Azure
- (e) Dynamic upload of images for display in the website
- (f) Dynamic publishing of seasonal product promotions and themes.

#### 4. Assessment Guidelines

The assignment will be assessed based on the following criteria:

<b>Marks breakdown</b> (Marks will be awarded based on depth, level of difficulty in implementation as well as relevancy to the project)		<b>Marks (max)</b>
<b>A – Main website</b> (For public and customers)		<b>32</b>
1. Shopping cart (with checkout and simulated payment fulfilment)	14	
2. Customer self-service with Login/Logout Access control	10	
3. Consumes a relevant external REST web service (e.g. Currency conversion)	8	
<b>B – Online Shop administration</b> (For administrator or authorized users)		<b>32</b>
1. Product management	16	
2. Customer management	8	
3. Order management	8	
<b>C – Innovation, Creativity &amp; User experience</b>		<b>21</b>
1. User friendliness	5	
2. Innovation, creativity and advanced features	16	
<b>D – PPT submission &amp; Interview</b>		<b>15</b>
1. Architecture diagram, showing clearly where MVC is being implemented	5	
2. Screen shots of Main, Admin and extra features are clearly shown	5	
3. Interview	5	
<b>TOTAL</b>		<b>100</b>

-- End --