

**WIA2002 Software Modelling**  
**Semester 1, 2016/17**  
**Additional Assignment**

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**Draw a Class Diagram and indicate appropriate attributes and operations, relationships between the classes and multiplicity specifications.**

Sportz Magazine is a Malaysian sports magazine that provides online version of the weekly magazine which covers the news and opinion on a range of sports as well as giving exclusive interviews with various sports personalities. An online Sportz Magazine's Subscription System is designed to support the process of subscribing the weekly magazine.

A new subscriber applies for subscription by entering personal and payment information into the online application form. The required information includes name, address, phone number, e-mail address, as well as payment information such as credit card type, name as it appears on the card, number, and expiration date. The new subscriber selects type of subscription (individual or corporate) the duration of subscription (or number of issues). For corporate subscription, the new subscriber needs to enter the number of copies. Subscription applicant submits the application and receives a message that includes a confirmation number.

The subscription clerk approves new applications that are correct and complete. First, subscription clerk reviews the application list and checks new applications to ensure that the application is indeed for a new subscription. The subscription will be rejected if subscription already exists, subscription clerk notifies the subscriber that information is already in the system and asks subscriber to verify existing information for accuracy or update application items if something has changed. For new subscription, the subscription clerk approves the application by verifying the completeness of the information for identity and delivery. If information is incomplete, subscription clerk rejects the subscription and notifies the applicant to provide complete information. If information is complete, subscription clerk forwards payment information to the external credit card payment system for verification. If credit card is not valid, the subscription clerk will reject the subscription and notifies the applicant. If the credit card is validated and charged, subscription clerk sends an approval message to the new subscriber and activates the subscription. The message includes the account number and the date when the first issue is to be delivered.

The active subscriber renews his or her subscription before the subscription term expires. Three months before a subscription expires, the system sends a renewal notice to the subscriber. Subscriber follows the instructions offered by a link (Renew Subscription) to a Web page and renews online. The active subscriber needs to update subscription information (i.e., credit card and personal information) before renew the subscription. If the subscriber fails to

renew his or her subscription after three notices, the system automatically sets the termination date for the subscription. Upon successful renewal, the subscription clerks will activate the subscription by extending the term.

### **Class diagram**

- Model an entity class diagram to show the structure of the Sportz Magazine's Subscription System.
- Show explicitly the class attributes and operations and also the relationships between the classes (e.g., generalization, aggregation, composition), multiplicity specifications, and other model elements that you find appropriate.
- You need to apply CRC (Class-Responsibility-Collaboration) cards approach to model interaction between objects based on the use case scenarios. In the report, you need to include all the CRC cards for your class diagram.
- Create a data dictionary to record definition of each class. Each class is written a short description defining its scope / detail of the class.

### **Submission:**

- Submit soft copy of the report via Spectrum
- Submit hard copy of draft report to course instructor / put it into the mailbox (Block B)
- Due Date: **23 December 2016**