COSC1295 Advanced Programming, S1, 2020

Assignment 3

Assessment Type: Individual assignment; no group work. Submit online via Canvas → Assignments → Assignment 3. Marks are awarded for meeting requirements as closely as possible according to assignment specifications and the supplied rubric. Clarifications/updates may be made via announcements/relevant discussion forums.

Due date: end of Week 14, 23:59pm Sunday 14 June 2020. Late submissions are handled as per usual RMIT regulations - 10% deduction (2 marks) per day. You are only allowed to have 5 late days maximum unless special consideration has been granted.

Weighting: 20 marks (10% of your final semester grade)

Task 1 (6 marks)

A. Inheritance is an important and powerful technique in Object-oriented programming. Describe all important inheritance relationships in your Unilink GUI application which you have implemented in Assignment 2. Draw simple class diagrams using the classes you implemented in Assignment 2 to illustrate the inheritance relationships you have described. **(4 marks)**

> **Note:** In your class diagrams, no need to show attributes, constructor and methods. You only need to show class names and the inheritance relationships between those classes. Click here for an example of such a simplified class diagram.

B. What are the benefits of inheritance? Give specific examples from your implementation to show the benefits of using inheritance in your application. **(2 marks)**

Task 2 (6 marks)

A. Polymorphism is another key concept in programming languages, especially in Object-Oriented programming languages. Describe how polymorphism is implemented in your Unilink GUI application. Give specific examples from the code you have implemented to show the polymorphic method calls. Explain your examples. **(4 marks)**

B. What are the benefits of polymorphism in your implementation? **(2 marks)**

Task 3 (8 marks)

A. Explain all the pros and cons of the design of your Unilink GUI application in terms of extensibility and maintainability. What are the features in your code that make it easier to extend your application in the future, for example, to add a new type of post. **(4 marks)**

B. Describe the trade-off between coupling and cohesion (refer to Week 4 lecture) in your design. You need to include specific examples from your code in your answers. **(4 marks)**

Note: We will refer to the code you submitted for assignment 2 when assessing your answers to the questions above, therefore all your answers must be relevant to the code you already submitted.

Submission Instructions

You need to present your answers to Task 1, Task 2 and Task 3 in a single pdf file and submit that pdf file via Canvas → Assignments → Assignment 3 page.

THE END