**PRO192- Practice Exam**

Duration : 85 minutes

Develop Library management OOP application with following components and requirements

1. **Create MVC console application in NetBean:**
   1. Define class Product with following attributes and methods: **(2 marks)**  
      + ProductID, Product Name, UnitPrice, Quantity, Version, ProductManufacturingDate  
      + Constructors, get/set(), toString(), equals()  
      + implement method for Comparable
   2. Define class Producer with following attributes and methods: **(4 marks)**  
      + List of Product  
      + Read text file to load data for List of Product – product.txt is provided (1 mark)   
      + Search Product by different criteria (1 mark)  
      + Print any List of Product (1 mark)  
      + Add new Product from console (1 mark)
   3. Develop Product Management class for application **(4 marks)**  
      + Application menu for application include: Display all Products, Product Search, Add new Product (2 mark)   
      Hint: An abstract Menu class is provided for use in the application. Override method excecute()  
      + Method for seaching Product with searching menu (2 marks)
2. **Technical requirements**:  
   + Create package **model** for Product and Producer class.  
   + Create package **view** for Menu class.

+ Create package **controller** for ProductManagement class.  
+ Checking error for input data.  
+ User interface as sample images below

Product Management

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1. List all products

2. Search product

3. Add new product

4. Exit

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Enter selection..

When choose search Product:

Product Searching

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1. Find by ProductID

2. Find by ProductName

3. Find by ProductManufacturingDate

4. Exit

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Enter selection..

**Notice: Student must strictly follow all requirements as describe above for marking,   
Any modification the requirement detail is not allowed and will get no mark!**