

Total Marks: 100; Duration: 90 minutes

Consider the following **MidExamScene.FXML** scene:

Select Product:

Unit Price in BDT:

Quantity?

Predefined Vat %

Add the Product to Cart

Check Out

After checkout, the cart detail is:

Product: Aarong Milk, Unit price: 100 Tk, Quantity: 3, Vat: 5%, Vat Amount: 15, Total Amount: 315 Tk

Product: Nescafe Gold 100 gm, Unit price: 900 Tk, Quantity: 1, Vat: 5%, Vat Amount: 45, Total Amount: 945 Tk

Product: Rui Fish kg pack, Unit price: 400 Tk, Quantity: 2, Vat: 3%, Vat Amount: 24, Total Amount: 824 Tk

Product: Lux Soap White 100 gm, Unit price: 80 Tk, Quantity: 3, Vat: 5%, Vat Amount: 12, Total Amount: 252 Tk

Total payable: 2336 Tk

Maximum per unit Product Cost:

Select Vat % to consider

Show Total Vat Amount meeting the search criterion

The Total Vat ammont paid for the products meeting search criterion is: 27 Tk

Note:

- You need to add 10 products to the product list
- When a product is selected from ComboBox, its predefined price and vat% are automatically shown below in two Labels
- Quantity of a product can be 1 to 10 only
- Pre defined Vat% can be 1 to 15 only
- **CartItem** class private fields: **String productName**, **float unitPrice**, **int vatRate**, **quantity**
- **ArrayList<CartItem> cartList** is a private field of the controller class

P.T.O

Now, using above description, implement a NetBeans FXML project meeting following criterion:

Requirements	Marks
1) Fully implemented model class: CartItem Mark for declaring fields with scope & qualifier Mark for defining constructors, getters, setters, toString Mark for defining getVatAmount() and getTotalAmount() methods	5 5 5
3) Fully designed MidExamScene.FXML file with required fx:id s and event handler methods Mark for Design Mark for specifying required fx:id s and event handler methods	10 5
4) Fully implemented MidExamSceneController class as follows:	
4.1) Appropriate initialize method	10
4.2) Clicking " Add the Product to Cart " button will trigger addProductToCartButtonOnClick() handler method to do the following : <ul style="list-style-type: none"> It will create a new CartItem instance using user input/selection and add the instance to cartList. User can click this button and add as many products as needed to the cartList You MUST check whether a product is ALREADY added to the cartList or not. If the selected product is already selected, then instead of creating a new CartItem, you MUST update the QUANTITY field of the already added CartItem instance. 	10 10
4.3) Clicking " Check Out " button will trigger checkoutAndShowBillButtonOnClick() handler method to do the following : <ul style="list-style-type: none"> It will show the bill details from cartList into billTextArea, as per the format shown in the screenshot. 	20
4.4) Clicking " Show Total Vat Amount... " button will initiate showTotalVatForQualifiedProductsButtonOnClick() handler method to do the following : <ul style="list-style-type: none"> It will browse the cartList to find the total vat amount for the products whose unit price is <= given amount and matches with selected vat rate, and show the total amount in the label as shown in the screenshot 	20