

SYS466 Summer 2020
Assignment 2: ProTKD Tae Kwon Do
Worth: Graded out of 45, worth 5%.
Professor: Tevin Apenteng
Due: See Blackboard for due date (No Extensions. Deadline is firm)

Your professor will provide you with a UML model to use as a starting point for this assignment. Failure to use this model, will result in a grade of zero.

As per Assignment 1, this is a group assignment.

- **Put the full names of all participating team members in a note in the class diagram.**
- **Name the uml file with your team number and assignment name, e.g.**
Team1_Assignment2.uml
- **You have been provided with a starting model that contains a class diagram *ProTKD*.**
- **Where possible, use classes that already exist in the model; do not duplicate classes.**
- **Any model that containing duplicate classes will receive a zero for that part of the assignment.**

Part 1

Create a new class diagram – *ProTKDStore* to support the following scenarios:

Background:

With the success of the business and increased demand for canteen items (including bottled water, energy bars and ProTKD licensed merchandise), ProTKD has set up a small store at each of their locations.

Scenario 1: Add t-shirt to list of items sold

Precondition: Store Manager has logged into the system and has selected to add this year's workout t-shirt to the list of items that the stores sell (aka the catalogue)

Actor (Store Manager)	System
Requests to add an item to the catalogue	Displays a list of item types and prompts for selection. Prompts for item name, description, and whether or not the item is bought in sizes (eg clothing).
Selects the item type of clothing, enters item name, description, price and chooses bought in sizes.	Displays a list of sizes that clothing is stocked in and prompts for selection of all applicable sizes.
Selects sizes	Generates a unique item identifier for each item/size combination. Displays the items. Prompts for confirmation.
Confirms the addition of these items	Saves the items. Returns to the main menu.

Scenario 2: Adds new flavour of bottled water

Precondition: Store Manager has logged into the system and has selected to add a new flavour of bottled water to the list of items that the stores sell (aka the catalogue)

Actor (Store Manager)	System
Requests to add an item to the catalogue	Displays a list of item types and prompts for selection. Prompts for item name, description, and whether or not the item is bought in sizes.
Selects the item type of beverage, enters item name, price, description and chooses 'single size'.	Generates a unique identifier. Displays the item with selected sizes and prompts for confirmation.
Confirms the item	Saves the item. Returns to the main menu.

Scenario 3: Receive clothing product from a supplier and add to stock

Precondition: The Store Manager has logged into the system and has selected to add t-shirts to a store. The Store Manager has verified that items received from the supplier are what was ordered.

Actor (Store Manager)	System
Requests to add stock	Generates a unique identifier for the stock and the stock date is set to the system date. Displays a list of locations and clothing items. Prompts for selection.
Selects location and selects the specific clothing item	Display the clothing item and prompts to add quantity received.
Enters quantities received.	Displays the inventory stock. Displays list of locations and list of items. Prompts for selection.
Repeats the above 2 steps until all of the clothing items are received	Displays the inventory stock including stock entry identifier and stock date. Displays the list of items received. Prompts for confirmation.
Confirm the receipt	Saves the stock entry.

Part 2

Create a new class diagram – *ProTKDPayment* to support the following scenarios:

Background:

We haven't talked about paying for anything, so that's what this assignment is all about. Obviously, parents must pay for the classes that their children are registered in and pay for items that are purchased at the stores.

Parents have the option of paying for registered classes before the end of the first week of the semester. Parents who do this receive a 10% discount on their bill. Alternatively, parents are able to spread their bill across 4 payments with the last payment due two weeks before the semester ends.

To keep things simple at the stores (aka canteens), purchases are added to the parents 'account' and must be paid by the end of the semester.

Create a new class diagram for payment related classes called *ProTKDPayment* that supports the following scenarios. Update existing class diagrams as required.

Scenario 4: Record store sale of t-shirts

Precondition: Store Manager has logged into the system and has selected to create a sale for a parent. Semester and location have already been selected.

Actor (StoreManager)	System
Requests to start a sale	Retrieves list of parents and prompts for selection.
Selects a parent	Creates new Sale assigning a unique identifier and sets sale date to system date. Assigns current semester to the sale. Display item types. Prompts for selection.
Selects "t-shirts"	Displays a list of t-shirts including their prices. Prompts for selection.
Selects required t-shirt	Displays t-shirt. Prompts for quantity sold.
Enters quantity sold	Creates sale detail. Calculates taxes and total amount of the sale. Displays the full sale information.
Repeats the above 2 steps until all t-shirts selected	Calculates taxes and total amount of the sale. Displays the full sale information with t-shirts sold. Prompts for confirmation.
Confirms sale	Adds the sale transaction.

Scenario 5: Query Parent Account balance and details for a semester**Precondition:** Parent has logged into the system

Actor (Parent)	System
Requests to view account	Displays a list of semesters and prompts for selection.
Selects semester	<p>Displays a list of classes that the parent's children are registered including the name of the class, the location and the cost of the class, including HST.</p> <p>Displays a list of store purchases for the parent's account including date of purchase, items purchased including quantity and price of item, including HST.</p> <p>Retrieves a list of payments applied to the account including date and payment amount.</p> <p>Displays amount still owing for the semester.</p>

Scenario 6: Pay fees in full**Precondition:** Parent has logged into the system. Account information is displayed with full amount owing for the selected semester.

Actor (Parent)	System
Requests to pay fees in full	<p>Displays the total cost and total HST for all of the classes that the parent's children are registered in for the semester.</p> <p>Calculates and displays the 10% discount from the cost (not including HST). Prompts to confirm if the parent would like to proceed with the payment.</p>
Confirms payment	<p>Sends a payment transaction to the external payment system for processing.</p> <p>Creates a payment for the parent's account with the details of the amount charged and the amount discounted.</p> <p>Payment includes payment date and a unique identifier.</p> <p>Payment description includes the semester and 'fees paid in full'.</p>

Scenario 7: Make a partial payment**Precondition:** Parent has logged into the system. Account information is displayed with partial amount still owing for the selected semester.

Actor (Parent)	System
Requests to make a payment	Prompts for payment amount.
Enters payment amount	<p>Sends a payment transaction to the external payment system for processing.</p> <p>Creates a payment for the parent's account with the details of the payment amount. Payment includes payment date and a unique identifier. Payment description includes the semester and 'partial payment'</p>