Workshop - 8

Workshop Value: 10 marks (4.4% of your final grade)

Learning Outcomes

Upon successful completion of this workshop, you will have demonstrated the abilities:

- to decipher and identify a problem
- to analyze and decompose a problem
- to identify the required detailed steps to solve a problem
- to communicate the solution to fellow peers and non-technical business persons

Workshop Grading and Promotion Policy

Workshops for this course will be assessed using the following criteria:

- Workshops must be submitted before class to be graded.
- You must successfully complete 9 workshops (if more than 9 are completed, the best 9 will be used)
- Each student is expected to be a presenter of the workshop solution at least once by the end of the term
- Workshop solutions and presentations will be evaluated using the published workshop rubrics

Workshop Overview

As you have probably recognized by now, computer systems and applications are all about data. Data is always introduced to the system or application at some point as input. Data input is traditionally accomplished by using a keyboard or mouse, but it is important to be aware there are many other ways to obtain data input.

Computer applications can also obtain data input by "pulling" it from some other source (other than a human/end-user). This source can be local (on the same machine) or remote (using the internet). There are many methods available to "pull" data and you will be learning about these in the coming semesters. The most common however, involve files, databases, and web-services.

Another widely used method of data input is through the use of scanners. These are often used in retail stores to scan barcodes for easy data entry. Use of this type of technology is extremely efficient when compared to a manual human method of input – especially if you can use this technology automatically without even human intervention.

This workshop is an introduction to using more modern methods of data input and to integrate it into your solutions which ultimately add more efficiencies to daily business processes.

Workshop Details

A car wash business is looking for a system that will further automate their daily redundancies - more specifically, the processing of customers who line-up for a car wash.

To address most of the inefficiencies and costs, the operation has decided to use a fully automated computer kiosk approach (similar to a drive-through) which will eliminate the need for a cashier to

manually process each customer car wash request and payment. Regular customers can simply drive up to the kiosk, select a wash option, make payment, and proceed to get the car washed.

The new approach in processing customer transactions has opened an opportunity to offer monthly VIP memberships that permits up to 2 washes per day at a reduced cost.

> **Note**: The process of signing up for VIP membership is not done through the kiosk system and therefore does not have to be addressed in this workshop.

VIP members will have a stick-on chip affixed to their vehicle windshield. Vehicles approaching the kiosk station are automatically scanned by the system and if a stick-on chip is successfully detected and read, VIP members can be identified including their individual contracted wash tier option.

VIP members have the option to override the wash-tier they signed up for (applies only to that one wash and does not affect their subscription agreement). If a VIP customer chooses a different wash-tier from their agreement, regular rates will be charged for the selected wash-tier (even if it is a less expensive tier).

> **Note**: If a VIP member wants more than 2 washes on the same day, the customer will have to pay regular rates.

Car Wash Options

Tier-1 "*Clean*"	**$ 6.00**
Tier-2 "*Sparkling*"	**$11.00**
Tier-3 "*The Works*"	**$20.00**

You do not have to describe the details of the receipt, but a receipt should be generated.

Your Tasks

1. Define the solution for processing a car wash customer using the new computer kiosk (should be able to handle both, a regular customer and a VIP member).
2. Communicate the solution using pseudo code and a flowchart
3. Presenters will prepare a video that will present the problem and solution in non-technical terms and will argue that this is an excellent solution to the problem.

[Logic 1] Define the logic for a regular person who pays cash and gets a car wash as pseudo code or a flowchart.

[Logic 2] Define the logic for a VIP who wants to get the tier they paid for.

[Logic 3] Define the logic for a VIP who wants to upgrade their tier or is washing more than twice in one day.

[Combined] Combine all of the logic to produce a complete solution to the problem.

Task	Subtask	Member(s)	Marks	Comments
Pseudocode	Logic 1	4	40%	
	Logic 2	5	40%	
	Logic 3	6	40%	
	Combined	4-6	60%	
FlowChart	Logic 1	1	40%	
	Logic 2	2	40%	
	Logic 3	3	40%	
	Combined	1-3	60%	
Video	Presentation	2 or 5	100%	Members rotate weekly