Workshop Grading and Promotion Policy

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

- Workshops are graded based on two components:
  1. Individual Logic Assignment (40%)
     - Individual work is due **2 days after the assigned date** (class) by **end of day 23:59 EST**
     - Individual logic assignments are to be done individually
     - Members who do not submit work on-time, will receive a zero grade for the workshop
     - Members who receive a zero grade for the individual part, will not be eligible to receive grades for the group solution part
  2. Sub-Group Overall Solution (60%)
     - Group solution is due **4 days after the assigned date** (class) by **end of day 23:59 EST**
     - **Name and ID of all contributing members must be stated at the top of all file submissions**
     - If not submitted on-time, a zero grade will be applied for the group portion of the workshop
     - If the submitted solution is essentially a copy of the individual parts thrown together containing no effort to properly integrate as a seamless overall solution, a zero grade will be applied for the group portion of the workshop

- A zero grade on a workshop will not be counted towards the minimum necessary number of completed workshops

- Video presentations are due **1 day after your next class** by **end of day 23:59 EST**
  - Each student must do a video presentation **at least once** by the end of the term and should minimally consist of the following:
    - Description of the problem and its solution in non-technical terms. You should assume your audience is non-technical and interested in using your application solution.
    - Market your application solution by providing sample screenshots of how you envision your application to look which should include a sample workflow demonstrating how easy it is to use

- You must **successfully complete 9 workshops** (if > 9 are completed, the best 9 will be used)
- Workshop solutions and presentations will be evaluated using the published workshop rubrics

Group Breakdown

Each group has **two sub-groups** determined by the assigned **member number**:

Sub-Group 1: **Members 1-3**

- **Member-1**: Responsible for doing workshop **Logic 1**
- **Member-2**: Responsible for doing workshop **Logic 2**
- **Member-3**: Responsible for doing workshop **Logic 3**

Sub-Group 2: **Members 4-6**

- **Member-4**: Responsible for doing workshop **Logic 1**
- **Member-5**: Responsible for doing workshop **Logic 2**
- **Member-6**: Responsible for doing workshop **Logic 3**

Sub-Group Solution

- Each sub-group is a team and **must work together** creating the overall group solution
- The group solution is not to be done by an individual. The group solution is expected to be a seamless solution (looking as though one person has done it) and has undergone refinement and testing to ensure the logic properly addresses the workshop problem.
- If the submitted work amounts to essentially copying and pasting everyone's logic part together, a zero grade will be applied for the group work portion.

Work Submission

All work must be emailed to your instructor. You must follow the email guidelines described below.

- All work submitted (applied to both individual and group submissions) **requires all contributing members names to be stated at the top of all files being submitted**

Email Subject Line

- Highlighted parts indicate your specific information
- There are no spaces
- **APS145-[SECTION]-WS[#]:Group[#]**
  - Example: **APS145-NAA-WS1:Group3**

File Attachment

Individual Work Submissions

Attach a file containing your work (**pseudo code** OR **flowchart**)

- Highlighted parts indicate your specific information
- **Pseudo code**: **logic[#].fullname.pseudocode.txt**
  - Example: **logic2.Cameron Gray.pseudocode.txt**
- **Flowchart**: **logic[#].fullname.flowchart.jpg** *(Note: .**jpg** or .**png**)*
  - Example: **logic3.Cameron Gray.flowchart.png**

Sub-Group Solution Submission

Attach a file containing your group work (**pseudo code** OR **flowchart**)

- Highlighted parts indicate your specific information
- There are no spaces
- **Pseudo code**: **ws[#].group.pseudocode.txt**
  - Example: **ws1.group.pseudocode.txt**
- **Flowchart**: **ws[#].group.flowchart.jpg** *(Note: .**jpg** or .**png**)*
  - Example: **ws3.group.flowchart.png**

Presentation Submission

Video files can be quite large and will most likely be rejected by Seneca's email services. Therefore, you will have to **SHARE** your video file using your Seneca account Microsoft **ONE drive**.

- **Video file name**: **WS[#].fullname.video.mp4**
  - Example: **WS4.Cameron Gray.video.mp4**
- Go to https://myseneca.ca, click on (top left corner) and select the One Drive application option
- Upload your video file: 

- Share  the file with your instructor: **Copy the shared link** 

- Paste the shared link into your email

Workshop - 11

Workshop Value: 10 marks (5% of your final grade)

Workshop Overview

Often, programming solutions must integrate mathematical formulas to perform specific calculations to provide solutions to various day-to-day problems. It is important to be able to translate these requirements into a technical process and apply it when and wherever appropriate.

Workshop Details

A **mobile application** solution is needed to calculate the total car travel **distance** and **time** given a set of directions. Each directional step will include environmental factors that can influence the travel time/duration. The solution should accommodate all possible combinations of environmental factors to insure an accurate total duration is calculated.

Your mobile application **will not have to prompt the user for input** to get the set of directions – this data (that includes the environmental factors) is an input sent to your mobile application and your application logic will have to **evaluate and extract the important information you need** to perform the distance and time calculations.

You will need to review the problem thoroughly and derive **meaningful data structure(s)** to consolidate the information you need to keep track of and will help make it easier to pass to and from other subprocesses.

Travel Time Calculator

Constraints

Time Per Unit Travelled

A single travel unit = 2 kilometers and takes 15 minutes to travel (with 0 people and no wind factor)

Passenger Weight Impact

For each person, increase each unit time by 5.0%

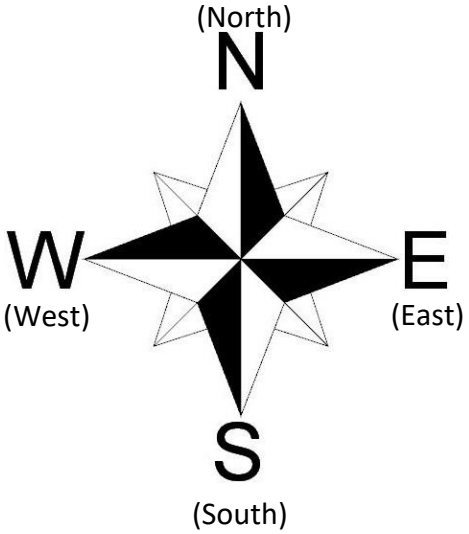
Wind Direction (Terminology)

Easterly (blows from the east towards the west)

Westerly (blows from the west towards the east)

Northerly (blows from the north towards the south)

Southerly (blows from the south towards the north)



Wind Force Levels

0 = **no wind**
1 = **weak** wind
2 = **moderate** wind
3 = **strong** wind

Directional Factors

Travel AGAINST the wind:	**Increase** each unit time by a factor of the **wind level times 25.0%**
Travel WITH the wind:	**Decrease** each unit time by a factor of the **wind level times 20.0%**
Travel PERPENDICULAR to the wind:	**Increase** each unit time by a factor of the **wind level times 10.0%**

Getting Started/Suggestions

- Develop your solution incrementally by limiting the scope of your smaller problems to the scenarios described late (**see last page**). Each scenario focuses on a specific requirement. By the time you get to the final scenario, all the requirements will be addressed.

- **Each direction/step** will include the following key information:
  - Distance to travel in km from which you can derive the number of travel units
  - Travel direction (east, west, north, south)
  - Environmental factors such as:
    - Number of people/passengers
    - Wind force factor (no wind, mild, moderate, strong)
    - Wind direction (easterly, westerly, northerly, southerly)

- **Constraints** to consider:
  - Number of units to travel
  - Number of people/passengers
  - Wind force level
  - Wind direction
  - Travel direction (vs. wind direction)

- **Unit testing**
  - Use the scenarios worksheet to help you track the values
  - Create additional test cases to test your logic thoroughly (perhaps multiple directions)
  - Have all members of the group independently test your solution and see you all get the same (and correct) answer

Work Breakdown

[Logic 1] Describe the process required to extract a set of directions into meaningful data that can be used by the application in preparation for performing the required calculations.

Note: *There is **no limit** to the number of directions in any given scenario, but there will always be **at least one**.*

[Logic 2] Describe the process required to calculate the time in minutes given a single directional step of data. **Hint**: the data sent to your subprocess will already be stored in a meaningful data structure (done in Logic 1) which will include the travel distance, direction, number of passengers and wind conditions.

[Logic 3] Describe the process required to calculate the total distance and average minutes per km travelled. A **list** of directional data will be sent to your subprocess and will be stored in a meaningful data structure (done in Logic 1). **Hint**: Logi-2 subprocess calculates the minutes for a single directional step

[Group Solution] Describe the overall process required to solve the problem. Apply modular design as required.

Your Tasks

1. Where applicable, apply the core components of the **computational thinking** approach to problem solving to help you synthesize a solution
2. Communicate the independent logic parts and group solutions using pseudo code/flowchart (see assignments below)
3. Create a video presentation to market your envisioned application

Individual and sub-group assignments

Sub-Group 1 (pseudo code)				
Task	**Subtask**	**Member(s)**	**Marks**	**Comments**
Pseudocode	Logic 1	**1**	40%	Members are graded individually
	Logic 2	**2**	40%	
	Logic 3	**3**	40%	
	Group Solution	**1-3**	60%	Eligible members get same mark
Sub-Group 2 (flowchart)				
Task	**Subtask**	**Member(s)**	**Marks**	**Comments**
FlowChart	Logic 1	**4**	40%	Members are graded individually
	Logic 2	**5**	40%	
	Logic 3	**6**	40%	
	Group Solution	**4-6**	60%	Eligible members get same mark
Video	Presentation	**2 or 5**	100%	Members rotate weekly

*** Presentation**: Decide among yourselves which member among the entire group will be doing the presentation. Priority should be given to those who have not yet done one.

Unit Test Scenario - 1

Leaving from point A, you travel east 12 km to point B alone in the car on a nice sunny day with no wind.

Directional Step #	Units to Travel	Travel Direction	Number of People	Wind Force	Wind Direction	Base Unit Time (+ min.)	People Time (+ min.)	Wind Time (+/- min.)	Direction Time (min.)	Total Distance (km)
1										

Unit Test Scenario - 2

Leaving from point A, you travel south 21 km to point B with two (2) passengers and a weak northerly wind.

Directional Step #	Units to Travel	Travel Direction	Number of People	Wind Force	Wind Direction	Base Unit Time (+ min.)	People Time (+ min.)	Wind Time (+/- min.)	Direction Time (min.)	Total Distance (km)
1										

Unit Test Scenario - 3

Leaving from point A, you travel west 4 km to point B with two (2) passengers and a strong westerly wind.

Directional Step #	Units to Travel	Travel Direction	Number of People	Wind Force	Wind Direction	Base Unit Time (+ min.)	People Time (+ min.)	Wind Time (+/- min.)	Direction Time (min.)	Total Distance (km)
1										

Unit Test Scenario - 4

Leaving from point A, you travel north 11 km to point B with one (1) passenger and a moderate easterly wind.

Directional Step #	Units to Travel	Travel Direction	Number of People	Wind Force	Wind Direction	Base Unit Time (+ min.)	People Time (+ min.)	Wind Time (+/- min.)	Direction Time (min.)	Total Distance (km)
1										

Final Test Scenario

1. Depart alone, travel west 17 km, **weather conditions**: weak westerly wind
2. Pick-up 2 passengers, travel north 15 km, **weather conditions**: moderate southerly wind
3. Travel east 9.5 km, **weather conditions**: strong easterly wind
4. Drop-off 1 passenger, travel north 7 km, **weather conditions**: moderate easterly wind
5. Drop-off 1 passenger, travel east 34 km, **weather conditions**: strong westerly wind
6. Pick-up 3 passengers, travel south 52.5 km, **weather conditions**: no wind (destination reached)

Directional Step #	Units to Travel	Travel Direction	Number of People	Wind Force	Wind Direction	Base Unit Time (+ min.)	People Time (+ min.)	Wind Time (+/- min.)	Direction Time (min.)	Accum. Time (min.)	Accum. Distance (km)
1											
2											
3											
4											
5											
6											

Minutes expressed as Hours and Minutes (HH:MM): _____

Average minutes per kilometer travelled: _____