

Assignment 1 [100 points] - due February 8, 11PM

For each of the following 4 problems provide:

1. inputs: any value needed by your algorithm must be provided through an input
2. outputs
3. error conditions
4. an algorithm using pseudocode
5. a set of test cases

The pseudocode standard document and reference sheet are available on Sakai – >Resources.

1. Cost of Tomatoes [10 points]

Compute and display the result of how much a certain number of pounds of tomato costs.

2. Train Tickets [20 points]

Compute and display the price a person will pay for one train ticket to get from town X to town Y according to the following rules.

If the ticket is bought at the train station ticket counter or at the automatic ticket counter:

- an adult pays \$11.50
- a senior pays \$6.50

If ticket is bought inside the train there is an extra charge of 10% of the total price.

3. Tuition [30 points]

Compute and display the tuition a student pays at an university, given the following rules:

- Every student pays a campus fee of \$5.75;
- Each one credit costs \$35;
- An university employee pays only campus fee;
- State employee pays campus fee + 20% of total number of credits cost;
- A student paying in installments pays an additional 2% of the total amount owed;
- Assume a student cannot be an university employee and a state employee at the same time.

4. Apartment complex census [40 points]

Suppose the management of an apartment complex would like to know the demographics of the people living in the complex, more specifically the number of seniors, adults and children.

Write an algorithm that will record the number of seniors, adults, and children in each apartment in the apartment complex, and then display the total number of seniors, the total number of adults, and the total number of children in the complex, as well as the average number of each (seniors, adults, and children) per apartment.

Submission

Use your preferred text editor to type your answers, and then save the file in **PDF format**. We will only grade typed assignments and in PDF format. You will use Gradescope to submit your assignment.

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