C950 Task-2 FAQ

(Task-2: The implementation phase of the WGUPS Routing Program).

(Zip your source code and upload it with this file)

C950 Data Structures and Algorithms II

A. Hash Table

Develop a hash table, without using any additional libraries or classes, that has an insertion function that takes the package ID as input and inserts each of the following data components into the hash table:

- *delivery address*
- *delivery deadline*
- *delivery city*
- *delivery zip code*
- *package weight*
- *delivery status (i.e., at the hub, en route, or delivered), including the delivery time*

You need to have HashTable data structure implemented as part of your solution. Then, you can use dictionaries and or other built-in data structures. Avoid using libraries other than CSV and DateTime Python libraries.

Provide screenshot of your HashTable.

B. Look-Up Functions

Develop a look-up function that takes the package ID as input and returns each of the following corresponding data components:

- *delivery address*

- *delivery deadline*
- *delivery city*
- *delivery zip code*
- *package weight*
- *delivery status (i.e., at the hub, en route, or delivered), including the delivery time*

Provide screenshot of your Look-Up function.

C. Original Code

Write an original program that will deliver all packages and meet all requirements using the attached supporting documents "Salt Lake City Downtown Map," "WGUPS Distance Table," and "WGUPS Package File."

Major code blocks screenshots go here showing implementation

C1. Identification Information

1. Create an identifying comment within the first line of a file named "main.py" that includes your student ID.

main.py screenshot goes here showing Student ID

C2. Process and Flow Comments

2. Include comments in your code to explain both the process and the flow of the program.

Some code blocks screenshots go here showing comments

By explaining the intent and decisions of each “major” block of code, i.e., the “why, what, and how,” the comments should improve readability. Provide a little more detail for any process that is unusual or complicated.

D. Interface

Provide an intuitive interface for the user to view the delivery status (including the delivery time) of any package at any time and the total mileage traveled by all trucks. (The delivery status should report the package as at the hub, en route, or delivered. Delivery status must include the time.)

Interface screenshot goes here.

Here in the first screenshot for example; they are asking for anytime requested by the user between 8:35am and 9:25am.

D1. First Status Check

1. Provide screenshots to show the status of all packages loaded onto each truck at a time between 8:35 a.m. and 9:25 a.m.

Screen shot goes here

D2. Second Status Check

2. Provide screenshots to show the status of all packages loaded onto each truck at a time between 9:35 a.m. and 10:25 a.m.

Screenshot goes here

D3. Third Status Check

3. Provide screenshots to show the status of all packages loaded onto each truck at a time between 12:03 p.m. and 1:12 p.m.

Screenshot goes here

E. Screenshot of Code Execution

Provide screenshots showing successful completion of the code that includes the total mileage traveled by all trucks.

Provide a screenshot or screenshots so that the evaluator can check that your code ran on your machine successfully to completion. The screenshot(s) should include a view of the console output, the project files, etc.

F1. Strengths of the Chosen Algorithm

Justify the package delivery algorithm used in the solution as written in the original program by doing the following:

1. Describe two or more strengths of the algorithm used in the solution.

Address above questions with 4-5 sentences.

F2. Verification of Algorithm

2. Verify that the algorithm used in the solution meets all requirements in the scenario.

See above

F3. Other Possible Algorithms

3. Identify two other named algorithms that are different from the algorithm implemented in the solution and would meet all requirements in the scenario.

See above

F3a. Algorithm Differences

a. Describe how both algorithms identified in part F3 are different from the algorithm used in the solution

See above

G. Different Approach

Describe what you would do differently, other than the two algorithms identified in part F3, if you did this project again, including details of the modifications that would be made.

Text goes here

H. Verification of Data Structure

Verify that the data structure used in the solution meets all requirements in the scenario.

Address above questions with 4-5 sentences.

H1. Other Data Structures

1. Identify two other data structures that could meet the same requirements in the scenario.

See above

H1a. Data Structure Differences

a. Describe how each data structure identified in H1 is different from the data structure used in the solution.

See above

I. Sources

Text goes here

An example:

Lysecky, R., & Vahid, F. (2018, June). *C950: Data Structures and Algorithms II*. zyBooks.

Retrieved March 22, 2021, from https://learn.zybooks.com/zybook/WGUC950AY20182019/

J. Professional Communication

Demonstrate professional communication in the content and presentation of your submission.

The submitted document should be grammatically correct and easy to read. Make use of one of the many freely available grammar checkers and/or the writing center. You can run your document through https://www.grammarly.com/