



CARVANA PROGRAM USER MANUAL

Version 1.0 – December 2025

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Introduction

The Carvana Program is an interactive, text-based car-purchasing system designed to simulate an online dealership experience. Users can browse a catalog of vehicles, view detailed specifications, enter trade-in information, choose payment and financing options, and receive a complete purchase summary or final receipt.

The program follows a step-by-step structure that guides the user through the full buying process. It includes features such as an integrated FAQ system, input validation to prevent errors, shipping and pickup options, and the ability to restart the buying experience without restarting the entire program.

Overall, this application provides a clear and organized workflow that recreates essential components of a real car-buying platform while remaining simple and user-friendly.

Program Requirements

To run the Carvana Program successfully, the following requirements must be met:

System Requirements

- A computer with Python installed
- Ability to run programs through a terminal or Python environment that supports user input

Required Text Files

Three external files must be included in the same folder as the program:

- **catalog.txt** – Contains the list of all cars available for viewing
- **specs.txt** – Contains detailed specifications for each corresponding car in the catalog
- **faq.txt** – Contains frequently asked questions that the user can access during the program

These files must remain properly formatted, with one entry per line, for the program to function correctly

Included Files & Their Purpose

The program depends on three text files to supply information and support the user experience:

catalog.txt

This file contains the list of vehicle names shown to the user when the program displays the catalog. Each line represents one car. The line number determines the car's selection number.

specs.txt

This file contains the specifications associated with each car. The line numbers correspond to the lines in **catalog.txt**. When a user selects a car, the program retrieves the matching line from this file and displays the vehicle's price, year, mileage, and other details.

faq.txt

This file contains a collection of frequently asked questions. At many input prompts, the user may type **FAQ** to immediately view this file. Once displayed, the program returns the user to the same prompt, allowing them to continue without losing their place.

How to Run the Program

Running the Carvana Program is straightforward and requires only a few simple steps. Once the required files are placed in the correct directory, the program can be executed from any Python-supported environment.

Step 1 — Prepare the Program Folder

Before launching the program, ensure that the following files are located in the *same directory*:

- `carvana.py` (the Python program)
- `catalog.txt`
- `specs.txt`
- `faq.txt`

The program relies on these files to display the catalog, show vehicle details, and respond to FAQ requests.

Step 2 — Open a Python Environment

You may run the program using:

- The system terminal or command prompt
- An IDE such as PyCharm, VS Code, or IDLE
- Any Python interpreter that supports user input

Step 3 — Run the Program

In the terminal, navigate to the folder containing the program and run:

`carvana.py`

Or, from an IDE, simply open the file and press Run.

Step 4 — Follow On-Screen Instructions

Once the program starts, it immediately guides the user through:

- Opening Carvana
- Viewing the catalog
- Selecting a vehicle
- Proceeding through the purchase steps

Prompts appear one at a time, making the program easy to navigate even for users who are interacting with it for the first time.

Step 5 — Use “FAQ” When Needed

At many input prompts, the user can type:

`FAQ`

This option displays the contents of the FAQ file and then returns the user to the same question.

Step 6 — Completing or Ending the Program

At the end of the workflow, the user may choose to:

- Complete the purchase
- Return to the catalog
- Or exit the program entirely

No additional technical steps are required.

FAQ System

The Carvana Program includes an integrated FAQ system designed to assist users at any point during the buying process. This feature provides immediate access to important information without interrupting the user's progress.

Accessing the FAQ

At many input prompts throughout the program, the user may type:

FAQ

When this command is entered, the program will:

1. Open and read the contents of the file faq.txt
2. Display the entire list of frequently asked questions
3. Return the user to the exact same input prompt where they left off

This ensures that users can retrieve information without losing their position in the workflow.

How the FAQ Works

The program uses a helper function to manage FAQ access:

- The `get_input_with_faq()` function replaces standard input prompts
- If the user enters “FAQ,” the program calls `show_faq()`
- After the FAQ is displayed, the original question is asked again

This approach makes the system feel seamless while keeping the code organized and easy to maintain.

Purpose of the FAQ System

The FAQ exists to:

- Clarify the meaning of certain prompts
- Provide helpful explanations during the purchasing process
- Reduce user confusion
- Improve the overall experience by offering guidance instantly

By making the FAQ available at nearly any point in the program, users receive continuous support without needing outside documentation.

Program Workflow Overview

The Carvana Program follows a structured, step-by-step flow designed to guide the user through the full vehicle-purchasing experience. Each stage flows naturally into the next, allowing the user to explore the catalog, inspect vehicle details, enter financial information, and review their purchase before completing the transaction.

The major phases of the program are outlined below.

1. Program Start and User Greeting

When the program launches, the user is greeted with an introductory banner and informed that the FAQ system is available at any time by typing FAQ. The user is then asked whether they would like to open Carvana. If they decline, the program ends immediately.

2. Catalog Display

If the user chooses to continue, the program displays a numbered catalog of available vehicles. These entries are read directly from catalog.txt, and each line that's not empty is assigned a unique number.

3. Vehicle Selection

The user selects a vehicle by entering its number. Input validation ensures that the selection is numeric and within range. Once a valid selection is made, the program retrieves the corresponding specifications from specs.txt and displays them.

4. Decision to Begin Purchase

After reviewing the vehicle's details, the user chooses whether they would like to begin the purchasing process. A “no” response ends the session with a polite exit message.

5. Trade-In Evaluation

If the user has a trade-in vehicle, the program collects basic information such as year, make, and model. A randomized estimate between \$2,000 and \$15,000 is generated and applied to the final total.

6. Income and Down Payment Check

Next, the user enters their yearly income and intended down payment. These values determine whether the system marks the user as “Approved” or “Denied” for general loan eligibility. This approval status does not stop the purchase but informs the receipt.

7. Shipping or Pickup Selection

The user chooses whether they want shipping or local pickup.

If shipping is selected, a flat \$500 shipping fee is added and the user is prompted to enter their full shipping address, including street, city, state, and ZIP code.

If pickup is selected, no shipping fee is added.

8. Payment Method and Financing Details

The program then asks how the user wishes to pay:

- Cash
- Self-financing (pre-approved loan)
- Financing through Carvana

Each method triggers its own set of questions, including loan term, interest rates, and pre-approved amounts. Tax and trade-in value are factored into the total due.

9. Purchase Summary

Before completing the transaction, the program displays a detailed purchase summary that includes:

- Base price
- Sales tax (New York State)
- Trade-in value
- Shipping cost
- Payment method
- Loan information (if applicable)
- Total amount due

This allows the user to review all financial aspects before deciding.

10. Final Receipt or Return to Catalog

The user chooses whether to complete the purchase.

If they proceed, the program prints a final receipt and provides pickup or shipping information.

If they decline, they are given the option to return to the catalog and start again.

This structured workflow ensures the program is intuitive, easy to follow, and realistic in representing the major steps of an online car-buying process.

Feature Breakdown

This chapter provides a detailed explanation of each major component within the Carvana Program. While Chapter 6 describes the overall workflow, the sections below focus on the specific features, how they operate, and the logic behind them.

7.1 Opening Carvana

At the start of the program, the program shows a welcome banner and explains that the user may type “FAQ” at any time for help.

The user is then asked if they want to open Carvana.

- If they answer “y”, the program continues into the catalog.
- If they answer “n”, the program ends.

This step introduces the user to the system and makes first interaction with the user.

7.2 Viewing the Catalog

The program reads the contents of catalog.txt and prints a numbered list of available vehicles. Each line that is not empty in the file represents one car from the catalog. Numbering the list allows the user to easily reference the selected vehicles.

7.3 Selecting a Vehicle

After the catalog is displayed the user selects a car by entering its number.

The program validates to ensure:

- The input is a number
- The number matches an existing vehicle in the catalog.

If the input is invalid, the program notifies the user and prevents progression until corrected.

7.4 Viewing Vehicle Specifications

Once a valid selection is made, the program reads ***specs.txt*** and retrieves the specifications for the selected vehicle.

Each line in ***specs.txt*** matches the same line number in ***catalog.txt***, making sure pairing is accurate.

The selected vehicle's specifications are then printed so the user can decide if they would like to begin the purchasing process.

7.5 Trade-In Evaluation

If the user has a trade-in offer, the program will collect:

- Year
- Make
- Model

After the information is entered, the program will use **`random.randint()`** to generate a trade-in estimate between \$2,000 and \$15,000.

This simulates a simple dealership appraisal.

7.6 Income & Down Payment Check

The next step in the program asks the user to enter:

- Yearly income
- Down payment amount

Both inputs are validated to make sure numeric values are entered.

A basic approval rule is used:

- Income must be greater than \$25,000
- Down payment must be at least \$500

This step simulates a simple pre-qualification check.

7.7 Shipping Options

The user will then choose whether they want shipping.

- Choosing “y” adds a flat \$500 shipping cost and prompts the user to enter their shipping address (street, city, state, and ZIP code).
- Choosing “n” adds no additional cost.

This option affects the final price summary but keeps the process straight forward.

7.8 Payment & Financing Options

The program offers three different payment options:

- Cash - No interest applied.
- Self-Financing - The user enters their pre-Approved amount and loan term. Interest is set to 0% for simplicity reasons.
- Carvana Financing - A 6% simple interest rate is applied, and the user is prompted to select the total number of months they will be financing.

Based on the option selected, the program calculates taxes, interest, monthly payments, and the total amount due.

7.9 Tax Calculation

The program applies an 8.875% New York sales tax to the Vehicles base price.

This tax is added to the total due.

The calculation uses simple multiplication and integer conversion.

7.10 Purchase Summary

After all the necessary inputs are gathered, the program prints a complete summary that includes:

- Car selected
- Base price
- Sales tax
- Trade-in value
- Shipping cost
- Payment method
- Loan details (if applicable)
- Total amount due

This summary gives the user a clear and organized view before making a final decision.

7.11 Final Purchase Receipt

The program asks whether the user wants to complete the purchase.

- If the user selects “y”, a final receipt is printed showing the total paid, payment type, and delivery or pick up instructions. If shipping was selected, the final receipt displays the customer’s shipping address and estimated delivery time.
- If the user selects “n”, the program gives the option to return to the catalog or exit completely.

This is the final step in the Carvana simulation that provides a polished ending to the workflow.

User Guide: How to Use the Carvana Program

This program provides a detailed, step-by-step guide on how to use the program exactly how it was intended. Unlike the chapters preceding it, this chapter gives a full breakdown on experience rather than the logic behind the program.

8.1 Starting the program

1. Run the program in a Python environment.
2. You will see a welcome banner and a message explaining that you may type FAQ at many prompts for additional help.
3. When asked:
“Would you like to open Carvana? (y/n):”
 - Type y to continue
 - Type n to exit

8.2 Navigating the Catalog

After entering Carvana, a numbered list of vehicles will appear. Each entry represents a car you can select.

When asked:

“Which number car would you like to view?”

- Type the number next to the car you want
- Press Enter

If the number is not valid, the program will ask again.

Typing FAQ at this point shows help without losing your place.

8.3 Viewing Car Details

After choosing a valid number, the program will display the details for the selected car such as:

- Model
- Features
- Price

You will then be asked whether you want to begin the purchase process.

Type:

- y → continue
- n → exit

8.4 Entering Trade-In Information (Optional)

If you have a trade-in vehicle:

1. Type y
2. Enter the year, make, and model when prompted

The program will generate a trade-in estimate automatically.

If you do not have a trade-in vehicle, type n to continue.

8.5 Income and Down Payment

The program will ask:

- Your yearly income
- Your down payment amount

Enter whole numbers for both.

This information is used to determine a simple approval status, but it does not affect your ability to continue.

8.6 Choosing Shipping or Pickup

You will be asked:

“Would you like shipping? (y/n):”

- Type y → adds a shipping fee. If shipping is selected, the program will prompt the user to enter their street address, city, state, and ZIP code.
- Type n → you will pick up the car locally

Pickup instructions appear later on your receipt.

8.7 Selecting a Payment Method

You will see three options:

1. Cash
2. Self-financing (pre-approved loan)
3. Finance with Carvana

Type **1**, **2**, or **3** to choose.

Each option asks different follow-up questions:

- Cash → no additional questions
- Self-financing → enter pre-approved amount + loan months
- Carvana financing → enter desired loan months

The program will calculate totals automatically.

8.8 Reviewing Your Summary

Before completing the purchase, the program displays a clear summary including:

- Vehicle
- Taxes
- Trade-in amount
- Shipping cost
- Payment method
- Monthly payment estimate (if financing)
- Total amount due

Review this screen carefully.

If something is wrong, you may decline the purchase and return to the catalog later.

8.9 Completing Your Purchase

When asked:

“Would you like to complete your purchase? (y/n):”

- Type y → a final receipt is printed
- Type n → the program will offer to return you to the catalog

If shipping was chosen, the receipt includes an estimated delivery date.

If picking up, the receipt includes the location:

2 North Ave, Garden City, NY 11530

8.10 Using FAQ During the Program

Typing FAQ at supported prompts allows you to:

- Review common questions
- Get clarification
- Continue exactly where you left off

You do *not* lose progress by using FAQ.

8.11 Tips for a Smooth Experience

- Enter numbers carefully
- Read each prompt fully before answering
- Use FAQ if you're unsure about a question
- Restart from the catalog if you want to explore more vehicles
- Keep all three text files in the same folder as the program

Restarting or Ending the Program

After completing the purchase summary, the user is asked if they want to finish their purchase or return to the catalog.

- “If the user selects “y”, the program prints a final receipt and ends.
- “If the user selects “n”, they can return to the catalog by restarting the *main()* function or exit the program entirely.”

This gives the user more flexibility and prevents the user from needing to rerun the program manually.

Input Validation & Error Handling

The program contains multiple layers of “fault proof” code in order to ensure that the user enters correct and acceptable information throughout the entire buying process.

This chapter explains how the program checks user input, how it responds to mistakes, and how it prevents common user errors.

10.1 Ensuring Numeric Input Where Required

Several steps in the program require numbers, such as:

- Vehicle selection
- Trade-in year
- Yearly income
- Down payment
- Loan term
- Pre-approved amount

To prevent invalid input (like letters or symbols), the program uses simple checking techniques to confirm that values represent valid numbers before continuing.

If the user enters something invalid, the program:

- Displays an error message
- Re-prompts the user for the correct input
- Waits until a valid response is provided

This prevents the program from attempting calculations with incorrect data and maintains a smooth buying experience.

10.2 Preventing Invalid Selections In Catalog Phase

When choosing a vehicle, the user must select a number from the displayed catalog list.

The program checks two conditions:

1. The input must be a number
2. The number must match an available vehicle

If the number is outside the valid range, the program stops and informs the user that the selection does not exist.

This ensures every selection receives a valid entry from *specs.txt*, keeping the process error-free.

10.3 Protecting the Program from Incorrect Menu Choices

At several points, the user must choose from a menu, such as:

- Whether to open Carvana
- Whether they want shipping
- Payment method selection

If the user types something other than one of the allowed choices (such as entering "10" when only "1, 2, 3" are permitted), the program displays a correction message and asks again.

10.4 Graceful Handling of Trade-In Information

Trade-in inputs (year, make, model) are accepted as basic text values, but the program ensures:

- The year is a numeric value
- The make and model are not left empty

Since this information affects the trade-in estimate, confirming correct input helps maintain consistency in the final purchase summary.

10.5 Protection Against Invalid Pricing Extraction

When reading the price from *specs.txt*, the program uses simple scanning to find the dollar sign and extract the price that follows.

If the price cannot be interpreted correctly, the program sets the price to 0 rather than crashing.

This ensures the summary prints reliably even if the file format changes.

10.6 Preventing Errors During Financial Calculations

Loan calculations require correct values for:

- Loan term
- Approved amount
- Interest rate
- Monthly payment formula

If the user enters invalid financial details, prompting continues until a correct value is input. This prevents division errors, negative numbers, and other calculation issues.

10.7 Error Handling During Final Purchase Decisions

Before completing the transaction, the program again checks the user's response:

- “y” confirms the purchase
- “n” cancels the purchase

If “n” is selected, the user may either return to the catalog or exit the program.

10.8 FAQ Access for Clarification

At many prompts, the user can type:

“FAQ”

This feature allows users to avoid input mistakes by reviewing helpful information before answering. After displaying the FAQ, the program returns to the same question, ensuring the workflow is never disrupted.

Purpose of Input Validation & Error Handling

By consistently checking and verifying input, the program:

- Avoids crashes
- Prevents incorrect calculations
- Ensures only valid user choices are processed
- Makes the system easier and more intuitive to use
- Maintains the structured flow of the car-buying process

The validation methods used are simple yet effective for a text-based system. They support clean, predictable behavior throughout all stages of the program.

Conclusion

The Carvana Program provides a complete, interactive simulation of an online car-purchasing experience. Through a series of prompts, users can browse a catalog, review vehicle details, evaluate trade-in options, explore financing methods, and generate a final purchase summary or receipt. Each step is designed to be clear, user-friendly, and aligned with realistic dealership processes.

With features such as the integrated FAQ system, input validation, and the ability to restart the catalog without restarting the entire program, users are guided through the workflow smoothly and without confusion. The program uses straightforward logic, readable code, and practical file handling to create a reliable and accessible system suitable for both demonstration and educational purposes.