**Assignment 03: Python Crash Course Practice (Chapters 2 & 3)**

Welcome to the practice set for **Python Crash Course (3rd Edition)** by Eric Matthes!

This README contains **20 carefully crafted questions** based on:

* **Chapter 2**: Variables and Simple Data Types
* **Chapter 3**: Introducing Lists

The focus is on **logic building** and **problem solving**, ranging from **basic** to **advanced** levels. Absolutely — we can **estimate a realistic time** based on the type of questions and beginner speed.

Here’s a thoughtful breakdown:

| **Section** | **Estimated Time per Question** | **Total Time** | **Notes** |
| --- | --- | --- | --- |
| Basic (15 questions) | 5–10 minutes each | 1.5–2.5 hours | Simple print statements, variables, list basics |
| Intermediate (10 questions) | 10–15 minutes each | 1.5–2.5 hours | Small logic like loops, sorting, input, math |
| Advanced (5 questions) | 15–25 minutes each | 1.5–2 hours | Requires thinking, filtering, edge cases |
| Bonus Challenge (Optional) | 20–30 minutes | 0.5 hour | If attempted |

**📋 Overall Estimate for a Beginner:**

| **Task** | **Time** |
| --- | --- |
| Solving all 30 main questions | 4.5–7 hours |
| Bonus Challenge (optional) | +0.5 hour |
| **Total Estimated Time** | **5–7.5 hours** |

**📢 Important Notes:**

* **If working in one sitting**: Suggest **two sessions** of **3–4 hours each** (with breaks).
* **If spread over days**: 2–3 days with daily **2–2.5 hours** would be ideal for beginners.
* **Extra Time**: Always add **30 minutes extra** for setting up Google Colab, reading instructions, and fixing small mistakes.

**🎯 Suggested Instructions (for your assignment note):**

⏰ Estimated Completion Time for Beginners: **5 to 7.5 hours**  
💡 Recommendation: Break it into **2 sessions** or **spread over 2–3 days** to maximize learning.  
📚 Focus on **understanding concepts**, not rushing through.

**📚 Practice Questions**

**Chapter 2: Variables and Simple Data Types (15 Questions)**

**Basic**

1. Create a variable called greeting and store any message. Print it.
2. Change the value of greeting to a new message. Print the updated message.
3. Create two variables first\_name and last\_name. Combine them into a full name using an f-string.
4. Print a quote along with the author's name using an f-string.
5. Store a person's name with extra spaces. Strip the spaces before printing.

**Intermediate**

1. Take a number, add 5, multiply by 2, subtract 3, and print the final result.
2. Create two numbers a and b and print their sum, difference, product, and quotient.
3. Find the square and cube of a number using the \*\* operator.
4. Print the sum of three floating-point numbers.
5. Assign three variables x, y, z in a single line and print them.

**Chapter 3: Introducing Lists (15 Questions)**

**Basic**

1. Create a list of 5 favorite fruits and print each fruit separately.
2. Modify the second item in the list and print the updated list.
3. Append a new fruit and insert another at the beginning of the list.
4. Demonstrate deleting an item using del, pop(), and remove().
5. Sort the list permanently with sort() and temporarily with sorted(). Print before and after each.

**Intermediate**

1. Create a list of dream travel destinations:
   * Sort alphabetically
   * Reverse the order
   * Find the total number of destinations
2. Start with an empty guest list:
   * Append three guests
   * Insert a guest at the beginning
   * Remove one guest with pop()
   * Print the final invitation list
3. Access the last three elements of a list without using negative indices.
4. Print only the even numbers from a list.
5. Print the squares of the first 10 natural numbers using a list.

**🎯 Bonus Challenge**

* Combine variables and lists:
  + Ask the user for five favorite movies.
  + Store them in a list.
  + Print the sorted list alphabetically.

**🚀 How to Submit**

**Instructions for Submission**

1. **Open Google Colab**: Visit <https://colab.research.google.com/> and sign in with your Google account.
2. **Create a New Notebook**:
   * Click on File > New notebook.
   * Title your notebook: Python\_Crash\_Course\_Ch2\_Ch3\_Practice\_YourName
3. **Solve Each Question**:
   * Add a text cell for each question by copying the question statement.
   * Add a code cell below the text cell to write your solution.
   * Ensure that your code is properly **commented** and **well-organized**.
4. **Save and Share**:
   * After solving all questions, click File > Save a copy in Drive.
   * Click Share.
   * Under "General access", select **Anyone with the link** and set it to **Viewer** or **Editor**.
   * Copy the shareable link.
5. **Submit**:
   * Submit the copied Google Colab link via the platform or form provided by your instructor/mentor.

**Submission Guidelines**

* Ensure your code **runs without errors**.
* Solutions should be **your own work**.
* Focus on **clarity**, **correctness**, and **code formatting**.
* Bonus points for **creative solutions** and **explanations**.

Happy Coding! 💻✨

**🚀 Final Tips**

* Solve first without searching.
* Use comments generously to explain "why" you wrote a line.
* Try additional modifications to each question to deepen your understanding.