Python Applications for Robotics

RWA#1

Version 1.0

Lecturer: Z. Kootbally

School: University of Maryland

Semester/Year: Spring/2024

MARYLAND APPLIED GRADUATE ENGINEERING

2024/02/15

Overview

v1.0

1 Guidelines

2 Package Structure

3 Assignment

1 Notes

4 Comments and Documentation

5 Grading Rubric

6 Submissions

Changelog

- v1.0 (02/15): Original version.

Conventions

- *link*
- 📂 **folder**
- 📄 **file**
- ✎ note
- ⚠ warning
- 📎 resource

GUIDELINES

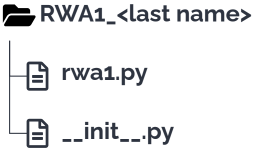
This assignment must be completed individually. Ensure compliance with all specified guidelines, as failure to follow any part of these guidelines will lead to a grade of zero for the assignment.

- Do not reuse a package obtained from another student.
- Keep your work confidential and refrain from sharing it with peers.
- While discussing assignment challenges is encouraged, refrain from exchanging code.
- Avoid using code generated by artificial intelligence tools, such as GitHub Copilot or ChatGPT.

Package Structure

Package Structure

Create **rwa1.py** in the package **RWA1_<last name>**. The assignment is performed by writing your program in **rwa1.py**



RWA1_<last name>

rwa1.py

__init__.py

Description

Write a program that processes information about products stored in a dictionary. The dictionary keys are product names (`str`), and the values are their prices (`float`). Implement functionality to add new products, delete products, and edit prices.

Instructions

- Start with a pre-filled dictionary of products and their prices. You are free to create any product in this dictionary.
- Continuously prompt the user for what operation they want to perform: add a product (a), remove a product (r), edit a price (e), or quit (q).
- For adding, ask for the product name and price, then add it to the dictionary.
- For removing, ask for the product name and remove it from the dictionary if it exists.
- For editing, ask for the product name and the new price, then update the dictionary.
- Ensure that the user can perform multiple operations until they decide to quit.
- Include input validation and error handling for better user experience.

Skills Practiced

Dictionary manipulation, loops, conditional logic.

NOTES

- Use a `while` loop to interact with the user and keep looping until the user decides to quit.
- To retrieve user inputs from the terminal, see the module `readline` and the function `input()`. Be careful, `input()` returns a `str` and sometimes you need `float` in your program.
- Use exception handling (see reading material slides) in the case where the user enters incorrect information.

intput()

readline

Comments

Include comments in your program so that the user (me) understands what is happening.

Documentation

Docstring documentation is not required for this assignment, unless you decide to use functions.

Grading Rubric

	Completion (10 pts)	*Runtime (15 pts)*	*Commenting (5 pts)*
Unsatisfactory (≤40%)	≤70%	Does not execute	No comments at all
Satisfactory (≤60%)	>70% and ≤80%	Executes with errors	Almost no comments
Good (≤80%)	>80% and ≤90%	No errors but no exception handling	Some comments
Excellent (≤100%)	>90%	No errors and with exception handling	Well commented

- *Completion* refers to the proportion of the requirements that have been fulfilled.
- *Runtime* refers to the execution of your program.
- *Commenting* encompasses inline comments. If you use functions then you need to document these functions. There is no need to produce HTML files.

SUBMISSIONS

Compress the folder named 📂 **RWA1_<last name>** into a zip file and then upload this file to Canvas.

⚠ Ensure your work is submitted by the deadline of 02/22 at 11:59 pm. Submissions made even a minute after this time will be categorized as late.

LATE SUBMISSIONS

Late submissions will incur a penalty according to the guidelines specified in the syllabus, without exceptions for any valid reason.

- Valid reasons include a doctor's note, proof of travel, or a note from a professor/MAGE.

✎ Students with special circumstances may submit their assignments late without incurring any penalties. However, it is required that these students inform me in advance of their intention to submit their work past the deadline.