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SDEV 300 / 7381

Lab 2 – User Menu

This program is being tested to catch invalid data and appropriately handle user input correctly. It has 6 functions, generate a secure password (user input determines complexity), calculates a percentage (user input for numerator & denominator and rounded digits place), calculate days until July 4, 2025, calculate the third leg of a triangle using laws of cosine (user input for first two legs & angle between them), calculate the area of a right cylinder ( user input for radius & height), and exit. All of these functions are displayed via a menu, any input not recognized from the menu will prompt a retry. Any invalid data will prompt a retry, in general. When entering the law of cosines for a triangle or area of a right cylinder inputs, they must be nonnegative. The denominator cannot be 0, and text input will not work when expecting numbers. Pylint was 9.88/10, with the pylint wanting me to break up a function that was 2 branches too long. I opted to keep it as was, the alternative seemed less readable than the original.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test** | **Input** | **Expected Output** | **Actual Output** | **Pass?** |
| **1** | 6 | Terminate Program | “Thank you for using …” Exit | Pass |
| **2** | 7, 1, 12, z, y, n, y, 6 | “Sorry not recognized, try again”, “Input length of password”, “Uppercase? y/n”, “Try again, y/n”, “Special char? y/n”, “Atleast 1 digit?” Generated password, Thank you | “Sorry not recognized, try again”, “Input length of password”, “Uppercase? y/n”, “Try again, y/n”, “Special char? y/n”, “Atleast 1 digit?” Generated password 25DNF7f2c9CI, Thank you | Pass |
| **3** | 2, 5, 0, 332, 2, 3, 6 | enter numerator, enter denominator, denominator cannot be 0, how many decimals to round to, percentage = 1.51%, Days until July 4, 2025: 612 Days, Thank you | enter numerator, enter denominator, denominator cannot be 0, how many decimals to round to, percentage = 1.51%, Days until July 4, 2025: 612 Days, Thank you | Pass |
| **4** | 4, 13, 7, 33.5, 5, 12, 8, 6 | enter first leg, enter second leg, enter angle between in degrees, third leg = 17.53, Enter radius, enter height, area = 36.19.11, Thank you | enter first leg, enter second leg, enter angle between in degrees, third leg = 17.53, Enter radius, enter height, area = 36.19.11, Thank you | Pass |
| **5** | 4, jkadb, -32, 32, -90, 3, -76, 40, 6 | enter first leg, leg must be nonnegative, enter second leg, leg must be nonnegative, enter angle, angle must be nonnegative, third leg = 34.07, Thank you | enter first leg, leg must be nonnegative, enter second leg, leg must be nonnegative, enter angle, angle must be nonnegative, third leg = 34.07, Thank you | Pass |
| **6** | 5, -8, 8, -12, 12, 6 | enter radius, radius must be nonnegative, enter height, height must be nonnegative, area = 2412.74, Thank you | enter radius, radius must be nonnegative, enter height, height must be nonnegative, area = 2412.74, Thank you | Pass |

**Test 1:**

A screenshot of a computer

Description automatically generated

**Test 2:**

A screenshot of a computer

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**Test 3:**

A screenshot of a computer

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**Test 4:**

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**Test 5:**

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**Test 6:**

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**Pylint:**

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