

# Kyra Samuel

SDEV 300

05/22/2021

Lab 2

## Tests

### a. Generate Secure Password

Input	Output
length=12 mixed-case=N lowercase=Y uppercase=N digits=Y characters=N	<pre>Enter an option: a Enter length (min=8): 12 Include Mix-Cased Characters (Y/N): N Include Lowercase Characters (Y/N): Y Include Uppercase Characters (Y/N): N Include Digits (Y/N): Y Include Characters (Y/N): N Generated a new 12-digit password: d5xwaa54r7vw</pre>
length=18 mixed-case=Y digits=N characters=Y	<pre>Enter an option: a Enter length (min=8): 18 Include Mix-Cased Characters (Y/N): Y Include Digits (Y/N): N Include Characters (Y/N): Y Generated a new 18-digit password: PEKb/dDG)yxw0r" (z</pre>

length=10 mixed-case=N lowercase=N uppercase=N digits=N characters=N	<pre> Enter an option: a Enter length (min=8): 10 Include Mix-Cased Characters (Y/N): N Include Lowercase Characters (Y/N): N Include Uppercase Characters (Y/N): N Include Digits (Y/N): N Include Characters (Y/N): N You selected 'N' for all custom options. A random 10-digit password will be generated. Generated a new 10-digit password: vqADgBuiSL </pre>
length=4 length=14 mixed-case=Y digits=Y characters=N	<pre> Enter an option: a Enter length (min=8): 4 Please enter a valid int value: 14 Include Mix-Cased Characters (Y/N): Y Include Digits (Y/N): Y Include Characters (Y/N): N Generated a new 14-digit password: NXt5u7TQwpCf8b </pre>

## b. Calculate a Format a Percentage

Input	Output
numerator=3.6 denominator=7 decimals=4	<pre> Enter an option: b Enter numerator: 3.6 Enter denominator (cannot equal 0): 7 Enter # of decimal points (min=0) or press 'Enter' for full result: 4  3.6/7.0 equals 51.4286% </pre>
numerator=1.6 denominator=9.5 decimals=* <b>pressed Enter</b> *	<pre> Enter an option: b Enter numerator: 1.6 Enter denominator (cannot equal 0): 9.5 Enter # of decimal points (min=0) or press 'Enter' for full result:  1.6/9.5 equals 16.842105263157894% </pre>

numerator=4 denominator=0 denominator=5 decimals=3	<pre> Enter an option: b Enter numerator: 4 Enter denominator (cannot equal 0): 0 Please enter a valid double value: 5 Enter # of decimal points (min=0) or press 'Enter' for full result: 3  4.0/5.0 equals 80.000% </pre>
numerator=6.4 denominator=5.3 decimals= -1 decimals=0	<pre> Enter an option: b Enter numerator: 6.4 Enter denominator (cannot equal 0): 5.3 Enter # of decimal points (min=0) or press 'Enter' for full result: -1 Please enter a valid int value: 0  6.4/5.3 equals 121% </pre>

c. How many days from today until July 4, 2025?

```

Enter an option: c
There are 1502 days until July 4th, 2025.

```

d. Use the Law of Cosines to calculate the leg of a triangle.

Code

```

def law_of_cosines():
    """ Prints the answer to the question presented in Lab Two.
    """
    angle_c = math.radians(37)

    c_squared = pow(8, 2) + pow(11, 2) - 2 * 8 * 11 * math.cos(angle_c)
    c_result = math.sqrt(c_squared)

    print("c=" + "{:.2f}".format(c_result))

```

## Result

```
Enter an option: d
c=6.67
```

### e. Calculate the volume of a Right Circular Cylinder

Input	Output
radius=5.4 height=18.7	<pre>Enter an option: e Enter radius: 5.4 Enter height: 18.7 V=1713.085 cubic units.</pre>
radius= -4 radius = 4 height=9	<pre>Enter an option: e Enter radius: -4 Please enter a valid double value: 4 Enter height: 9 V=452.389 cubic units.</pre> <p>- Neither radius, nor height can be less than 0</p>

### f. Exit Program

```
Enter an option: f
Thank you for participating! Cya.
```

## Return to Menu

```
Enter '<' to return to the menu at any time.

Enter an option: a
Enter length (min=8): 12
Include Mix-Cased Characters (Y/N): <

Welcome to the Python Math and Security Application
```

## Error Checking

Error Type	Menu Option	Screen Capture
Invalid int type for Password Length	a	<pre> Enter an option: a Enter length (min=8): nine Please enter a valid int value: 9 Enter a valid int value (min=8): </pre>
Invalid int type for Decimal Points	b	<pre> Enter an option: b Enter numerator: 9 Enter denominator (cannot equal 0): 3 Enter # of decimal points (min=0) or press 'Enter' for full result: 9.3 Please enter a valid int value: 3  9.0/3.0 equals 300.000% </pre>
Invalid Y/N	a	<pre> Include Mix-Cased Characters (Y/N): e Please enter Y/N: y Include Digits (Y/N): n Include Characters (Y/N): n Generated a new 14-digit password: nivCjkibSppeNz </pre>

## Pylint

main.py

```

Thank you for participating! :)
PS C:\Users\raeba\OneDrive\Desktop\Code\UMGC\SDEV300\L2> pylint main.py

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Your code has been rated at 10.00/10 (previous run: 10.00/10, +0.00)

```

lab\_two.py

```
PS C:\Users\raeba\OneDrive\Desktop\Code\UMGC\SDEV300\L2> pylint lab_two.py
```

```
-----  
Your code has been rated at 10.00/10 (previous run: 9.92/10, +0.08)
```