

**ANL252**

**Python for Data Analytics**

**Tutor-Marked Assignment**

**July 2023 Presentation**

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Question 1

1. Plagiarism could happen in coding due to academic pressure, lack of understanding of the language and time constraints. This could happen intentionally/unintentionally as programmers may take some of the codes from a website like stack overflow to assist them. To avoid this issue:

* Always cite your sources and use a plagiarism checker (K. Mercado, 2022)
  + To avoid any legal trouble, give the author credit by including a note of the name and URL of the original source.
* Get permission from the author (K. Mercado, 2022)
  + Seek permission from the original author if possible.
* Use a style guide (K. Mercado, 2022)
  + When writing a code, coders should remain a consistent style so it would be clear which part of the code was borrowed from someone else.
* Understanding the code
  + Invest more time into developing a stronger foundation of the coding language which helps to create original ideas.

b) Simple BMI calculator using Python A. Tuladhar (2021, September 21)

def bodymassindex(height, weight):

return round((weight / height\*\*2),2)

h = float(input("Enter your height in meters: "))

w = float(input("Enter your weight in kg: "))

print("Welcome to the BMI calculator.")

bmi = bodymassindex(h, w)

print("Your BMI is: ", bmi)

if bmi <= 18.5:

print("You are underweight.")

elif 18.5 < bmi <= 24.9:

print("Your weight is normal.")

elif 25 < bmi <= 29.29:

print("You are overweight.")

else:

print("You are obese.")

This was a simple code sourced online to perform a BMI calculator for the user. The user will be prompted to enter their height in meters and their weight in kilograms. Afterwards, the code will calculate its BMI by using the formula for BMI calculation, kg/m^2. With the application of if-else, the code will run and check if the user’s BMI is less than or equal to 18.5, which is considered underweight. If it does not fulfil the requirement, it will further check if the user’s BMI is between 24.9 and 18.5, which will be deemed a normal weight. Lastly, it will check if the BMI value is between 29.29 and 25, which will be deemed overweight, and any other value will be deemed obese.

c)

weight = float(input("Enter your weight (in KG): "))

# height = float(input("Enter your height (in meters): "))

# BMI = weight / height \*\*2

# while weight > 0 and height > 0:

# if BMI >= 30:

# weightCategory = "obese"

# elif 25 <= BMI <30:

# weightCategory = "overweight"

# elif 18.5 <= BMI < 25:

# weightCategory = "normal"

# else:

# weightCategory = "underweight"

# print("Your BMI is",BMI,"and you are considered",weightCategory)

# break

# Better understanding of the code

# While rewriting the code, allows the developer to have a better understanding of the code and enables him to maintain the code easily in the future.

* Improvements
  + Developers can enhance the code and add new improvements that can provide more features. (Sharovar, 2021)
  + Some Python codes written by other developers can be shorten and be simplified to easier understanding.
* To avoid plagiarism
  + When pieces of code are copied from another developer without citing them, it is considered plagiarism. This is regarded as a form of disrespect to the original creator, and it might affect the offender’s creditability, which might destroy his/her reputation. (The Consequences of Plagiarism in Coding: Write Clean and Unique Code Easily, 2020)

*Appendix 1*

A screen shot of a computer code

Description automatically generated with low confidence

**2)** The code in Appendix 1 could use some improvements to enhance its reliability, readability, maintainability, and overall quality. Some of the changes include renaming its variable names, adding comment lines, consistent prompts from the user and lastly, function decomposition, which breaks down codes into smaller sections to improve its readability and maintainability if there are any changes to it. I have updated the variable name to improve readability and broken down the function into smaller pieces for easier understanding.

# Updated variable names to improve readability

products\_list = {'laptop', 'mouse', 'webcam', 'keyboard', 'speaker'}

shopping\_list = []

# User prompted to enter what they would want to purchase and to be converted into string

while True:

print(f'We have a list of products here: {products\_list}.')

user\_input = str(input("What would you like to purchase today?"))

# After user key in the product that in listed in the product list, the system will prompt them to key in a purchase value and then it will save the choice into shopping\_list

if user\_input in products\_list:

price\_item = float(input(f"How much is the {user\_input} (in SGD)? "))

shopping\_list.append((user\_input, price\_item))

# User will be prompted to type if they would want to continue shopping and all the uppercase letters will be converted to lower case.

decision = input("Would you like to continue shopping? (Yes/No) ").lower()

if decision != 'yes':

break

else:

print('Wrong product! Please try again.')

# Showing user the updated shopping list

print('This is your shopping list:')

for item, price in shopping\_list:

print(f"{item}: {price} SGD")

**References**

1. K. Mercado (2022, July 8). *Does Plagiarism Issue Apply to Programming?* | Kode Java. <https://kodejava.org/does-plagiarism-issue-apply-to-programming/>
2. A. Tuladhar (2021, September 21). *Simple BMI calculator using python*  | Data Insight. <https://www.datainsightonline.com/post/simple-bmi-calculator-using-python> Date of Retrieval: 2/9/2023
3. Sharovar, E. (2021, December 3). Code Rewriting: When and Why. Waverley. <https://waverleysoftware.com/blog/code-rewriting-when-and-why/>
4. The Consequences of Plagiarism in Coding: Write Clean and Unique Code Easily. (2020, February 29). The Consequences of Plagiarism in Coding: Write Clean and Unique Code Easily. <https://codecondo.com/the-consequences-of-plagiarism-in-coding-write-clean-and-unique-code-easily/>