CMSC 104 Section 02
Fall 2025
Sample Quiz 2

Instructions:

This is a “sample” quiz to prepare students for the actual Quiz 2, which will be given in-class on Thursday, October 16. The quiz will be given under “open book” rules, which permit the use of books, notes or a laptop during the quiz. Students MAY NOT work with other students, nor interact in real-time online with other students. All work must be the student’s own.

Section 1: True/False and Multiple Choice.

This section has 8 questions, each of which is worth 4 points. NO partial credit will be given on questions in this section.

1. Suppose that your program includes the following statement:

   ```
   s = “Beat the Steelers”
   ```

   What is the result of the statement

   ```
   print(s[10:]
   ```

   a. teelers
   b. Beat the S
   c. Beat the Steelers
   d. None of the above

2. Suppose that we have list

   ```
   afc_north = [“Bengals”, “Browns”, “Steelers”, “Ravens”]
   ```

   What is the result of the statement

   ```
   print(afc_north[-2])
   ```

   a. Bengals
   b. [Steelers, Ravens]
   c. Steelers
   d. None of the above

3. True or False: a function will end after the first time it encounters a return statement *this should say “executes”
    a. True
    b. False

4. What happens if a function call has 3 arguments and the function definition has 4 parameters?
    a. The program crashes
    b. The values of the three arguments are copied into the first 3 parameters; the last parameter starts with no value
    c. The values of the three arguments are copied into the last 3 parameters; the first parameter starts with no value
    d. None of the above is correct

5. What does a function return if the function has no return statement?
    a. The special value None of the special type NoneType
    b. It returns nothing - there’s no return statement
    c. The program crashes
    d. None of the above is correct

6. Where is the only place a function call cannot occur in a program
    a. This is a trick question; a function call can occur anywhere in a program
    b. Only on the left side of the equals sign in an assignment statement
    c. A function call can only occur in the main program. It is illegal everywhere else
    d. None of the above is correct

7. True or False: if we have the statements
    ```
    C = 12//5
    ```
    and
    ```
    D = 12%5
    ```
    Then C has the value 2 and D has the value 2.
    a. True
    b. False

8. In this part of the class we learned about “for each” loops. If we have the list
    ```
    counties = ["Allegany", "Anne Arundel","Baltimore",
    "Baltimore City", "Calvert", "Carroll", "Caroline",
    "Cecil", "Charles", "Dorchester",
    "Frederick", "Garrett", "Harford", "Howard", "Kent",
    "Montgomery", "Prince George's", "Queen Anne's",
    "Somerset", "St. Mary's",
    "Talbot", "Washington", "Wicomico", "Worcester"]
    ```
    We can use this new loop to print out each county name in turn:

```
for county in counties:
    print(county)
```

True or False: we could use a “for i” loop; that is:

```
for i in range(0,len(counties),1):
    print(counties[i])
```

To do the same thing, but the new loop type is simpler to use for this limited case.

a. ***True***
b. False

Section 2: Short Answer

This section has 6 questions, each of which is worth 8 points. Partial credit WILL be given for questions in this section.

9. Suppose we have the following in our program:

```
counties = ["Allegany", "Anne Arundel","Baltimore", "Baltimore
City", "Calvert", "Carroll", "Caroline", "Cecil", "Charles",
"Dorchester",
          "Frederick", "Garrett", "Harford", "Howard", "Kent",
          "Montgomery", "Prince George's", "Queen Anne's",
          "Somerset", "St. Mary's",
          "Talbot", "Washington", "Wicomico", "Worcester"]
```

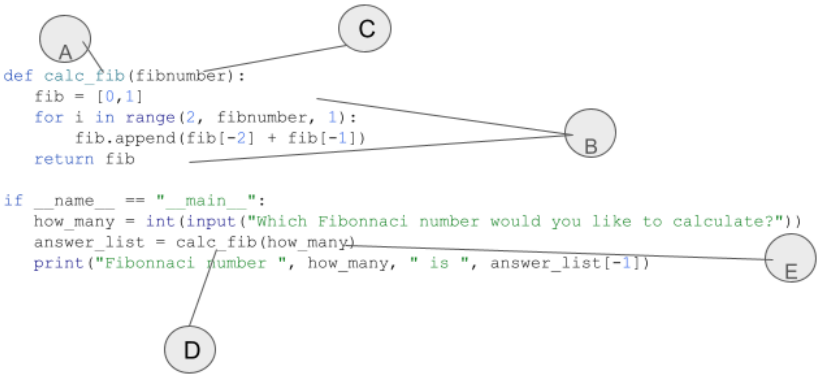
What print statement would use list slicing to print out only the counties that begin with the letter “C”?

print(counties[4:9])

10. Suppose you want to add a new item to a list, in a specific place in the list. Would you use the `.append()` method or the `.insert()` method? Why?

.insert. .append only adds a new item at the end of a list.

11. The program below includes a function call and a function. Label the 5 major parts. That is, match up the items labeled A, B, C, D, and E with the terms listed.



Argument(s)
Parameter(s)
Function call
Function body
Function name

A: function name; B: function body; C: parameter(s); D: function call; E: argument(s)

12. What is the purpose of a return statement in a function?

To provide a value that has been computed in the function back to the calling main program or function.

13. Suppose we have the following list:

```
states = ["Alabama", "Alaska", "Arizona", "Arkansas", "California", "Colorado",
"Connecticut", "Delaware", "Florida", "Georgia",
         "Hawaii","Idaho", "Indiana", "Illinois", "Iowa", "Kansas", "Kentucky",
"Louisiana", "Maine",
"Massachusetts", "Michigan", "Minnesota", "Mississippi", "Missouri", "Montana",
"Nebraska", "Nevada", "New Hampshire", "New Jersey", "New Mexico", "New York",
         "North Carolina", "North Dakota", "Ohio", "Oklahoma", "Oregon",
"Pennsylvania", "Rhode Island", "South Carolina",
         "South Dakota", "Tennessee", "Texas", "Utah", "Vermont", "Virginia",
"Washington", "West Virginia", "Wisconsin",
         "Wyoming"]
```

What would be the result of the statement

```
print(states[:9])
```

```
["Alabama", "Alaska", "Arizona", "Arkansas", "California", "Colorado",
"Connecticut", "Delaware", "Florida"]
```

14. What is the purpose of importing a python module, such as the math module, using
```
import math
```

To use code that has already been written to solve a problem, saving you the time of writing it yourself. Also, the code is likely more robust than code you would write; e.g., it handles math with large numbers better.

Section 3: Coding

This section has 2 questions, each of which is worth 10 points. Partial credit WILL be given for questions in this section.

15. Write a program that starts with a list containing the following integer values: [1,4,7,10,13,16,19]. Your program MUST use a for loop to go through the list and calculate the average - the arithmetic mean - of those values. Then print out the average you calculated, labeled so the user will understand it. You may use either type of for loop you prefer.

```
#using "for each" loop
if __name__ == '__main__':
    l = [1,4,7,10,13,16,19]
    sum = 0
    for i in l:
        sum += i
    avg = sum/len(l)
    print("The average is:", avg)
```

```
Sum = 0
For i in range(0,7,1):
   Sum = sum + l[i]
```

16. Write a program that calls a function to calculate the volume of a sphere, using the formula V = (4/3) * pi * r**3, where r is the radius. Your program MUST work as follows:

a. The main program asks the user to input the radius of the sphere
b. The main program then calls the function that calculates volume. The value of the radius must be passed.
c. The function then must return the volume
d. The main program prints out the volume, labeled so the user can understand what it is.

```
def calc_volume(radius):
    pi = 3.14159
    volume = (4/3) * pi * radius**3
    return volume

if __name__ == '__main__':
    rad = float(input("Enter the radius of the sphere: "))
    volume = calc_volume(rad)
    print("The volume is:", volume)
```