Midterm 2 Review

- We covered Two Modules – All about python

- What to expect:
  - 40 Multiple choice (out of 53 testing bank) 2.5/each
  - ***Grades are Finalized right after the exam.***

- *Logic error does not cause the program to crash.*
- *Syntax error: age+50=years*
- Garbage collection *is the process where objects that are no longer needed are deleted.*
- Assigning a value to a floating point variable that is too large for the computer to represent is a condition called *overflow.*
- *Give the equation for calculating loan interests: interest = [principal x rate of interest] x time. , write the python code. interest = (principal * interest) * time*
- Which print statement would display the following: 'C:\Users\Mika\grades.txt'(without the single quotes)? print(r'C:\Users\Mika\grades.txt')
- my_list = [2, 8, 3, 1, 18, 5] print(my_list[3] + my_list[1] * 2), output:17

- my_set=set([1,2,3]) , assigns a new variable, my_set, with a set that contains three elements
- fruits_dict["Lemon"]=0.75, changes the value associated with key "Lemon" to 0.75 in the dictionary fruits_dict
- dict data type is the correct choice to store the number of wins associated with each basketball team in the NBA
- The result of 1 + int(3.9) / 2 is 2.5
- The output of following code: True False False
  - my_string = 'The area postal code is 99501’
  - print(my_string[-5:].isdigit())
  - print(my_string[:3].isupper())
  - print(my_string[:3].islower())

- The output of an input grade 75 is: B
  - If grade < 50
  - Put "F" to outputElse
  - If grade < 60
  - Put "D" to outputElse
  - If grade < 75
  - Put "C" to outputElse
  - If grade < 85
  - Put "B" to outputElse
  - If grade <= 100
  - Put "A" to output
  - Else
  - Put "Invalid grade" to output

- After following code is executed, the value of test_val is: 13
  - a = 12
  - test_val = 6
  - if a * 2 == test_val:
  - a = a + 7
  - else:
  - test_val = 2 * a
  - test_val = a + 1
- For what values of x will "Medium" be output? 21 < x < 40
  - If x > 40: Output "Large“
  - Else If x > 20: Output "Medium“
  - Else If x > 10: Output "Small“
- A company wants to send a reminder email to users who have not logged in for more than 10 days, but less than 20 days. Following expression can be used to decide if a user should get an email or not:
  - if days_since_login > 10 and days_since_login < 20:

- What condition should replace COND to output "Same name" only if the values of two variables are the same: my_name == your_name
  - my_name = input("Enter my name: ")
  - your_name = input("Enter your name: ")
  - if COND:
  - print("Same name")
- Which input value causes "Goodbye" to be output next? Any x < 0
  - x = int(input())
  - while x >= 0:
  - # Do something
  - x = int(input())
  - print('Goodbye’)
- Output: 3 7
  - my_list = [3, 7, 0, 2, -1, 8]
  - index = 0
  - while my_list[index] > 0:
  - print(my_list[index], end=' ‘)
  - index += 1

- Which of the following loops is best implemented with a 'for' loop: Counting the number of negative values in a list of integers.
- Which of the following loops is best implemented with a 'while' loop: Asking the user to enter positive integers, exiting by entering -1.
- A programmer must write a 500 line program. Which is most likely the best approach: Write 10-20 lines, run and debug, write 10-20 more lines, run and debug, repeat
- The unary operator has higher precedence in Python comparing to arithmetic operation (+ - * /)
  - unary -, change 2 to -2
- Which statement is equivalent to the following assignment? x -=2 + y
  - x = x - (2 + y)

- Assume a and b are variables that hold the base and height of a right triangle. The length of the long side (hypotenuse) is calculated as the square root of a^2 + b^2. Following expression calculates the length of the hypotenuse: math.sqrt(math.pow(a, 2)) + math.pow(b, 2))
- The special two-item character sequence that represents special characters like \n is known as a(n) escape sequence (normally we really call them “escape characters”).
- Which of the following statements produces an error? Assume string_1 = 'abc' and string_2 = '123’: string_1[1] = ‘B’
- Output: 17
  - my_list = [2, 8, 3, 1, 18, 5]
  - print(my_list[3] + my_list[1] * 2)
- What are the contents of names_list after the following code is executed?
  - names_list = ['one', 'two', 'three’]
  - digits_list = ['1', '2', '3’]
  - names_list = names_list + digits_list
  - Output: ['one', 'two', 'three', '1', '2', '3']

- The variable emails_dict is assigned with a dictionary that associates student ids with email addresses. Which statement prints the email address associated with the student id "C2104"?
  - print(emails_dict["C2104"])
- Which pair shows the correct classification of the given data type?
  - string, immutable sequence type
- List data type is the correct choice to store a student's test scores in chronological order
- Which line in the following program causes a runtime error?
  - sales = { "apples": 0, "lemonade": 0 }
  - sales["apples"] = sales["apples"] + 1
  - del sales["lemonade"]
  - print(len(sales["apples"])) integer does NOT have length
- Which expression calculates the average of first_num and second_num?
  - first_num = input('Enter the first number: ‘)
  - second_num = input('Enter the second number: ‘)
  - (float(first_num) + float(second_num)) / 2 (I guess this prevent string?)

- Which print statement displays: 'Tokyo had 9.273000 million people in 2015’? print(f'{"Tokyo":s} had {9.273:f} million people in {2015:d}’)
- What is output? Pyt, yt, t
  - new_string = 'Python’
  - my_index = 0
  - while my_index != len(new_string)/2:
  - print(new_string[my_index:int(len(new_string)/2)])
  - my_index += 1
- When was Jen unemployed? 2015 < time < 2017, and before 2010
  - if (year >= 2010 and year <= 2014):
  - print('Jen employed at Regal Cinemas’)
  - elif (year >= 2018):
  - print('Jen employed at AMC Cinemas’)
  - else:
  - print('Unemployed')

- What conditions have to be true to make the following code display "B"? color is 'red' and style is 4
  - if color == 'red’:
  - if style < 3:
  - print('A’)
  - elif style < 5:
  - print('B’)
  - else:
  - print('C’)
  - elif color == 'blue’:
  - print('D’)
- Which expressions for YYY and ZZZ will output "Young" when user_age is less than 20 and "Young but not too young" when user_age is between 10 and 20? YYY: user_age < 20 ZZZ: user_age > 10
  - age_type = ‘’
  - if YYY:
  - age_type = age_type + "Young“
  - if ZZZ:
  - age_type = age_type + " but not too young“
  - print(age_type)

- What is the final value of z? 21
  - grades = { 'A': 90, 'B': 80, 'C': 70, 'D': 60 }
  - my_grade = 70
  - if my_grade not in grades:
  - z = 1
  - else:
  - z = 2
  - if 'F' in grades:
  - z = z + 10
  - else:
  - z = z + 20
- Excess indentation must be removed from which lines to make the code correct?
  - 1. print('start’)
  - 2. if x > 10:
  - 3. print('large’)
  - 4. else:
  - 5. print('small’)
  - 6. print('done')

- What is the output? 00 01 10 11
  - for j in range(2):
  - for k in range(4):
  - if (k == 2):
  - break
  - print(f'{j}{k}', end=' ‘)
- What is the ending value of z? 4+3+1+0=8
  - z = 0
  - a = 5
  - while a > 0:
  - a = a – 1
  - if a == 2:
  - continue
  - z = z + a

- What is the output? 3
  - names = ['Gerry', 'Preet', 'Jimin', 'Susan’]
  - index = 0
  - while index < len(names):
  - if names[index] == 'Susan’:
  - break
  - else:
  - index += 1
  - else:
  - print('Done’)
  - print(index)
- Which XXX/YYY combination will create a rectangle of '*' characters, with 5 rows, and each row containing 10 '*' characters?
  - for XXX:
  - for YYY:
  - print('*', end=‘’)
  - print()
  - ANS: i in range(5) / j in range(10)

- What sequence is generated by range(5)? 0 1 2 3 4
- Which choice fills in the blank so that the output prints one line for each item in sports_list, as in: 1. Hockey?
  - sports_list = ['Hockey', 'Football', 'Cricket']
  - for i in range(len(sports_list)):
  - print(f'{i+1}. {sports_list[i]}')
- The following program prints the number of integers in my_list that are greater than the previous integer in the list. Which choice fills in the blank to complete the for loop?
  - my_list = [3, 2, 7, 8, 6, 9]
  - count = 0
  - for i in range(1, len(my_list)):
  - if my_list[i] > my_list[i-1]:
  - count = count + 1
  - print(count)

- Fill in the blank so that the output is a count of how many negative values are in temperatures?
  - temperatures = [-2, 8, 4, -7, 18, 3, -1]
  - count = 0
  - for t in temperatures:
  - if t<0:
  - count = count + 1
  - print("Total negative temperatures:", count)
- Fill in the blank so that the loop displays all odd numbers from 1 to 100.
  - i = 1
  - while i <= 100:
  - print(i)
  - i = i+2

- How many times will the body of the loop be executed? 7
  - number = 70
  - guess = 55
  - while number != guess:
  - if number > guess:
  - guess = guess + 10
  - else:
  - guess = guess – 1
  - print('The number is:', guess)
- What initial value of x will cause an infinite loop? Any odd number
  - x = int(input())
  - while x != 0:
  - x = x – 2
  - print(x)

- Which is an essential feature of a while loop having the following form?
  - while loop_expression:
  - loop_body
  - ANS: The loop_expression should be affected by the loop_body