**COMP130 HW3: Conditionals  
instructor: John MacCormick**

Consider the following snippet of Python code, which contains four errors. We assume the user enters an integer such as 5, 26, or -9. The program is not required to check that the input is an integer. However, the program is intended to check that the integer is both odd and positive.

num = int(input('Please enter an odd positive integer: '))

if num >= 0:

print('The number was meant to be positive.')

print('Please follow the instructions next time.')

if num % 1 == 0:

print('The number was meant to be odd, but')

print(num, 'is an even integer.')

if num > 0 or num % 2 == 1:

print('You followed the instructions really well.')

print(num, 'is an odd positive integer.')

Question 1. (12 points) Paste in a corrected version of this code which fixes the four errors, highlighting each change you made.

Question 2. (15 points) Write a program similar to the above that asks the user to input an integer greater than 50 which is also a multiple of 9. The program should print out messages similar to the above, giving the user feedback if they make a mistake (but you may assume the input is an integer).

In the imaginary European country of Germatugal, the marginal income tax rate is zero for incomes up to 10,000 euros, then 15% up to 20,000 euros, then 18% up to 50,000 euros, then 25% beyond 50,000 euros. The following code is intended to print out the user’s marginal income tax rate, but it contains four errors. We assume the user enters a nonnegative integer, so the program is not required to check that the input is a nonnegative integer.

income = int(input('Please enter your income as a non-negative integer in euros: '))

if income <= 10000:

marginal\_rate = 5

elif income > 20000:

marginal\_rate = 15

else income <= 50000:

marginal\_rate = 18

elif:

marginal\_rate = 25

print('Your marginal tax rate is', marginal\_rate, 'percent.')

Question 3. (12 points) Paste in a corrected version of this code which fixes the four errors, highlighting each change you made.

Question 4. (15 points) Write a program similar to the above for the imaginary African country of Kendamalia. In Kendamalia, the marginal income tax rate is 5% for incomes up to 5000 shillings, then 10% up to 15,000 shillings, then 12% up to 25,000 shillings, then 16% up to 40,000 shillings, then 20% beyond 40,000 shillings.

Question 5. (12 points) Assuming n is an int, which values of n make the following Python Boolean expressions True?

(a) n == 10 or n > 15

(b) n != 2 and not n < -3

(c) not (n >= 3 or n < -2)

(d) (n == 10 or n > 15) and (n < 20 or n == 25 or n == 27)

Question 6. (20 points) At Sodinnick College, the only letter grades awarded are A, B, C, and D. Professor Goldwasser awards an A for scores of 90 or better, a B for 80 to 89 inclusive, and C for 65 to 79 inclusive, and a D for under 65. Professor Bengio is the harshest grader at the college, awarding an A for scores of exactly 100, a B for 95 to 99 inclusive, a C for 75 to 94 and a D for under 75. Complete the following Python code so that it will print out the correct letter grade.

professor = 'Goldwasser' # Could be 'Goldwasser' or 'Bengio'

score = 78 # Could be any integer between 0 and 100 inclusive

# ...

# Fill in with your own code, setting the variable letter\_grade

# ...

print('Your grade is', letter\_grade)

Total points on assignment: 86