Tutorial 03 – Decisions

This tutorial is aimed at familiarising you with decisions using conditional statements & booleans.

Do not worry if you can't do all the exercises, especially the difficult ones. Give them a try and if you are stuck, ask your tutor.

1. Download the examples and last week's solutions. Check through the solutions and make sure you could do them all**.** Unzip this week's examples.

2. Make a copy of 02HelloName from last week and modify it so that if the name entered is "Chris Walshaw", the output is changed to "Hello Chris Walshaw, COMP1753 module leader". Any other name (including a misspelling of "Chris Walshaw") should result in the same output as previously, i.e. "Hello [name]" where [name] is the name input by the user.

3. Make a copy of 05HelloNames from last week and modify it so that if the first name entered is "Chris" and the last name is "Walshaw", the output is changed to "Hello Chris Walshaw, COMP1753 module leader". Any other first / last names (including a misspellings) should result in the same output as previously, i.e. "Hello [first_name] [last_name]" where [first_name] & [last_name] are the names input by the user.

4. Make a copy of 05Calculator_ifElifElse from this week. There is a problem in that if the user inputs 0 for the second number and selects the divide operation, the program crashes with an error (because you can't divide by 0). Modify it so that the code validates the input by checking for this problem: if the user does input 0 for the second number and selects the divide operation, the code should output the message "Answer: you can't divide by zero." [Note: this is quite hard – do your best.]

5. Make a copy of 14Concessions_orOperators (or one of the other programs which offers 20% discounts) and modify it so that if the user's name is "Chris", the user automatically gets a 30% discount regardless of whether they are a student or what their age is.

6. Write a program which gives the output "Hello [name], your lucky number is [number]", where [name] is the name input by the user and [number] is a randomly generated number between 1 and 10. Modify it so that if the lucky number happens to be 3 or 9 it also says "and you have won a prize" and if the lucky number happens to be 7 it says "and you have hit the jackpot".
    a. Do the modifications just using **`if`** statements
    b. Do the modifications using **`if`** and **`elif`** statements and the **`or`** operator

7. Write a turtle graphics program which asks the user which shape they want. If they respond with "triangle" it should draw a triangle, if they say "square" it should draw a square. Include some validation to check that the user's input is recognised and output a warning if not.

8. Read the w3schools pages mentioned in the lecture. We have not covered everything there but this will give you more insight into conditionals & operators:
    a. https://www.w3schools.com/python/python_conditions.asp
    b. https://www.w3schools.com/python/python_operators.asp