CS 115 - Introduction to Programming in Python

Lab 03

Lab Objectives: Functions

Notes:

- You should not use lists, tuples, dictionaries in your solution.
- For each of the functions below, you should include a docstring comment. The docstring should have the following format:

```
"""Summary or Description of the Function

    Parameters:
    argument1 (type): Description of arg1

    Returns:
    type: return value
"""
```

1. Create a program, `Lab03_yourname_Q1.py` that is used to input and validate passwords. A password is valid if it has at least 3 characters, all characters are numeric, the space/interval between characters is not fixed (ex: 12345, 2468), it does not contain the birth year of the user. The program should define the following functions:

   a) `is_spaced()`: takes a password as a parameter and returns True if the space/interval between all digits is not the same. Example: 12345 is not spaced, 34569 is spaced. Hint: you may want to use the `ord()` function, that returns the integer Unicode value for a given character.

   b) contains_birthyear(): takes a password and a birth year as parameters and returns True if the password contains the birth year (in the correct order, with or without characters between) and False if not. Example:
   contains_birthyear('8657196455', 1964) -> True
   contains_birthyear('8657159565555455', 1964) -> True
   contains_birthyear('8965715555554565', 1964) -> False

   c) `is_valid_password()`: takes a password and a birthyear as parameters, and using the functions defined in the previous steps returns True if the password passed as a parameter is valid, and False if not. A password is valid if it meets the following criteria:
      - Has at least 3 characters.
      - All characters are numeric
      - The spacing/interval between adjacent characters is not fixed.
      - The password does not contain the birth year.

2. In the script, using the functions defined above, input passwords from the user until a valid password is entered.

Sample Run:

```
Enter password: 12
Enter year of birth: 1990
12 is not a valid password - try again

Enter password: 1234567
Enter year of birth: 1990
1234567 is not a valid password - try again

Enter password: 369
Enter year of birth: 1990
369 is not a valid password - try again

Enter password: 10101010
Enter year of birth: 1990
10101010 is not a valid password - try again

Enter password: 3928519909484
Enter year of birth: 1990
3928519909484 is not a valid password - try again

Enter password: 5551555955595550
Enter year of birth: 1990
5551555955595550 is not a valid password - try again

Enter password: 3895482
Enter year of birth: 1990
Thank you - password is valid
```