Exercise #9

- ☐ **Problem 1**.
  - ◘ Write a function named **has_dups** that has one parameter, a **list** whose elements are of type int. The function returns True if the list has any duplicate elements (that is if any element appears more than once), and False otherwise.

- ☐ **Problem 2.**
  - ◘ Write a function, give the lists, lst1 and lst2, return a new sorted list consisting of all the elements of lst1 that do not appear in lst2 together with all the elements of lst2 that do not appear in lst1.
  - ◘ For example, if lst1 is [4, 3, 2, 6, 2] and lst2 is [1, 2, 4, 1, 5], then the new list would be [1, 1, 3, 5, 6].
  - ◘ Note that duplicate elements are also duplicated in the new list.
  - ◘ Associate the new list with the variable new_list, and don't forget to sort the new list.

- ☐ **Problem 3.**
  - ◘ Write a function, give the lists list1 and list2, not necessarily of the same length, return a new list consisting of alternating (交錯) elements of list1 and list2
  - ◘ For example, if list1 contained [1, 2, 3] and list2 contained [4, 5, 6, 7, 8], then the new list should contain [1, 4, 2, 5, 3, 6, 7, 8]. Associate the new list with the variable list3.
- ☐ **Problem 4.**
  - ◘ *Fibonacci sequence:* each number (except the first two) is the sum of the previous two number: 0, 1, 1, 2, 3, 5, 8, 13, ...
  - ◘ Write a function, give the positive integer n, return a list consisting of the portion of the Fibonacci sequence less than or equal to n.
  - ◘ For example, if n is 6, then the list would be [0, 1, 1, 2, 3, 5] and if n is 1, then the list would be [0, 1, 1].

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- You don’t need to turn in your homework, but you should practice all problems because they may appear in the later exam.
  - ■ 作業自己練習就好，不用繳交，之後考試可能會出現類似題目