HW09 Prob. 1 — Self-Designed Problem

- Design a programming problem and provide a reference solution.
  - The problem should be solvable with what we have taught till **U13**.
  - Avoid unnecessary use of features and functions not covered in **U13**.
- You will submit a program which contains the author name, problem description, required skills and functions, example IOs, and a reference solution.
  - Conform to the format specified in previous homework.

HW09 Prob. 2 — Full House

- The poker deck we consider consists of 54 cards, including two jokers and four suits each of which has thirteen cards.
  - A joker card can be designated by its holder as any card they choose with no restrictions.
  - The four suits are clubs (♣), diamonds (♦), hearts (♥), and spades (♠); no suit is higher than another.
  - Each suit includes thirteen ranks: ace, king, queen, jack, and two to ten.

- Each card is represented by a string.
  - 'J' for joker.
  - The other cards are denoted by a two or three-character string where
    - the first character represents the suit ('C' for club, 'D' for diamond, 'H' for hearts, and 'S' for spade), and
    - the following character(s) represents the rank ('A' for ace, 'K' for king, 'Q' for queen, 'J' for jack, and '10' to '2' for 10 to 2.
  - The representation is case-insensitive.

- A poker hand consists of five cards, denoted by a list of five strings.
  - Example:
    ```
    ['SK','D2','J','s3','ha']
    ```
- A full house is a three of a kind (three cards of the same rank) and a pair (two cards of the same rank).
  - Examples:
    ```
    ['sk','dk','hk','s2','d2']
    ['da','hk','ca','ha','sk']
    ['s2','c2','d3','h3','d2']
    ['d10','h9','c10','c9','s10']
    ['sq','hq','d7','s7','j'] # joker as queen
    ```

- Joker(s) must be designated to get the highest ranking hand.
  - `['s2','c2','h2','hk','j']` should be considered as four of a kind, i.e., joker as rank 2, rather than full house, i.e., joker as king.
- Your task is to implement `is_full_house(hand)` which returns `True` if *hand* is full house, or `False`, otherwise.
  - *hand* is a list of five card strings. You can assume that *hand* is legal.
  - Place the function `is_full_house(hand)` in full_house.py for submission.

Submission Guidelines

- Due: December 22, 2021 via NTU Cool
- Name your program as instructed in the problems.
- Pay attention to your programming style.
- **Avoid using Python features and functions not covered in lectures yet.**