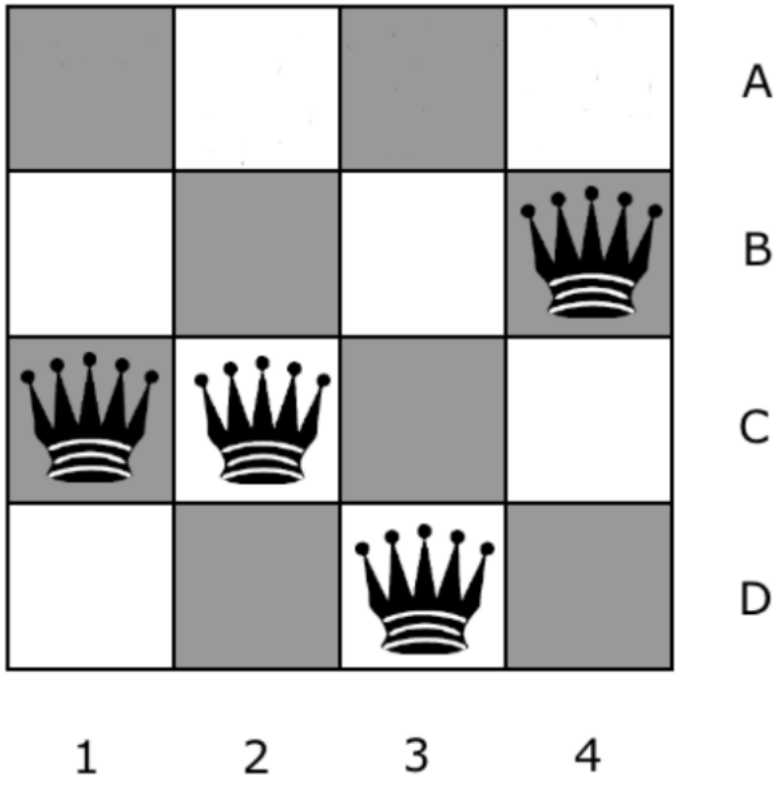
AU332 Quiz5

* 基本信息：

姓名：

学号：

The min-conflicts algorithm attempts to solve CSP iteratively. It starts by assigning some value to eac h of the variables, ignoring the constraints when doing so. Then, while at least one constraint is violat ed, it repeats the following: (1) randomly choose a variable that is currently violating a constraint, (2) a ssign to it the value in its domain such that after the assignment the total number of constraints violat ed is minimized (among all possible selections of values).
In this question, you are asked to execute the min-conflicts algorithm on the 4-queens problem show n below. Each queen is dedicated to its **own column** (i.e. Q_1, Q_2, Q_3, and Q_4 and the domain for each one of them is A, B, C, D). In the configuration shown below, we have Q_1 =C, Q_2 =C, Q_3 =D, Q_4 =B. T wo queens are in conflict if they share the same row, diagonal, or column (in this setting, they can ne ver share the same column).



You will execute min-conflicts three times, starting with the state shown in the figure. When selecting a variable to reassign, min-conflicts chooses a conflicted variable at random. For this problem, assum e that your random number generator always chooses the leftmost conflicted queen. When moving a queen, move it to the square in its column that leads to the fewest conflicts with other queens. If there are ties, choose the topmost square among them.

*1. Starting with the queens in the configuration shown in the above figure, which queen will be moved, and where will it be moved to?
Answer: Queen ( ) to Position ( )
【多选题】

- [x] Q1
- [ ] Q2
- [ ] Q3
- [ ] Q4
- [x] Position A
- [ ] Position B
- [ ] Position C
- [ ] Position D

*2. Continuing off the previous question, which queen will be moved, and where will it be moved to?
Answer: Queen ( ) to Position ( ) 【多选题】

- [ ] Q1
- [x] Q2
- [ ] Q3
- [ ] Q4
- [x] Position A
- [ ] Position B
- [ ] Position C
- [ ] Position D

*3. Continuing off of previous question, which queen will be moved, and where will it be moved to?
Answer: Queen ( ) to Position ( ) 【多选题】

- [x] Q1
- [ ] Q2
- [ ] Q3
- [ ] Q4
- [ ] Position A
- [ ] Position B
- [x] Position C
- [ ] Position D

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