**Lecture Notes 06**
**CSE 350 Spring 2026**

**Quiz 2/10/2026**

**Q1: Given the following interface `Iterator StartScanNonStrict(lk, lv)`** for some `Key` and `Value` types, which returns an iterator that can iterate over exactly all the data entries $\geq$ `(lk, lv)` in lexicographical order – assuming both $lk$ and $lv$ is a valid value, how do you convert the Iterator into one for the following range scans? Write your answer as pseudocode.

You may assume an iterator `i` is bidirectional so that you can apply `++` and `--` on it, and to get the key and values you can write `i->key` and `i->value`. You may use negative infinity and positive infinity as $+\infty$ and $-\infty$ in your pseudocode.

1. Data entries $>$ `(lk, lv)` for valid `lk` and `lv`;
2. Data entries with keys $\geq$ `lk` for valid `lk`;
3. Data entries with keys $>$ `lk` for valid `lk`;
4. All data entires.

**Solution:**

1. Data entries $>$ `(lk, lv)` for valid `lk` and `lv`;

```
i <- StartScan(lk, lv)
if i->key == lk and i->value == lv then
    ++i
```

2. Data entries with keys $\geq$ `lk` for valid `lk`;

```
i <- StartScan(lk, -oo)
```

3. Data entries with keys $>$ `lk` for valid `lk`;

```
i <- StartScan(lk, +oo)
```

4. All data entires.

```
i <- StartScan(-oo, -oo)
```