**DBMS FINAL**

* **Relational Algebra**
* Select: **σ p(r)**

|  |  |  |
| --- | --- | --- |
| **BRANCH\_NAME** | **LOAN\_NO** | **AMOUNT** |
| Redwood | L-23 | 2000 |
| Perryride | L-15 | 1500 |
| Downtown | L-14 | 1500 |
| Mianus | L-13 | 500 |
| Roundhill | L-11 | 900 |
| Perryride | L-16 | 1300 |

* **Canonical Cover:** A minimal set of functional dependencies (FDs) that captures all the same information as the original set, with no redundancy and implying the closure of the original set.
* **Extraneous Attribute:** An attribute in a functional dependency that can be removed without affecting the closure of the entire set of FDs. It can be either left extraneous (on the determinant side) or right extraneous (on the dependent side).
* **Super key:** A super key is any attribute (or set of attributes) within a table that can uniquely identify each row (tuple) in that table. There can be multiple super keys for a single table.
* **Candidate key:** A candidate key is a minimal super key. It's a subset of a super key that still uniquely identifies each row but doesn't contain any redundant attributes. In simpler terms, it's the smallest set of attributes that guarantees uniqueness.

Think of it like this: imagine a key ring with many keys. Any single key on the ring (super key) can unlock the door (uniquely identify a row). But ideally, you want to use the smallest key that works (candidate key) to avoid carrying extra weight (redundant attributes).

Not all super keys are candidate keys, but all candidate keys are super keys.