Lab 4 - Relational Algebra Queries

1. $\Pi_{Year, title}$ (BOOKS)
2. $\sigma_{Major = 'cs'}$ (STUDENTS)
3. STUDENTS $\times$ BOOKS
4. $\sigma_{Publisher = 'McGraw-Hill' \text{ AND } Year < 1990}$ (BOOKS)
5. Π_{AName} ($\sigma_{Address = 'Davis'}$ (AUTHORS))
6. Π_{StName} ($\sigma_{Age > 30 \text{ AND } Major \neq 'CS'}$ (STUDENTS))
7. AUTHORS.AName $\leftarrow \rho_{AUTHORS(Name)}(\Pi_{AName}(AUTHORS))$
8. Π_{StName} (STUDENTS $\bowtie_{Major = 'cs'}$ borrows)
9. Π_{Title} (BOOKS $\bowtie_{AName = 'Jones'}$ has-written)
10. temp $\leftarrow$ BOOKS $\bowtie_{AName = 'Jones'}$ has-written

    Answer $\leftarrow \Pi_{Title}$ (temp $\bowtie_{keyword \neq 'database'}$ describes)
11. MinAge $\leftarrow$ Min (Π_{Age}(STUDENTS))

    Answer $\leftarrow \Pi_{StName}$ ($\sigma_{Age = MinAge}$ (STUDENTS))
12. MaxYear $\leftarrow$ Max (Π_{year} (BOOKS))

    Answer $\leftarrow \Pi_{StName}$ ($\sigma_{year = MaxYear}$ (BOOKS))