Datenbanken II (SS 2019)

Exercise 4

Task 1 For which of the following use cases would you prefer a row or column store:

- Access of all attributes of few tuples
- Aggregation of a single column
- High compression rates
- Selection on one attribute and aggregation on another attribute
- Grouping over all attributes (Except: key attributes) of a single table

Provide arguments for your decision.

Task 2 Buffer management

(a) Why do database use an own buffer management?

(b) Describe the general process of the buffer management.
Consider possible alternatives.

(c) Given a database with a buffer size of 5 pages.
The pages a, b, c, d, e, f, g will be read in a transaction in the following sequence:
a, b, b, b, c, e, g, f, d, b, e, b, f, e, a, g, a, b, c, a, d, f, b, b, f, f, e, b, e, g
Compare for the given use case the page replacement strategies LRU and Clock.

Good Luck!