E/20/280 JAVA Lab03 Part C

d)

Ease of implementation,

- Part C: Uses an array to store student data. This method requires manual memory management and resizing if required.
- Part D: Uses ArrayList to store student data. This method do not require manual memory management, hence easy to use and easy to implement.
- Part E: Uses HashMap to store student data. Since this method keeps the values as Key, Value pairs, it is easy to access data belong to a student. Hence, easier to use.

Performance,

- Part C: Even using arrays is faster, if resizing is required, the performance will decrease.
- Part D: ArrayList offers better performance in terms of dynamic resizing. Hence could be faster in a bigger dataset.
- Part E: Since HashMaps keep Key, value pairs, using hash Maps is faster to access data and gives near-constant time complexity, independent from the data size.