**Report**

**Practical Assignment 2 (KAFKA)**

(Used operating system: Windows)

Correct implementations

**UC1**:

* Kafka cluster (3 brokers & 3 partitions);
* 1 to 3 Kafka producers;
* All modes required in the PProducer side:
  + Fire and forget;
  + Asynchronous;
  + Synchronous;
* Added some configurations options to producer process;
* GUI implementation:
  + PProducer:
    - Button to start;
    - Combo box to define sending mode;
    - Combo box to define the number of Producers;
    - Components to define the values of several Producers’ properties;
    - Display sent records;
    - Display total time to send all records;
  + PConsumer:
    - Display received records;

**UC2**:

* Kafka cluster (3 brokers & 1 partition);
* All modes required in the PProducer side:
  + Fire and forget;
  + Asynchronous;
  + Synchronous;
* GUI implementation:
  + PProducer:
    - Button to start;
    - Combo box to define sending mode;
    - Display sent records;
  + PConsumer:
    - Display received records and total number;

**UC3**:

* Kafka cluster (3 brokers & 3 partitions);
* 3 Kafka producers;
* 3 Kafka consumers;
* All modes required in the PProducer side:
  + Fire and forget;
  + Asynchronous;
  + Synchronous;
* Partitioner policies considered:
  + Range Assignor;
  + RoundRobin Assignor;
  + Sticky Assignor;
* GUI implementation:
  + PProducer:
    - Button to start;
    - Combo box to define sending mode;
    - Combo box to define the partitioner policy;
    - Display sent records by Producer;
  + PConsumer:
    - For each Kafka Consumer, display received records and total number;

**UC4**:

* Kafka cluster (3 brokers & 3 partitions);
* One consumer group with 1 to 3 Kafka consumers;
* GUI implementation:
  + PProducer:
    - Button to start;
    - Display records by producer and total number;
  + PConsumer:
    - Combo box to define the number of Consumers;
    - Commit mode considered:
      * Auto-commit;
      * Throttled;
      * Ignore;
      * Latest;
    - Use or not use of Group Rebalance;
    - For each Kafka consumer: display the received records and the total number;
    - For each Kafka consumer: button to kill a Consumer;
    - For each Kafka consumer: display total time to receive all records from the first one;

Incorrect implementations

-

Students contribution

1. João Bernardo Coelho Leite (nº 115041): 45%
2. Luís Miguel Gomes Batista (nº 115279): 55% \*

\* extra GUI implementations