Fall 2018 - Kristen Beaufait, Navjot Kamal, Yifan Guo, Tyler Comte, Terrence Bunkley **UML Version 1.4** Major Changes: - The passenger class has been removed as it was deemed unnecessary based on new clarification of passenger management - A Simulation class was added to hold system wide information such as constants and to store the various bus, stop, and route objects. - A time object was deemed uneccessary due to the fact that this is a discrete-event simulation. - Other minor changes such as changes in data structure/types or removing repetitive methods is captured in the updated diagram below as well. Queue - Two user interfaces have been added to change the bus UI and overall layout of the application. - The concept of rewind, efficiency, and bus change has been added for changes according to the UI. listEvents: ArrayList<Evnt> currentEventId: int simulation: Simulation addEventToPool(int eventIndex, int eventRank, String eventType, int objectId) chooseNextEvent() $update {\sf EventExecutionTimes} (int\ eventIndex,$ Contains int eventRank) 1 1 Creates Creates 0..* 0..3 **Event** Stores id: int -Contains execute_next()
execute_next()
passengerExchange(Bus bus, Stop stop)
evaluateChanges() rank: time 0..* type: string \triangleleft Stop busId: int name: string location: location numPassengersWaiting: int Stores 0..3 Rewinds Identifies 1 0..* 0..* Bus Route 1 Moves Travels Along routeld: int number: int name: string listStopIds: list<int> newRouteIndex: int numPassengersRiding: int getStopIdbyIndex(int stop_index): int addStopIdtoRoute(int new_stop_id) Store maxCapacity: int avgSpeed: double travelTimeNextStop: int Travels to distanceNextStop: double Location latitude: double ChangeType: enum type: ChangeType initialFuel: int longitude: double fuelCapacity: int getChangeType(): ChangeType getBus_id(): int 0..1 getNextStop(): int calculateDistance(): double calculateTravelTime(double distance): int getNewRouteId(): int etNewRouteIndex(): in _stop_img: JLabel _img: JLabel dd_busTextField(int bus_id, nain_simulation_frame: JFrame vorld_layout: JPanel vutton_layout: JPanel tatus_layout: JPanel onstantPanel: JPanel top_boxes: Map<Integer, StopBox> ystem_efficiency_text: JTextField imulation: Simulation tring s) odateBusInfo(int bus_id) Contains dd_bus_GUI(int bus_index)
dd_stop_GUI(int stop_index)
nove_bus()
nove_bus_rewind()
etupListenersForButtons()

Red text highlights added elements to meet new requirements

CS 6310 - Assignment #9 - Mass Transit Simulation System UML Class Diagram