IS446 – Systems Analysis and Design
Instructor: Kevin Trainor
Assignment: Conceptual Data Modeling and State-Machine Diagram Practice Assignment
Course Component: Skills Practice Assignments
Grading Rubric

Base Point Allocation

Base Points (23 available points)

Requirements
Assignment submitted on-time or within the allowable late period.

Percent Credit	Description
100	Meets all expectations.
0	Not submitted or submitted too late.

Submission

Timeliness (16 available points)

Requirements
Must be submitted by date and time indicated in the weekly schedule.

Percent Credit	Description
100	On Time
0	Late
0	Not submitted or submitted too late

Physical Submission (10 available points)

Requirements
One (and only one) submission should be made to the Moodle submission activity.
The file submitted must be of type .ZIP
The .ZIP file must be named according the conventions described in the instructions.
The .ZIP file must contain a directory that is named according the conventions described in the instructions.
The directory must contain two files named according to the conventions described in the instructions.
The files submitted must both be of type .PDF

Percent Credit	Description
100	Meets all expectations.
50	Meets nearly all expectations.
0	Does not meet expectations.
0	Not submitted or submitted too late.

Entity-Relationship Diagram

Completeness (15 available content points)

Requirements
Diagram should include entity types to support all use cases included in the scope.
Diagram should include relationship types to support all use cases included in the scope.
Diagram should include attributes to support all use cases included in the scope.
Each entity type should have one or more attributes designated as the identifier.

Percent Credit	Description
100	Meets all expectations.
90	Meets nearly all expectations.
75	Meets most expectations.
50	Meets some expectations.
25	Meets few expectations.
10	Meets nearly no expectations.
0	Meets no expectations.
0	Not submitted or submitted too late.

Technique (15 available content points)

Requirements
Entity types must be represented as rectangles.
Entity types must have singular names that are nouns or noun phrases.
Attributes must be represented as text entries within the rectangles.
Identifiers must be distinguished from other attributes (with PK or other notation).
Relationships should have names that are verbs or verb phrases. Relationships surrounding associative entities need not be named.
Cardinality should be indicated at both ends of the relationship line using crow's foot notation.
Cardinality values should be appropriate to implement the scope.
Relationships that hold data must be represented with an associative entity that includes the attributes needed to hold the data.
An attribute should appear on only one entity type (Conceptual data models should not carry redundant data).
Attributes should be located on the one entity type on which they depend.

Percent Credit	Description
100	Meets all expectations.
90	Meets nearly all expectations.
75	Meets most expectations.
50	Meets some expectations.
25	Meets few expectations.
10	Meets nearly no expectations.
0	Meets no expectations.
0	Not submitted or submitted too late.

State-Machine Diagram

Completeness (11 available content points)

Requirements
The diagram should explain all of the expected states of an important entity in the data model.
If the assignment specifies a specific entity, than this specific entity must be the subject of the diagram.
The states considered should not be limited to only one entity type in the data model. Often, one application entity is represented by more than one entity type. For instance, the state of an order might be reflected in the various states of the entity types Order, PaymentEvent, PickEvent, ShipEvent, and DeliveryEvent.

Percent Credit	Description
100	Meets all expectations.
90	Meets nearly all expectations.
75	Meets most expectations.
50	Meets some expectations.
25	Meets few expectations.
10	Meets nearly no expectations.
0	Meets no expectations.
0	Not submitted or submitted too late.

Technique (10 available content points)

Requirements
The diagram should track the state of only one application entity. Sometimes this is challenging because more than one entity type is being used to track the state of a single entity. Nevertheless, this diagram is not intended to track the states of all entities in the data model. So, while it might consider the states of Order, PaymentEvent, PickEvent, and ShipEvent, it should not also track the states of other distinct application entities like Customer or Item.
The boxes on the diagram must represents states of the entity. They cannot represent actions.
The lines on the diagram should be labeled with a description of the activity that triggers the change in state. Not all activities need to be represented in the diagram. Only the last (triggering) activity needs to be documented here.
If choice symbols are used on the diagram, two or more lines must flow out of the choice symbol that are labeled with [guard conditions].
Lines that flow from a terminal state box to the termination (stop) symbol should not be labeled with a description of some trigger. Triggers introduce new states. Each state box that flows directly to the termination (stop) symbol is a terminal state. No subsequent state is possible.
No state boxes may appear on the diagram that are not connected by some flow to the initial (start) symbol and the terminal (stop) symbol.
States that cannot be reached from the start of the diagram are not permitted.
States from which the end of the diagram cannot be reached are not permitted.

Percent Credit	Description
100	Meets all expectations.
90	Meets nearly all expectations.
75	Meets most expectations.
50	Meets some expectations.
25	Meets few expectations.
10	Meets nearly no expectations.
0	Meets no expectations.
0	Not submitted or submitted too late.

Total Available Points = 100

Please Note: This grading rubric allows for adjustments to be made to your content point score. The total number of content points available to be awarded on this assignment is 51. An adjustment of up to 36 content points may be made for submissions that have a low content point score and yet meet the following criteria: Assignment must be submitted on time. Work submitted must show good faith effort on ALL parts of the assignment.