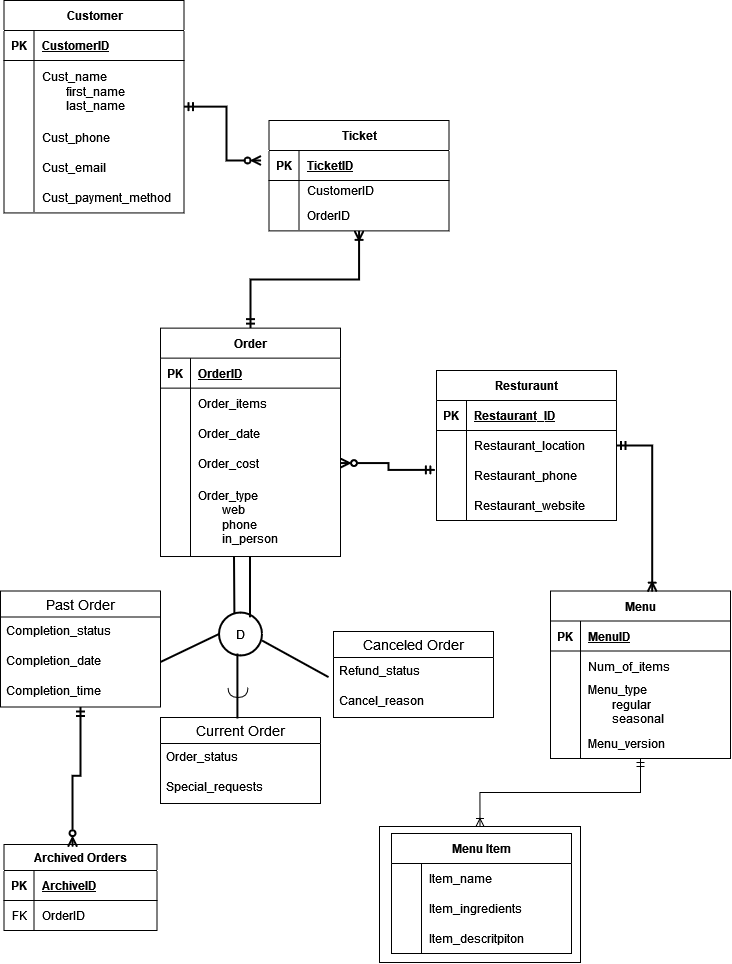
**IS410 | Group 7 | Deliverable 2 | UMBC - Fall 2024**

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**ERD**



**Entities**

Possible Entities: Customer Accounts, Inventory

| **Entities** | **Strong** | **Weak** | **Transactional** | **Supertype** | **Subtype** |
| --- | --- | --- | --- | --- | --- |
| **Customer** | X |  |  |  |  |
| **Order** | X |  | X | X |  |
| **Ticket** |  | X |  |  |  |
| **Restaurant** | X |  |  |  |  |
| **Archive** | X |  |  |  |  |
| **Menu** | X |  |  |  |  |
| **Menu Items** |  | X |  |  |  |
| **Past Order** |  |  |  |  | X |
| **Current Order** |  |  |  |  | X |
| **Canceled Order** |  |  |  |  | X |

Strong Entities

* Customer
* Restaurant
* Menu
* Archive

Weak Entities

* Menu Items (Strong Entity - Restaurant)
* Ticket (Associative Entity)

Transactional Entities

* Order(order number, menu items)- (Classification - can be a past order(archive ID), current order(archive ID, order status), or a canceled order(archive ID, refund number)

Supertypes

* Order

Subtypes

Order Subtypes

* Past Orders
* Current Orders
* Canceled Orders

**Relationships**

| **Customer** | **Definition of Relationship** |
| --- | --- |
| Customer\_ID  Cust\_name  Cust\_phone  Cust\_email  Cust\_payment\_method | **Primary Key**  Composite  Single  Single  Single |

| **Restaurant** | **Definition of Relationship** |
| --- | --- |
| Restaurant\_ID  Restaurant\_location  Restaurant\_phone  Restaurant\_website | **Primary Key**  Composite  Single  Single |

| **Menu Items** | **Definition of Relationship** |
| --- | --- |
| Item\_Name  Item\_Descritpiton  Item\_Ingredients | Single  Composite  Multi-Valued |

| **Menu** | **Definition of Relationship** |
| --- | --- |
| Menu\_ID  Number\_of\_items  Menu\_type  Menu\_Version | **Primary Key**  Single  Multi-Valued  Single |

| **Archive** | **Definition of Relationship** |
| --- | --- |
| Archive\_ID  Order\_ID | **Primary Key**  **Foreign Key** |

| **Order** | **Definition of Relationship** |
| --- | --- |
| Order\_ID  Order\_Items  Order\_date  Order\_cost  Order\_type | **Primary Key**  Multi-Valued  Single  Single  Multi-Valued |

| **Past Order** | **Definition of Relationship** |
| --- | --- |
| Completion\_status  Completion\_date  Completion\_time | Single  Single  Single |

| **Current Order** | **Definition of Relationship** |
| --- | --- |
| Order\_status  Special\_request | Single  Composite |

| **Canceled Order** | **Definition of Relationship** |
| --- | --- |
| Refund\_status  Cancel\_reason | Single  Multi-value |

| **Ticket** | **Definition of Relationship** |
| --- | --- |
| Ticket\_ID  Customer\_ID  Order\_ID | **Primary Key**  **Foreign Key**  **Foreign Key** |

**Attributes**

Customer:

* Cust\_ID: Customer ID; key identifier (primary key); required; simple; single-valued.
* Cust\_name: Customer name; key identifier; required; composite; single-valued.
* Cust\_phone: Customer phone number; required; simple; single-valued.
* Cust\_email: Customer email address: optional; simple; single-valued.
* Cust\_payment\_method: Customer payment method; required; simple; single-valued.

Restaurant:

* Restuarant\_ID: Restaurant ID; key identifier (primary key); required; simple; single-valued.
* Restaurant\_location: Restaurant location; required; composite; single-valued; state and city can be derived from zip.
* Restaurant\_phone: Restaurant phone number; required; simple; single-valued.
* Restaurant\_website: Restaurant website; required; simple; single-valued.

Menu Items:

* Item\_name: Item name; required; simple; single-valued.
* Item\_description: Item description; optional; composite; single-valued.
* Item\_ingredients: Item ingredients; optional; simple; multi-valued

Menu:

* Menu\_ID: Menu ID; key identifier (primary key); required; simple; single-valued.
* Number\_of\_items: Number of items; required; simple; single-valued.
* Menu\_type: Menu type; required; simple; multi-valued.
* Menu\_version: Menu version; required; simple; single-valued.

Archive:

* Archive\_ID: Archive ID; key identifier (primary key).
* Order\_ID: Order ID: key identifier (foreign key).

Order:

* Order\_ID: Order ID; key identifier (primary key); required; simple; single-valued.
* Order\_items: Order items; required; simple; multi-valued.
* Order\_date: Order date; required; simple; single-valued.
* Order\_cost: Order cost; required; simple; single-valued.
* Order\_type: Order type; required; simple; multi-valued.

Past Order:

* Completion\_status: Completion status; required; simple; single-valued.
* Completion\_date: Completion date; required; simple; single-valued.
* Completion\_time: Completion time; required; simple; single-valued.

Current Order:

* Order\_status: Order status; required; simple; single-valued.
* Special\_request: Special request; optional; composite; single-valued.

Canceled Order:

* Refund\_status: Refund status; required; simple; single-valued.
* Cancel\_reason: Cancel reason; required; simple; multi-valued.

Ticket:

* Ticket\_ID: Ticket ID; key identifier (primary key); required; simple; single-valued.
* Customer\_ID: Customer ID; key identifier (foreign key).
* Order\_ID: Order ID; key identifier (foreign key).