

CIS 321 PROJECT MILESTONE (2): ER Diagram

Project Group Number (in Blackboard): G2.

Section Number: Group (5)

Project Title: Code 4 Food

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Date of Submission:

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Logo:



❖ Introduction:

Our Code4Food project is a database for an online ordering restaurant system, in which the customer can choose from the menu and place the order then picks it up from the restaurant and pay for it. On the other hand the staff members receive the orders and prepare them for the customers.

❖ System Requirements & Relationship between entities:

The data base will store:

1. each **STAFF**'s ID, Name(The Name is a Composite Attribute and can be subdivided into First Name and Last Name), Role and Salary.
2. each **CUSTOMER**'s ID, Name and Phone Number. (The Name is a Composite Attribute and can be subdivided into First Name and Last Name.)
3. each **MENU**'s Type and Time. (The Time attribute is multivalued)
4. each **ORDER**'s ID, Date and Price.
5. each **BILL**'s ID, Amount, Payment Date, and Total Price. (The BILL entity type is weak the existence of BILL depends on the existence of ORDER.)
6. each **MEAL**'s ID, Price, Type and name.

The relationships:

- The **CUSTOMER** *can choose from* **MENU**.

The participation constraint of CUSTOMER in MENU is total because each CUSTOMER must choose a meal from the MENU. However the participation constraint of MENU in CUSTOMER is partial.

- The **CUSTOMER** *places* **ORDER**.

The participation constraint of CUSTOMER in ORDER is partial because some CUSTOMERs might be registered in the system but have never placed an ORDER. On the other hand the participation constraint of ORDER in CUSTOMER is total all ORDERs must have been placed by a CUSTOMER.

- The **STAFF** *serves* **CUSTOMER**.

The participation constraint of STAFF in CUSTOMER is partial because not all STAFF members must serve a CUSTOMER. However the participation constraint of CUSTOMER in STAFF is total because all CUSTOMERs need to be served by a STAFF member.

- The **STAFF** *supervision of* **STAFF**.

The participation constraint of STAFF in STAFF is partial because not all STAFF members are supervisors.

- The **CUSTOMER** *pays* for a **BILL**.

The participation constraint of CUSTOMER in BILL is total because all CUSTOMERs must pay for their BILL.

- The **ORDER** *consist of* **MEAL**.

The participation constraint of ORDER in MEAL is total because all ORDERs must have MEALs. However The participation constraint of MEAL in ORDER is partial because not all MEALs must be an element of an ORDER.

- The **STAFF** *takes* **ORDER**.

The participation constraint of STAFF in ORDER is partial because not all STAFF members have to take ORDERs. However the participation constraint of ORDER in STAFF is total because all ORDERs must be taken by a STAFF member.

- The **ORDER** *has a* **BILL**.

The participation constraint of ORDER in BILL is total because all orders must have a BILL, and vise versa.

- The **MENU** *consists of* **MEAL**.

The participation constraint of MENU in MEAL is total as well as the participation constraint of MEAL in MENU because each MENU must be consisted of MEALs.

❖ ER Diagram:

