

Coding Problem

Your solution will be evaluated based on: object oriented design and principles, code structure, readability, maintainability, and testability

Build a **console application** that takes in a time of day and the types of dishes we want to eat, returning the foods to make. Rules:

1. You must enter time of day as "morning" or "night"
2. You must enter a comma delimited list of dish types with at least one selection
3. The output must print food in the following order: entrée, side, drink, desert
4. There is no desert for morning meals
5. Input is not case sensitive
6. If invalid selection is encountered, display valid selections up to the error, then print error
7. In the morning, you can order multiple cups of coffee
8. At night, you can have multiple orders of potatoes
9. Except for the above rules, you can only order 1 of each dish type

Dishes for Each time of day

Dish Type	morning	night
1 (entrée)	eggs	steak
2 (side)	Toast	potato
3 (drink)	coffee	wine
4 (desert)	<i>Not Applicable</i>	cake

Sample Input and Output:

Input: morning, 1, 2, 3

Output: eggs, toast, coffee

Input: morning, 2, 1, 3

Output: eggs, toast, coffee

Input: morning, 1, 2, 3, 4

Output: eggs, toast, coffee, error

Input: morning 1, 2, 3, 3, 3

Output: eggs, toast, coffee(x3)

Input: night, 1, 2, 3, 4

Output: steak, potato, wine, cake

Input: night, 1, 2, 2, 4

Output steak, potato(x2), cake

Input: night, 1, 2, 3, 5

Output: steak, potato, wine, error

Input: night, 1, 1, 2, 3, 5

Output: steak, error

Database Problem

Given the following database structure:

Entity
EntityId
EntityName
...

Balances
EntityId
BalanceDate
Balance

Status
EntityId
StatusDate
Status

- 1) Write a query that returns a list of all balances for entity named "ABCD" and, for each date shown, if available, the status on that date [defined as the "most recent up to but not exceeding the balance date"].

Example: Given data below:

EntityID	BalanceDate	Balance
1	5/1/2010	100.00
1	4/1/2010	50.00
1	3/1/2010	75.00
1	2/1/2010	85.00
2	5/1/2010	110.00

EntityID	StatusDate	Status
1	5/29/2010	A
1	4/16/2010	B
1	4/2/2010	C
1	2/26/2010	D
2	5/1/2010	B

EntityID	EntityName
1	ABCD
2	XYZ

the following output would be expected:

EntityName	Date	Balance	Status
XYZ	5/1/2010	110.00	B
ABCD	5/1/2010	100.00	B
ABCD	4/1/2010	50.00	D
ABCD	3/1/2010	75.00	D
ABCD	2/1/2010	85.00	<null>

- 2) Write a query that returns average balance and most recent status for every entity

Example: given the data example in step 1, the following output would be expected:

EntityName	Status	As Of	Avg Balance
XYZ	B	5/1/2010	110.00
ABCD	A	5/29/2010	77.50