# Restaurant Recommendation Engine

Assume that you are building a recommendation engine for your food delivery app and product team gives you the spec with following requirements.

Your algorithm considers following criterias

1. *Cuisine of the restaurant* : North Indian, Chinese, South Indian etc
2. *Cost bracket*: 1,2,3,4,5 (Increasing order from cheap to costly)
3. *Featured restaurants*: Restaurants which are officially tested by our app and recommended.
4. *New restaurants*: Restaurants which are onboarded in the last 48hrs.
5. *Rating*: Average user rating for the restaurant (from 0.0 - 5.0)

For every user that orders from the app we track following parameters:

1. Cuisine of the restaurant
2. Cost bracket

Top most cuisine will be considered as a primary cuisine of the user and next 2 are considered as secondary. Similarly, the top most cost bracket will be considered as a primary cost bracket of the user and the next 2 are considered as secondary.

We want to sort all the restaurants available in the vicinity and show top 100 unique restaurants with the following logic:

| Order | Condition |
| --- | --- |
| 1 | Featured restaurants of primary cuisine and primary cost bracket. If none, then all featured restaurants of *primary cuisine, secondary cost* and *secondary cuisine, primary cost* |
| 2 | All restaurants of Primary cuisine, primary cost bracket with rating >= 4 |
| 3 | All restaurants of Primary cuisine, secondary cost bracket with rating >= 4.5 |
| 4 | All restaurants of secondary cuisine, primary cost bracket with rating >= 4.5 |
| 5 | Top 4 newly created restaurants by rating |
| 6 | All restaurants of Primary cuisine, primary cost bracket with rating < 4 |
| 7 | All restaurants of Primary cuisine, secondary cost bracket with rating < 4.5 |
| 8 | All restaurants of secondary cuisine, primary cost bracket with rating < 4.5 |
| 9 | All restaurants of any cuisine, any cost bracket |

Given the below classes. Implement the *getRestaurantRecommendation* function in any language of your choice:

Enum Cuisine {

**SouthIndian, NorthIndian, Chinese etc.**

}

Class Restaurant {

private string restaurantId

private Cuisine cuisine

private int costBracket

private float rating

private boolean isRecommended

private Date onboardedTime

}

Class CuisineTracking {

Private string type

Private string noOfOrders

}

Class CuisineTracking {

Private string type

Private string noOfOrders

}

Class CostTracking {

Private string type

Private string noOfOrders

}

Class User {

private CuisineTracking[] cuisines

private CostTracking[] costBracket

}

public string[] getRestaurantRecommendations(User user, Restaurant[] availableRestaurants){

*// Takes user and restaurant while returning back array of restaurant Ids in the right sorting order*

}

# Evaluation Criteria

* Your solution will not only be evaluated on the correctness of your code but also the readability, maintainability and extensibility of your code.
* The code needs to be production quality.
* You can select any language of your choice to write code.
* You can generate the code in any tool of your choice and share the git link for the same.