**Data Warehousing**
Practical Task # 02 **MDBS**

# Task 2B

1. Consider the following requirements for an airline tickets booking system. The system is composed of many airlines. Each airline is identified by a code, name and headquarters' address. An airline has different mile programs, identified by a type- code, description, and starting date. The different types of flights offered by an airline have a unique number, day of the week, departure time, arrival time, origin, destination, and stops (if applicable).

   Passengers are allocated into flights and are identified by a number, name, address, sex and age. A passenger can subscribe for one mile program of a certain airline. The system records information about the passenger's booked in a flight, together with the date, seat, pilot-name, and crewmembers of that flight. The system also maintains information about the miles accumulated by each passenger in a certain flight. This information is kept as a mile-order identified by a number, quantity and date.

   The booking can be done through a travel agency, identified by a code, name, address, contact person, and phone number. For each passenger in a flight a menu is served. The different menu options have a code and a respective description. The menu can be of type vegetarian, low fat, and kosher. For each vegetarian and low-fat menu, information about the

protein level and Kcal, respectively, of the meal is recorded. Each kosher meal has to be approved by the kosher community.

Draw a Multidimensional ER diagram for the above scenario and mention the fact node and level nodes necessary to calculate for the analysis of the company.

**2.** Let consider the computational center of a research or business establishment that maintains records over its operations. These computational centers are across the globe in regions of America, Asia, Australia and Europe so that customers can provision resources exactly where and when they need them. Instead of a centralized data warehouse, the management prefers a horizontal partitioning of the database (according to some metric, e.g. Geographic), so that on-line queries on the multiple dimensions can be performed.

Design a distributed data warehouse for this scenario.