## Chapter 2.2 Disk

The usage of Auxiliary Storage is the main feature of Database Management System, and Auxiliary Storage is based on disk.

### Chapter 2.2.1 Disk Structure

***Concept:***

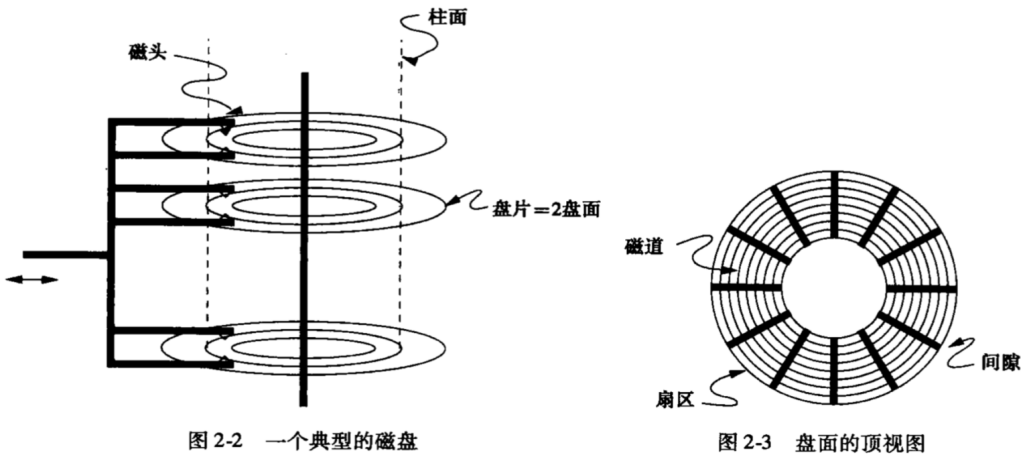
There are two main moving units in one *Disk Controller*, one is Disk Assembly while the other is Head Assembly.

1. *Disk Assembly* consists of one or multi - platter, and they rotate around one *Central Principal Axis*.

* There has one level *Magnetic Material* on the upper and lower surfaces of disk, binary bytes are stored in these surfaces. Also 0 and 1 may have different model in Magnetic Material.
* The disk is organized in *Track*, and Track is the *Concentric Circles* in one single disk. The Track with the same radius consists *Cylinder*.
* The *Track* is organized as Sector. The Sector are the Segmentation that divided by gap, the gap has not been magnetic as 0 or 1. *(When read and write into the disk, the sector can not be divided. )*
* The *Block* is the logic unit that can be used to transfer between the disk and main memory, and the block consists of one or multi - sectors.

1. *Head Assembly* is the second movable unit, it includes *Magnetic Head*.

* Each disk has one Magnetic Head, it is close to the disk, but never contacts with the disk. When Magnetic Head read the contents of disk, it can also change the disk direction in order to write information on the disk.
* Each Magnetic Head is fixed on one *Disk Arm*, and the Magnetic Head of all disk moves in and out together, the Disk Arm is the part of fixed Head Assembly.



### Chapter 2.2.2 Disk Controller

### Chapter 2.2.3 Disk Access Feature