1-requirements modeling: *structured analysis,* considers data and the processes that transform the data as separate entities

Data objects are modeled

Processes that manipulate data objects

2-analysis modeled: o*bject-oriented analysis,* focuses on:

the definition of classes, the manner in which they collaborate with one another to effect customer requirements.

Class-based modeling represents:

Objects : the system will manipulate

Operations : (also called methods or services) that will be applied to the objects to effect the manipulation

Relationships : (some hierarchical) between the objects

Collaborations : that occur between the classes that are defined.

Identifying Analysis Classes:

Classes are determined by underlining each noun or noun phrase and entering it into a simple table.

Synonyms should be noted.

***Analysis classes* manifest themselves in one of the following ways:**

External entities, Things, Occurrences or events, Roles, Organizational units, Place.

Potential Classes:

Retained information, Needed services, Multiple attributes, Common

attributes, Common operations,Essential requirements.

***Attributes* describe a class that has been selected for inclusion in the analysis model.**

build two different classes for professional baseball players

For Playing Statistics software(name), For Pension Fund software(average salary)

Operations can be divided into four broad categories:

(1) operations that manipulate data in some way (e.g., adding, deleting)

(2) operations that perform a computation.

(3) operations that inquire about the state of an object.

(4) operations that monitor an object for the occurrence of a controlling event.

A CRC model is really a collection of standard index cards that represent classes.

The cards are divided into three sections Along the top , the body, the left.

Class Types

Entity classes, Boundary classes, Controller classes

Responsibilities

should be distributed across classes, should be stated as generally as possible

, should reside within the same class, should be localized with a single class, should be shared among related classes

Collaborations

Classes fulfill their responsibilities in one of two ways: ▪

A class can use its own operations to manipulate its own attributes, a class can collaborate with other classes

identify relationships between class ▪

identified by determining whether a class can fulfill each responsibility itself

three different generic relationships between classes [WIR90]: ■

the *is-part-of* relationship ■

the *has-knowledge-of* relationship ■

the *depends-upon* relationship ■

Two analysis classes are often related to one another *associations, multiplicity Y*