Topic 07: Software System Engineering: A Hierarchical Design Model

(After selecting an Architectural Design Model in Chapter # 9)

9 Characteristics of any System

[Diagram showing the characteristics of a system: Environment, Input, Components, Boundary, Goal, Interfaces, Interrelationship, Output, Constraints (Limits)]
System Engineering: A Hierarchical Design Model

System Level
(World View)

Level of Subsystems (Domains)
(Subsystem or Domain View)

Level of Elements or Components
(Element or Component View)

Level of Sub-elements, Details (for ex., attributes)
(Detail View)

Bradley U. Software Systems: A Hierarchical Design Model

SW Systems at Bradley University (System Level)
- System # 1: MyBU portal
- System # 2: Webster
- System # N: Bradley Online Library

2. Subsystems for selected System (Level of SW Subsystems for Webster):
- subsystem # 1
- subsystem # 2
- … subsystem # M

3. Level of Components or Elements
- element # 1
- element # 2
- … element # K

4. Level of Details or Attributes
- detail # 1
- detail # 2
- detail # 3
SW System Hierarchical Design Model (examples)

- **Systems**: Online library, Webster, MyBU, ...
- **Sub-systems**: DBs, GUI, HELP, ...
- **Components**: tables, relations, forms, reports, queries, ....
- **Details (attributes)**: First_Name, Last_Name, Date_of_Birth, Year_of_Admission, Major, ....

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**In-classroom Exercise**