Week 1 – Intro to IS

- Purpose of a business
  - Production of products & services
  - Division of labor, dealing with complexity
  - Collaboration of individuals to achieve a greater goal
  - Governance and control
  - Efficient allocation of resources(input/output)
  - Effectiveness (do the right things – value/quality)
  - Efficiency (do the things right- cost)
  - Make a profit
  - Manufacturing: OEMs, suppliers(component), raw materials
  - Service: professional services, travel ,tech, education
- How is a business organized?

  i) Functional organization (distributions of tasks) " more service firms"
  a. Horizontal : functional – different functions involved in value creation -functional specialization(silos)
  b. Vertical hierarchical – different people involved in decision making(positions, roles),
  - Chain of command

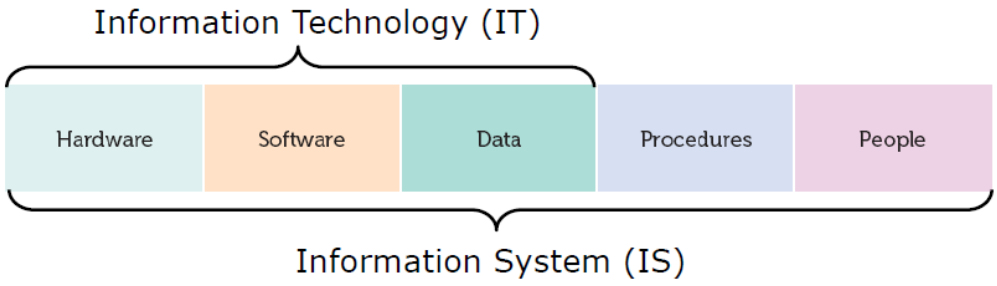
  ii) Process organization "more manufacturing firms"

  - organize materials/ value flow through the organization

  - fulfil orders, get things done (operations)

- Business operate in a market
- Information system (IS = IT + procedure+ people)

Info Technology = raw technology



Info Technology = raw technology

Example – computers – recording - flights – followed by - customers

- Routines programs – customers – personnel = travel agents

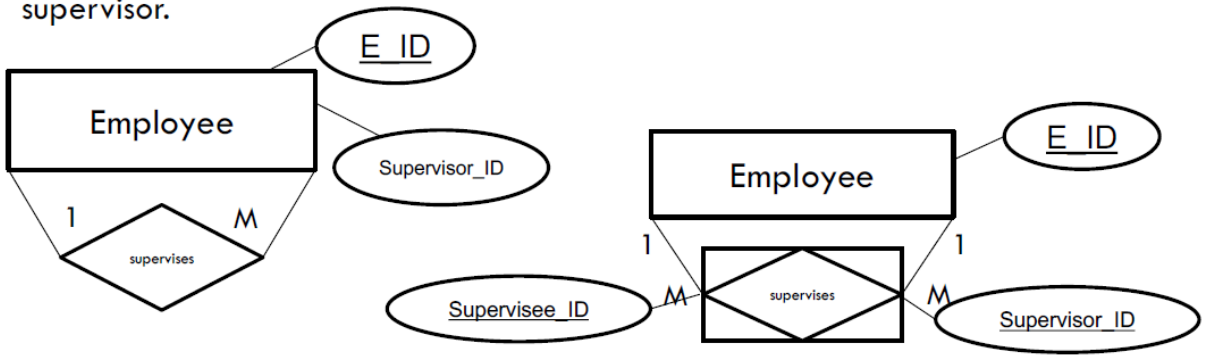
Week 5 – ERD

- Steps in creating an ERD
  1) Identifying entities (business objects)
  2) Identify business rules (non-verb-noun)
  3) Define relationships & represent cardinality (1:M or M:M)
  4) Identify attributes (characteristics, PKs, FKs composite keys)
- Unary relationships: relationships between 2 instance in an entity

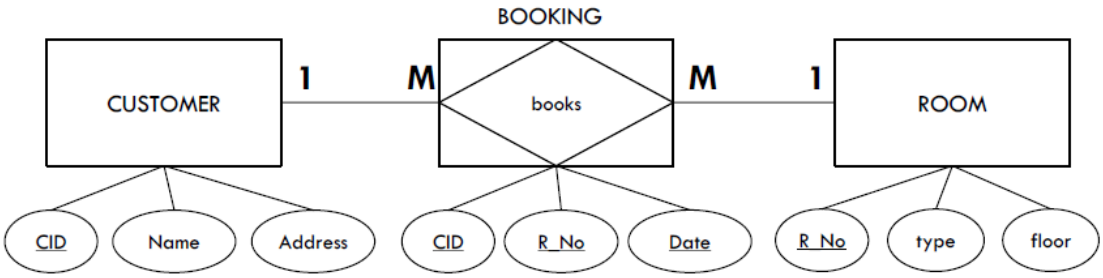
  Unary relationship: relationship between two different instances of an entity.

  For example, when one employee supervises other employees.

  In a unary relationship, a link is created between the employee and his/her supervisor.



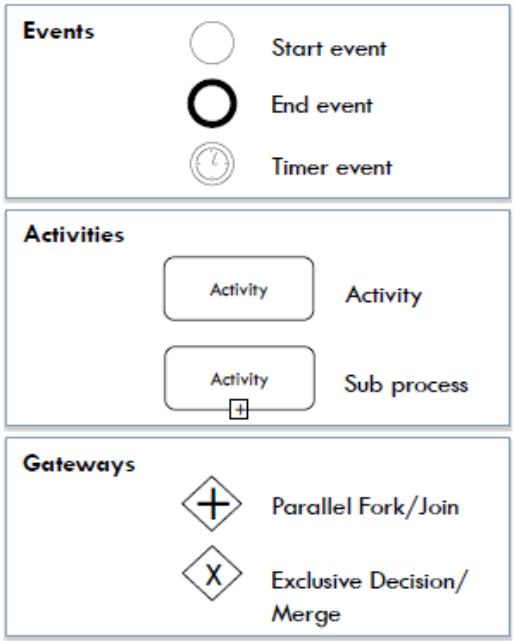
- There are 3 types of irrelevant nouns:
  1) One instance
  2) Computable (e.g. revenue)
  3) Attributes
- ERD extensions
  1) Transitions – extend composite PKs

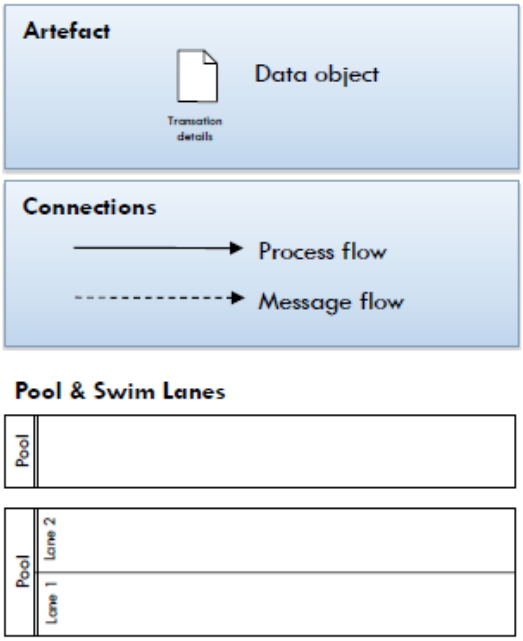


  2) Unary relationships
  3) Classifying relationships – when group of entities within a table have common attribute, such as single, double, twin or executive suite – important for determine room rates)

Week 7 – Business Process Management (BPM)

- BPM : systematic process of creating, assessing & improving BPs
  - BPM applies to all organization (incl. NGOs and govt agencies)
  - Involves 4 stages
- **4 stages of BPM :**
  1. Create a model of the current BP
  2. Create system components(5 elements of IS)
  3. Implement new BP(train ppl, implement IS,Δ s)
  4. Create policy & procedures to assess effectiveness on an ongoing basis.
- **BPM varies in scope**
  1. Functional processes
     - Activities in a single department/function
     - BPM easier at this level
     - Problem : may lead to “isolated silos”
  2. Cross- functional processes
     - Activities across/ among many business departments
     - Eliminate or reduce isolated systems& data
  3. Inter- organizational processes
     - Activities that cross organizational boundaries(supply chain management)
     - More difficult than 1 & 2
     - Requires negotiation, contracts, litigation to resolve conflicts between organization





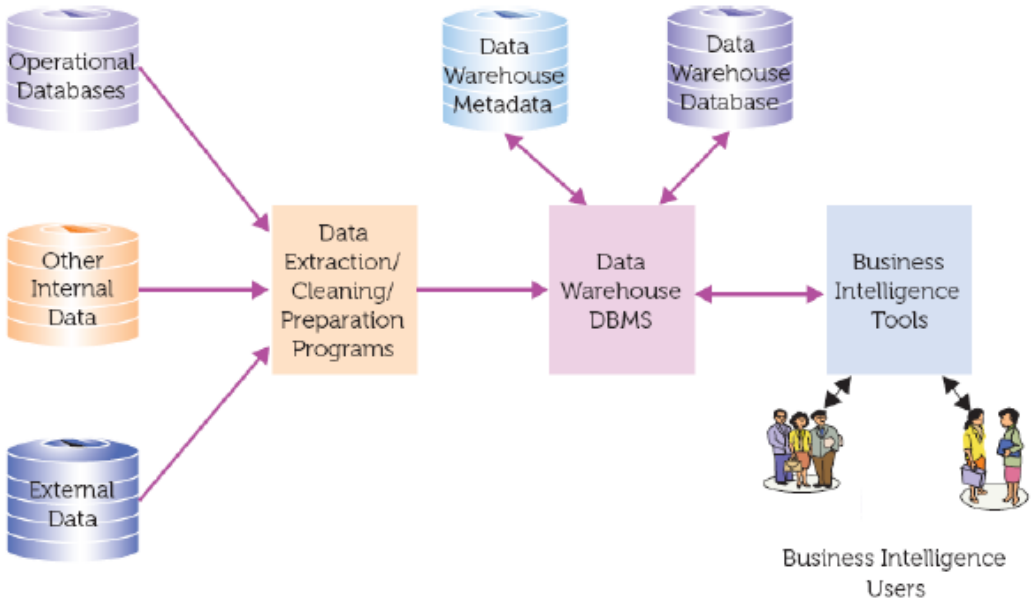
- What role do IS play in BPs?
  - Support a single activity to entire processes
  - Automate

- Provide data

- BPMN:
  1. Simple layout
  2. Swimlane layout
  3. DB interaction layout

Data Warehouse (DW)

- Purposes of a DW
  - to store and catalog data for BI processing
  - required extract clean data from various DBs
  - to improve the quality of data transferring to DW
- How does DW work?
  - Regularly copies data from operational DBs to create a massive stack of historical data.
  - Collates data from external sources
  - Creates metadata for these large pools of data.



1. Operational database
   - Used by various IS across the organization on a daily basis
2. Data warehouse
   - Large storage container, which collects regularly data from operational databases – needs data cleansing
   - Contains historical data which doesn't change
   - Used for BI
   - DWs are optimized for running large scale analysis, doing analysis on DBs might slow them down.