System Development Methods

CT00046-3-2

System Analysis – Part 2

Topic & Structure of the Lesson

- System Analysis
- Data Analysis
- System Specification

Learning Outcome

- At the end of the module, you should able to:
  - Explain the tools and techniques used for data analysis and discuss the various requirements in system specification.

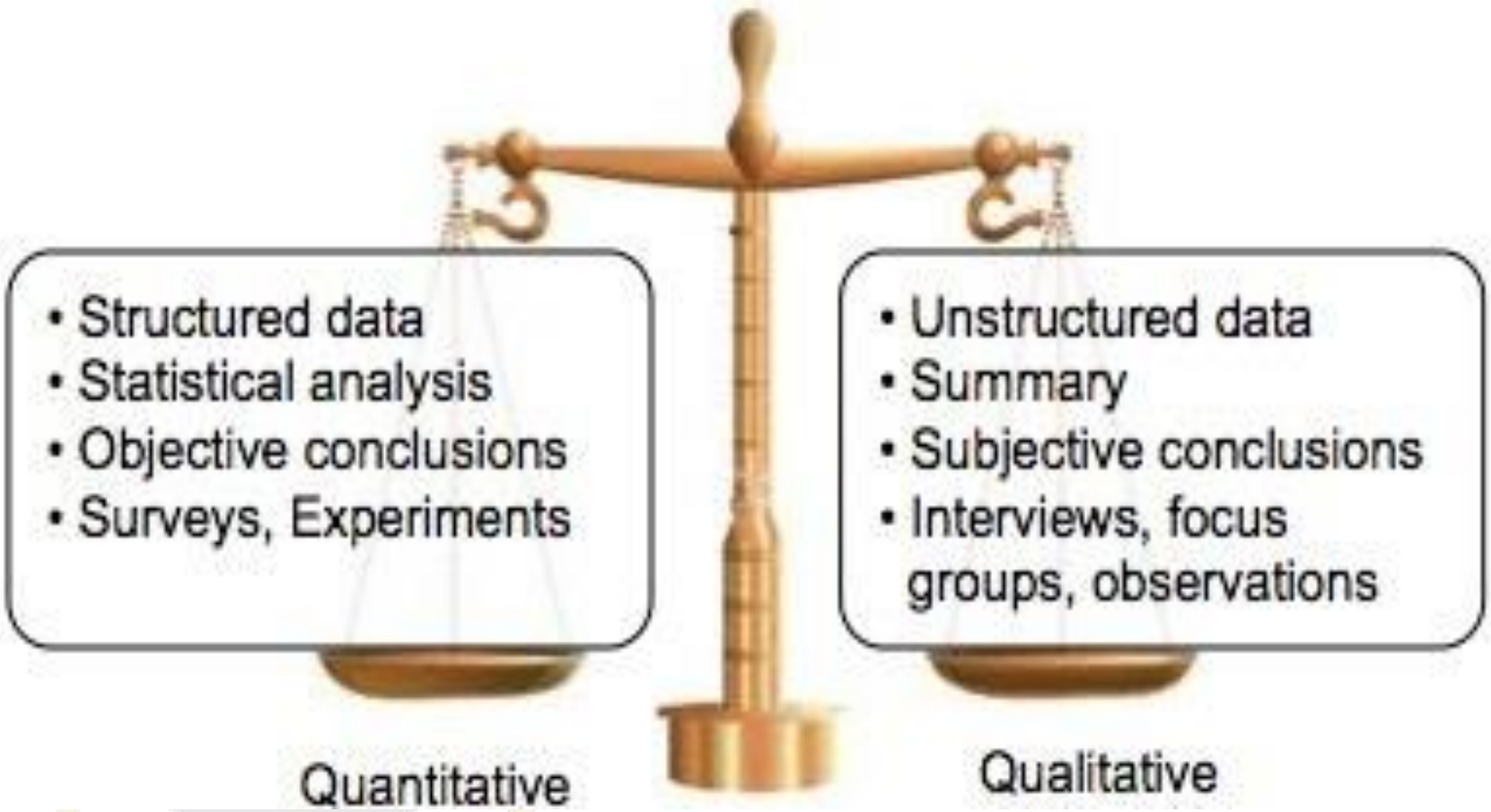
Learning Outcome

- At the end of the module, you should able to:
  - Analyze and design different views of a system using tools and techniques.

Key Terms you must be able to use

- If you have mastered this topic, you should be able to use the following terms correctly in your assignments and exams:
  - Systems Analysis Techniques
  - Analysis Tools
  - Analysis Outcomes
  - System Specifications and Requirement.

Quantitative vs Qualitative Research and Analysis



Popular System Analysis Techniques … cont

Project Analysis

- Analysis of factors influencing project
- Used by Project Managers to plan large / multiple projects
- Tools enable to analyze and determine most efficient use of resources
  - Ex; Resource Analysis
  - Financial Analysis
  - RISK Analysis, etc.

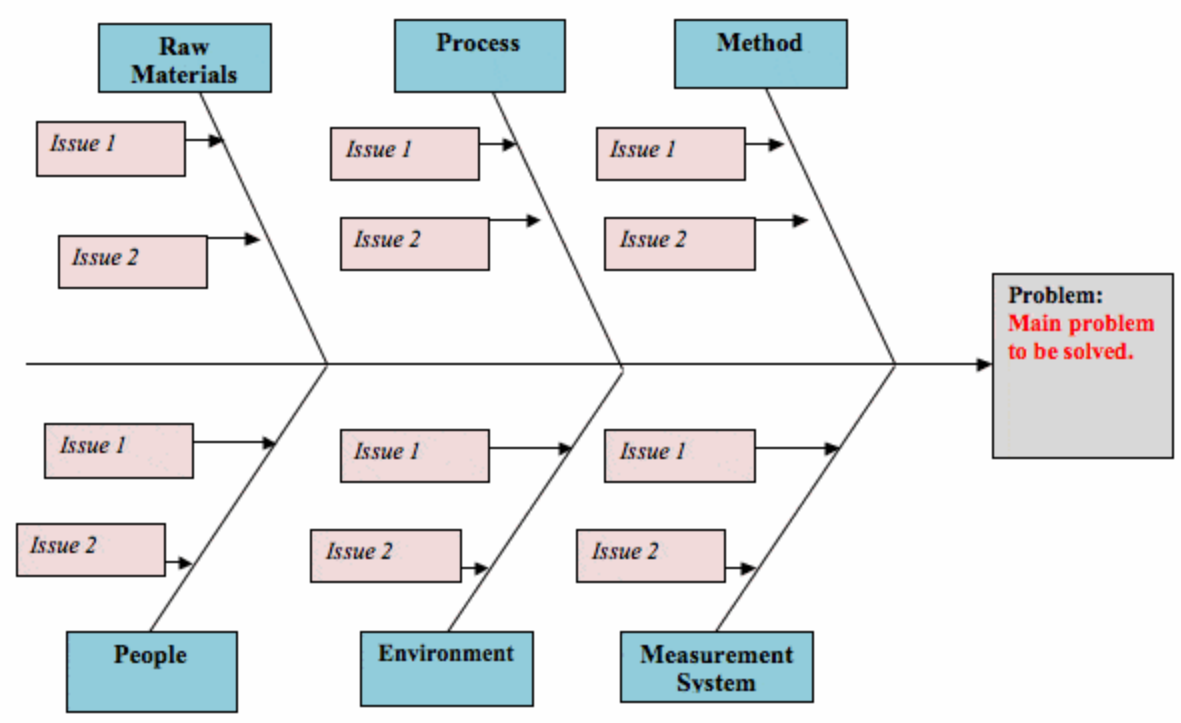
System Analysis Techniques

Business Intelligence Analysis

- Business intelligence - data analysis that relies heavily on aggregation, focusing on business information.
  - Using business analysis techniques to find benefits of data to ones business.
- Approach;
  - Seeking product / service opportunities - Ex; SWOT, Fishbone analysis, etc
  - Analysis of external influences towards the company's business – Ex; PEST analysis.
- Output;
  - Clearer information for business decisions.

SWOT ANALYSIS

Fishbone analysis



PEST Analysis

System Analysis Techniques .. cont

Data Mining and Analysis

- Digging through large amount of data to find relevant / logical information / relationships. (aka; Data Analytics)
- Popular Data Mining techniques;
  - Correlation, aggregation, regression, etc
- Focuses on modeling and knowledge discovery for "**predictive analysis**"
  - Ex; Study of online customer's shopping preferences at Amazon.com
  - Ex; A study of user's 'emotions' at Facebook.com
- Output of data mining
  - Quantitative and Qualitative presented in tabular or visual form.

Popular System Analysis Techniques … cont

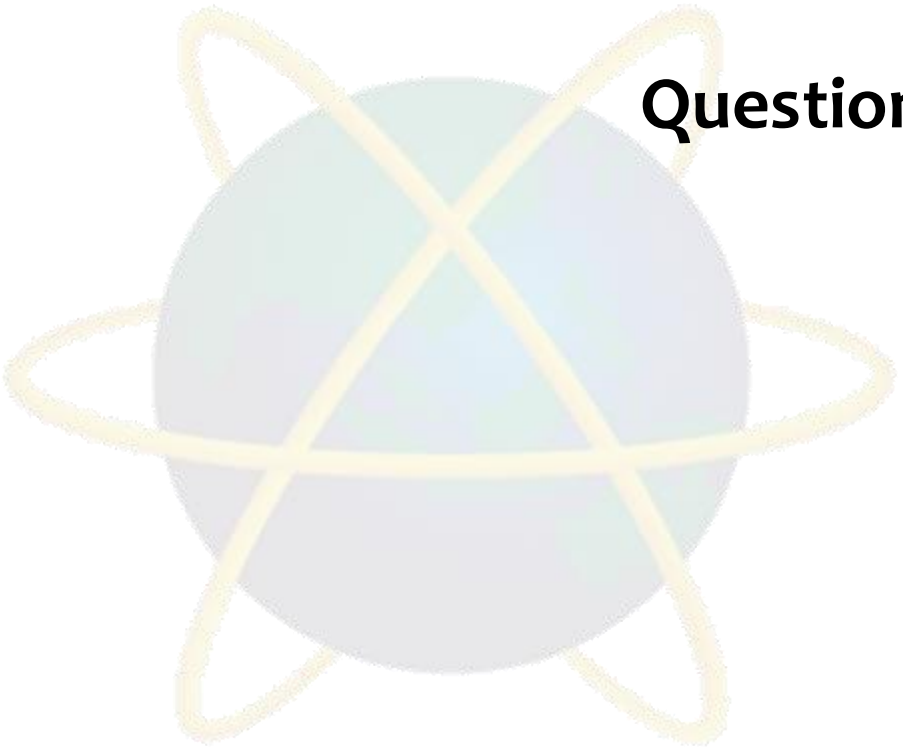
Statistical Analysis

- Using numeric data to find / predict data relationships.
- Popular Statistical Analysis techniques;
  - Mean, Median, Mode, SD, etc
  - Correlation, Nominal Comparison, etc.
- Focuses on calculating statistics of events;
  - Ex; Study of stock market, sales, weather based on previous record.
  - Ex; Reaction of various drugs on cancer patients.
- Output
  - Quantitative data used for prediction / forecasting and conformation of facts.

Analysis Tools

- Tools used to collect, store, inspecting, cleansing, transforming, modeling and present data in a useful manner
- Advantages
  - Fast and accurate
  - Present data in various form better understanding.
  - Help to create better product / service for users
- Disadvantages
  - Analysis techniques are many and often confusing
  - Need specific format of data for input
  - Some tools are expensive

Popular System Analysis Tools



Question & Answer

Next Session

- System Design

Tutorial

1. Discuss the advantages and disadvantages of the following data analysis methods;
   - Data Mining
   - Statistical Analysis
2. Complete the below table with detailed explanation of latest tools.

Analysis Techniques	Popular Tools	Features of Tools	Advantages of tools	Disadvantages of tools
Statistical Analysis				
Data Mining	Ex; Weka, ….	Weka can do …..	Advantages of Weka ….	
Project Analysis				
Business Analysis				