Midterm review
ADM1370
Week 1

Topics:

- High-level overview of information systems
- Why study information systems?
- Types of information systems

High level overview of information systemsWhat is an information system?

- Purpose: to provide accurate, timely ad useful information
- Consists of 5 parts
    1. People
    2. Procedures
    3. Software
    4. Hardwear
    5. Data

Information system(IS) = IT plus the 5 parts

Can buy IT not IS

IT: buy or lease hardwear, license programs and databases, even predesigned procedures… people execute those procedures.

New system requires training taskas, overcoming employees resistance to change ect…

Information system aid decision making process

- Improve productivity
- Monitor organizational performance
- Planning and decision making
- Enhanced competitive plan advantage

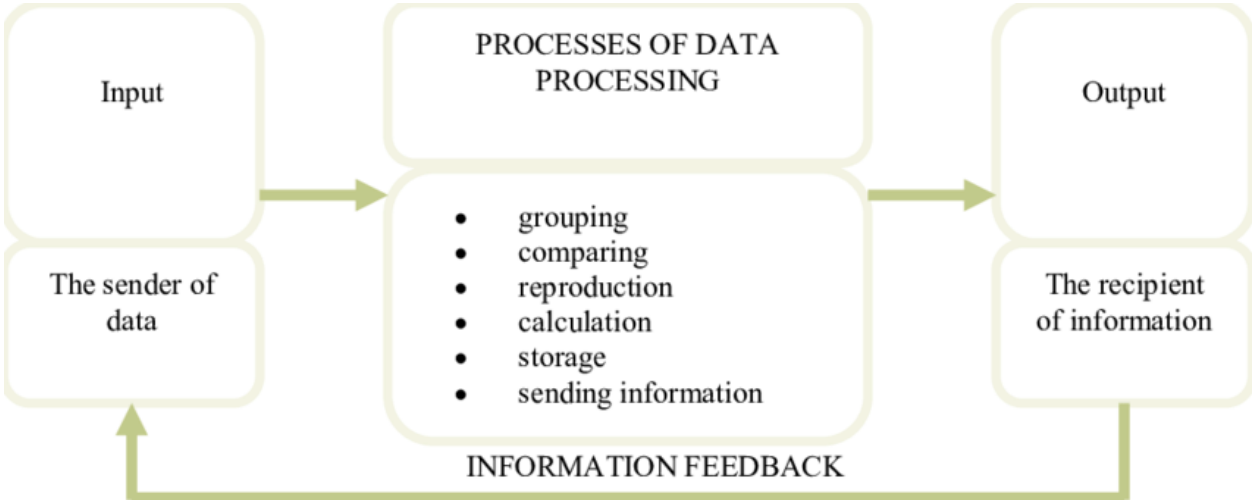
Information system:

- Set of interrelated components
- Collect, process, store and distribute information

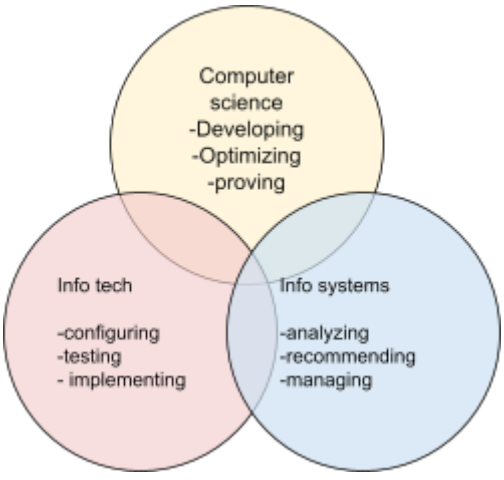
3 core activities:

1. Input: captures raw data from organization or external environment
2. Processing: converts raw data into meaningful form
3. Output: Transfers processed information to people or activities that use it

Advanced information system also incorporates one additional functionality:
Feedback



Benefits of IS education for management students:

- Is needs to work effectively and reliably
- IS managers DO NOT only work with the IT dept:
    - Marketing, operations, HR, finance, accounting ect.
- IS MAnager plays in important role in the implementation and administration of tech within the divisions and for the benefit of your organization
    - Plan, coordinate, direct research on computer related activities of firms
    - Consult with other managers, determine goals, implement tech to meet goals
    - Coordinate with ppl aby the tech aspects such as software, development, network security, internet operations
    - 

Information systems > Technology

IT -Savvy & digital Fluency are important Skills and mindset
IS course map well to various learning goals in a business education

LG2:

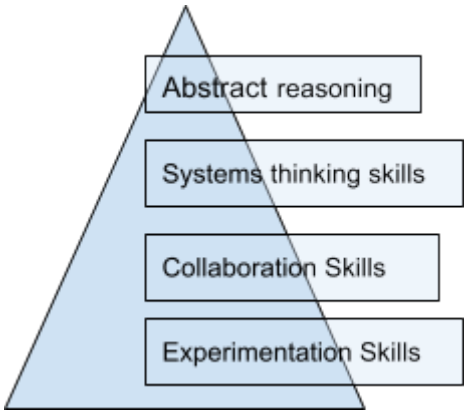
Demonstrate critical thinking and decision making

LG7:

Provide value to the business community in a chosen area of specialization

Based on Robert Reich (former US security of labour)

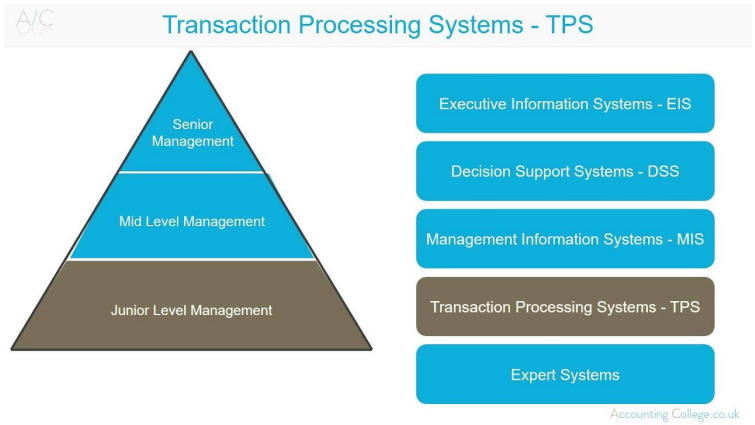
The skills required for most future job roles

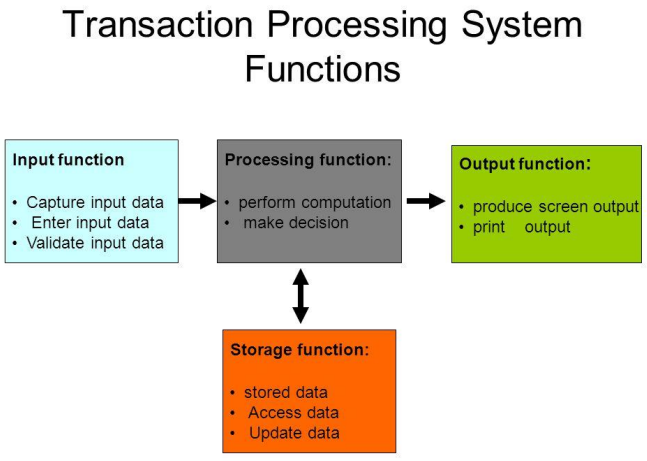


WEEK 2: Information systems in the organization

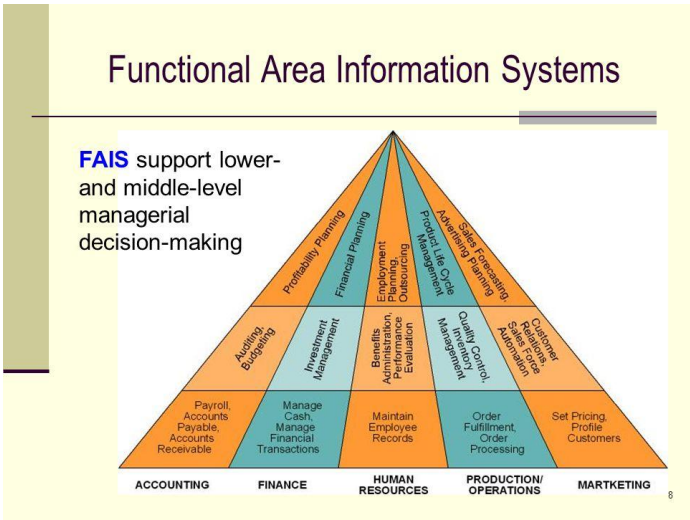
Topics:

- Enterprise Resource Planning ERP Systems
- Transactional Processing Systems TPS



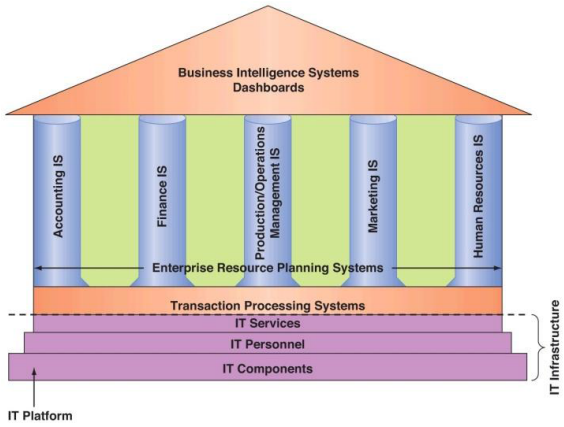


TPS : Transaction Processing system



FAIS

Informations systems in the Organization:



Intra-organizational and inter-organizational information systems:

Social Media and Business strategy:

SM platforms and applications have changed how we communicate, socialize, access and use information and shop.

But… these tools are the means to doing things and the ends

As business managers we need to know how to leverage their potential to achieve strategic advantages

Social media:

Web 2.0

Term first used 2004

Software as a continually updated device service that gets better as more people use it

USER GENERATED CONTENT UGC

- 2005
- Media content publicly avai;able

Characteristics of Web 2.0

- Tap into collective intelligence of users
- Data is made available in new or never intended ways
- Relies on user generated/ controlled content and data
- Anyone acts as a website developer
- Virtual elimination software-upgrade cycles makes everything a perpetual beta or work-in-progress

Social Media Trends:

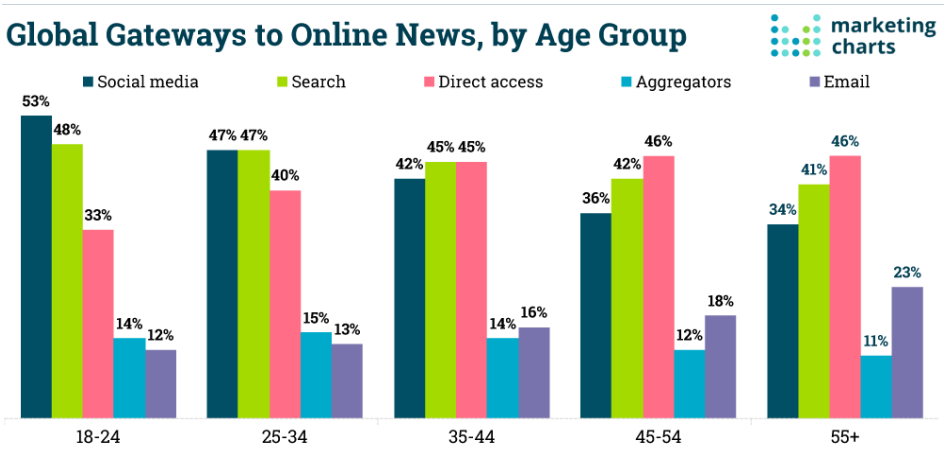
- READING week 2
- SM has led oy the convergence of information and communication
    - More channels for communication and consumption
    - Lines between personal, media consumption become blurry
    - SM being used for many purposes, more than intended

Highlights:

- Aged 18-24 are the largest adopter of SM excluding facebook-linkedin
- Gender Variations
    - Women: ig, FB, Pinterest, Snap, Tiktok
    - Men: youtube, linkedin, reddit, tumbler

Social Media News:

Globally 50-60% of the pop. gets some “news” through social media
Youth more likely



Trend; Many news stories breaking out on twitter before mainstream news sources

Social media Implications for business:

- Reach out and engage with customers, prospects, partners, network
- Create opportunity by sharing info
- Manage reputation and discover new business through monitoring info
- Max the potential of social media by using it across business function
- Outside-in conversations
- Insight for product research, competitive analysis, consumer needs
- Update carrot governance policies and guidelines.

The honeycombs of Social media

Facebook, IG Youtube all adopted

WEEK 3: Social Computing in Business

Topics:

- Integrated Social Media Strategy components
- Social media metrics
- Social media Strategy key Success factors
- Social media and Big data

Integrating Social Media Strategy ISM

Social media strategies;

- Formulated with terms of objectives, tactica and metrics
- Corporate governance issues such as policies and guidelines

PDCA Framework:

- PLAN
  - Creating a strategy
- DO
  - Implementing tactics and campaigns aligned with the social media strategy
- CHECK
  - Regular (daily, weekly, monthly, quarterly ect.) review metric
  - Determine the business ROI in social media has been sufficiently achieved or not
- ACT
  - Fine-tuning the strategy, tactics plans ect…
  - Refining metrics

This is a never ending cycle as the changing nature of social media sites and services, and how we use them.

Social media Strategy Components

OBJECTIVE

- Link to corporate strategy
- Ways to extend brands strengths online
  - Increase sales, decrease expenses, improve ROI
  - Engagement influence, advocacy

CUSTOMERS

- Target demo group
- Assess type of users

SHARING

- What tools with be uses
- Type of content

WHO

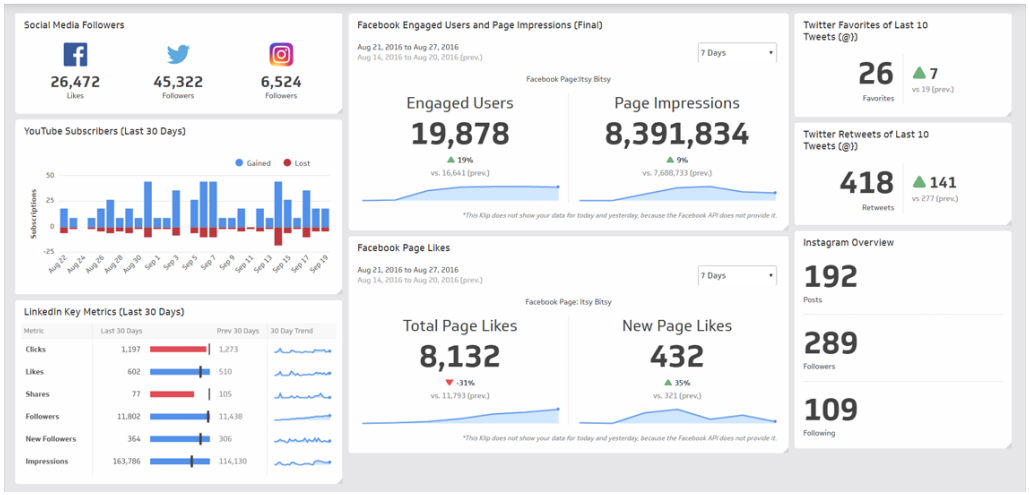
- Who will lead the effort

BRAND ALIGNMENT

- Guidelines, tone of voice, media usage

MONITOR

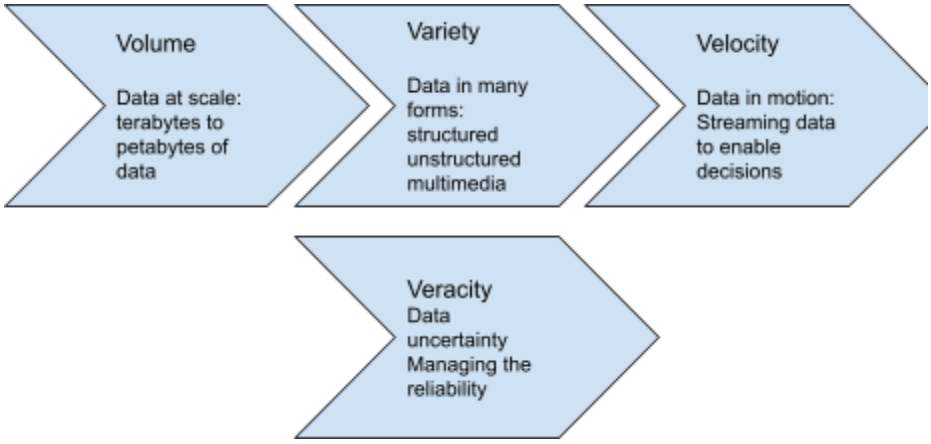
- Listening to customers, activities, measuring success



Structured vs unstructured Data:

- Structured data refers to info with a high degree of organization, such that inclusion in a relational database is seamless and readily searchable by a simple, straightforward search engine.
- Unstructured data essentially the opposite
- The lack of structure makes compilation and analysis

The 4 v's



Social network Analysis SNA:

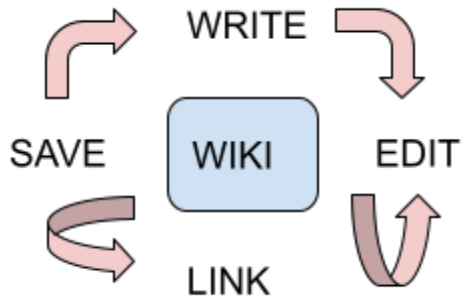
- The mapping and measuring of relationship and flows between people groups organizations, computers
- The network are the people and groups, whereas the links show relationships or flows between
- SNA provides both visual and mathematical analyses of relationship

Web 2.0 WIKIS

- Wiki meas “fast” in the Hawaiian language
- Shares and edit body of knowledge
- Ongoing process of creation and collaboration
- Knowledge Management - Wikipedia, enterprise

A dynamic, collectively authored set of web pages

- Web-based
- Interactive
- Collaborative
- Iterative



RSS Rich Site Summary (Really Simple Syndication)

- A standardized data first to publish frequently updated world such as blog entries and news headlines
- Website material is made available to end-users or other sites through web feeds
    - A web feed
    - Updated content

RSS Web Feeds are usually accessed through an aggregator tool

- Collection of web feeds accessible in one spot is known as aggregation which is performed by
- Aggregators can be scheduled to check for new content periodically

Widgets

Mini web applications
Third-party cite
Examples: weather info, calculator, currency converter

WEEK 4: Web 2.0 Applications

Topic:
Recap

Mashup & API's

- Terminology
- Examples and exercises

Web 2.0 service	Related legacy service	Revolutionary?
Blogs	Bulletin board systems (BBS) and threaded news groups	Not particularly; however, greater ownership and easier use are possible.
Image sharing (such as Flickr)	Image sharing Web sites	No, but many more images are available now and it's arguably easier to search for them.
Wikis	Personal Web sites	Somewhat. Wikis may be useful in work groups and other moderated environments.
Really simple syndication (RSS)	None	Yes, due to RSS' ability to deliver granular news on demand.
Social networks	Personal Web sites	Not particularly. Admittedly, contemporary social networks are more user friendly.
Mash-ups	None	Yes, because of their ability to combine content to form new content.
Podcasts and vodcasts	File servers with Web-exposed content	Somewhat, because of their ability to subscribe to chosen granular content.
Folksonomies	Legacy search engines (such as Webcrawler)	Yes, because of the power to find new information based on other users' searches.

The word "MASHUP" originated in the music industry where a mashup was a combination of two or more songs ro create a new experience:

- Typically the vocal track of the one song was combined with the instrumental background.
- The tech industry extended this definition to encompass a new class of applications that described the combined of two or more sources into an integrated application

What are mashups;

- Applications generated by combining content, presentation or application functionally from disparate sources
- Composite web applications
- Emphasis on GUI programming-less specifications
- Finding data, functionality and services and using them to both solve problems and create opportunities

Mashups have been regarded as a disruptive technology:

- Major force in the next years
- The end-user environment, business users with little technical ability will be able to create their own mashups and assemble them in dashboards.
- Immediate benefit at little cost
- Mashup encourage re-uses of data and services

Mashups are about:

- Simplicity, usability, and ease of access

Content used in mashups is typically sourced from a third party via a public interface or API (Application programming Interface):

- Defines and describes an interface for interaction with a set of functions used by components of a software system.
- Process of taking away or hiding or removing characteristics

Mashups are sometimes referred to as Web API's (Application programming Interface)

- What is API
    - A set of functions used by components of a software system.
        - Process of taking away or hiding or removing characteristics from an object in order to reduce it to a set of essential characteristics
        - For the consumer or user, abstraction helps focus on the essential elements with unwanted detail omitted.

Example of an API

- Google maps
    - What inputs to a google map for located a particular geographic
- How to access (call) an API
    - Using a URL with all the necessary info
    - Ex: https://maps.googleapis.com/maps/api/staticmap?

Relationship between Mashups & API's

Mashups

Composite applications

API's

Mechanism to get applications to talk to each other, send messages back and forth
Request (call)- & response (results)

Social Media Publishing Workflow using:

- Trigger
    - Search for new Tweets with Hashtag #coolbeans
- Actions

- Add tweets to a google sheet

Week 5: Microsoft Excel & Spreadsheet Applications

- Excel user Interface Basics
- Data Management Fundamentals
- Intro to computation in Excel

Microsoft Office Excel:

- Computer program used to enter analyze and present quantitative data
- A spreadsheet program

A spreadsheet is a collection of text and number laid out in a rectangular grid

- Used in business for accounting, budgeting, financial analysis

An electronic spreadsheet program such as excel aids a multitude of problem-solving & decision-making processes through providing.

- Data management features
- Automatic calculation
- Presentation tools
- Decision making

Excel

- A computerized spreadsheet used to build an manipulate worksheets and workbooks

Worksheet

- Spreadsheet data, text, numbers, formulas charts

- Charts based worksheet is referred to as a “chart sheet”

Workbook:
- A collection of related worksheets within one file

Basic Components of the Excel Interface

Excel format: Range of cells:

COLUMN ROW : COLUMN ROW

File Tab:
- Consists of file operations commands such as opening, closing, saving, printing, and sharing files.
- The options and features available here are part of the “Backstage view

Tabs and ribbons
- Corresponds to sets of features display horizontally as a ribbon
- A ribbon consists of groupings and control
- Task-oriented and consist

Quick Access
- controls/commands
- Office button

Select All Button
- Used to select all elements of the worksheet

Status Bar
- Displays info about selected command
- Also displays basic summary information

Plan before you enter data:
1. Purpose of a spreadsheet
2. Make obvious where data needs to be entered
3. Setup formulas and use cell references for calculations
4. Test multiples times
5. Format worksheet so it looks aesthetically pleasing
6. Document thoroughly
7. Save work regularly

Rows and columns:

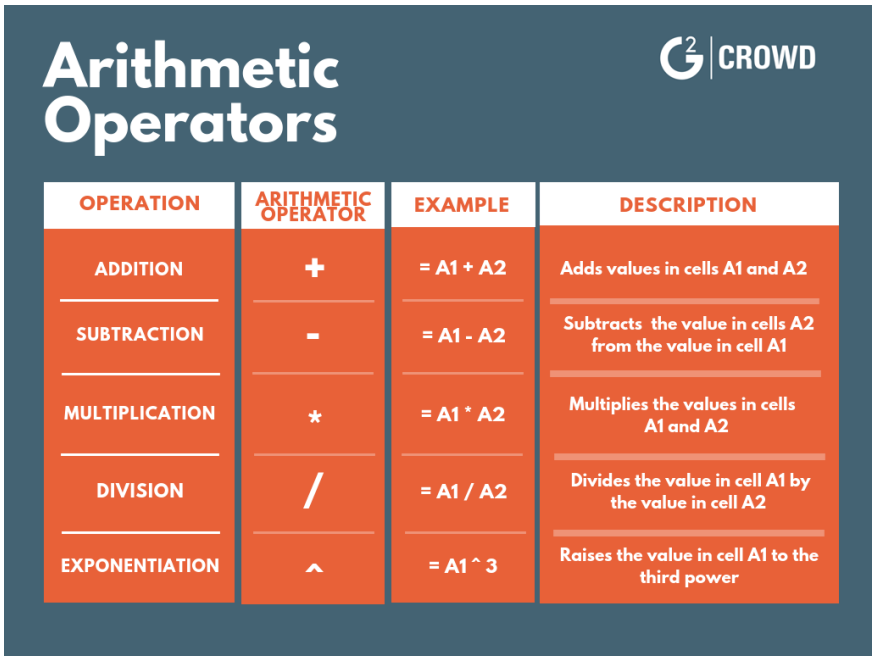
1m rows and 16k columns

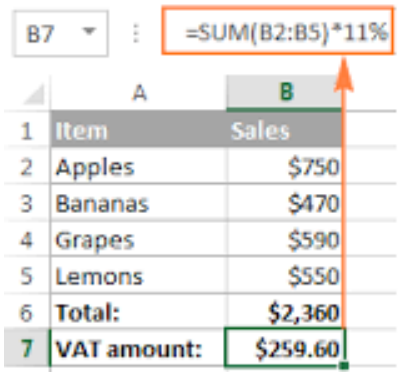
Auto-fill features:

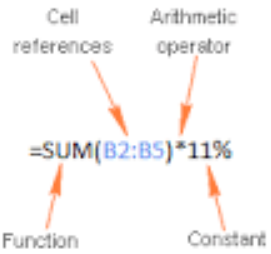
- Used to repetitively copy contents of one cell or a range of cells
- Complete a sequence, patterns, lists
- Select range of cells to be copied or continued

Using formulas:

- Must begin with =
- Contain mathematical operators
- Automate calculations that were once done manually







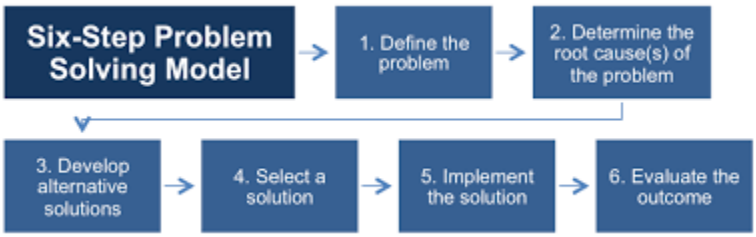
Functions are predefined formulas

- Begin with an = sign
- Functions name
- No space
- Open parenthesis

- Parameter1, Parameter2,
- Close parenthesis
    - =SUM(A2,A5)

Week 6:

problem-Solving & Modeling process



Models are usually simplified version of the things they represent:

Types of models

- ❏ Mental
- ❏ Visual
- ❏ physical/Scale
- ❏ Mathematical

A computer model:

- A set of mathematical relationships and logical assumptions implemented in a computer as an abstract representation of a real-word object or phenomenon.

Benefits of the modeling approach

- Economy
    - Often less costly to analyze
- Timeless
    - Delivers info quickly, simply, effectively
- Feasibility
    - Models can be used to do things that would be impossible

Example of a MAthematical Model:

- ❏ Profit = revenue - expenses
- ❏ Profit = f (revenue - expenses)

Generically

- ❏ Y = f(X1, X2, X3…..)
- ❏ Y = dependent variable
- ❏ Xi = independent variables… the impacts have an effect on Y

Decisions: refers to possible choices, or courses of action, that we might
Take.

Decision variables: parts of the model that we can change or we have control over.ga.

Production QuantityOutcomes: refers to the consequences of the decisions the performance measures we use to evaluate the results of taking action.e.g. Revenue or Profit

Structure: refers to the logic and the mathematics that link the elements of the model together. e.g. the equation P = R - C, in which profit is calculated as the difference between revenue and cost.

Data:refers to specific numerical assumptions and values of data used to test the model

Best Practices for Creating Spreadsheet Models:

- **Planning:**
    - Starts at the Requirements gathering phase.
    - Spend more time initially to avoid rework in later stages.

- **Prototyping:**
    - Gradually build and regularly test models.
    - Start simple and then address complex requirements.

- **Debugging:**
    - Identify and fix errors on an ongoing basis during model development.

- **Reviewing:**
    - Get someone else to review your models

Heuristics:
Heuristic methods are used to speed up the process of finding a good enough solution, where an exhaustive search or advanced problem-solving techniques are impractical.

- a "rule of thumb“
- an educated guess
- an intuitive judgment
- or common sense.

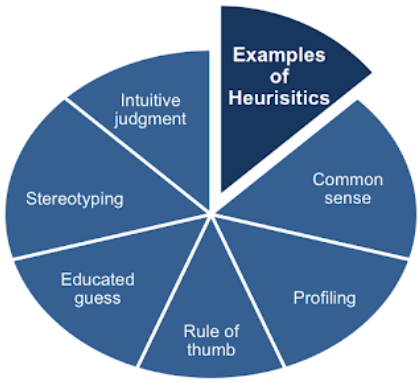
*****The most fundamental heuristic is trial and error.*****

Other examples of heuristics:

- Maximax method
- Maximin method

- Averaging method
- Expected Monetary Value (EMV)

Data Molding Example: decision Heuristics:



WEEK 7:

Excel as a Front-End tool for business Intelligence

Strategic Dashboards:

- provide quick overview that decision makers need for monitoring the health and opportunities of the business
- typically derived from static snapshots of data, and focus on high-level measures of performance:
    - comparisons with targets or levels
    - performance indicated categorically or on scales (good/bad ; high/medium/low)

Analytical Dashboards:

- support more sophisticated data analysis by facilitating rich comparisons, and fine grained performance evaluation (drill-down ;slice-and-dice)
- used to not only see what is going on, but to examine the causes

Operational Dashboards:

- for monitoring operations in real-time
- uses simple display media to quickly identify and understand events and to ensure timely response