Journal 13

- What is a flowchart and how do you use one?
- What classes have you seen flowcharts used in?
A flowchart is a picture of the separate steps of a process in sequential order.
Elements that may be included are:

- sequence of actions,
- materials or services entering or leaving the process (inputs and outputs),
- decisions that must be made,
- people who become involved,
- time involved at each step and/or process measurements.
Process definition

- The process described can be anything: a manufacturing process, an administrative or service process, a project plan.
  - This is a generic tool that can be adapted for a wide variety of purposes.
When to use a flow chart

- To develop understanding of how a process is done.
- To study a process for improvement.
- To communicate to others how a process is done.
- When better communication is needed between people involved with the same process.
- To document a process.
- When planning a project.
Flowchart Basic Procedure

- Materials needed: sticky notes or cards, a large piece of flipchart paper or newsprint, marking pens.
Steps involved in a flowchart

1. Define the process to be diagrammed. Write its title at the top of the work surface.
2. Discuss and decide on the boundaries of your process:
   - Where or when does the process start?
   - Where or when does it end?
   - Discuss and decide on the level of detail to be included in the diagram.
3. Brainstorm the activities that take place. Write each on a card or sticky note. Sequence is not important at this point, although thinking in sequence may help people remember all the steps.

4. Arrange the activities in proper sequence.
5. When all activities are included and everyone agrees that the sequence is correct, draw arrows to show the flow of the process.

6. Review the flowchart with others involved in the process (workers, supervisors, suppliers, customers) to see if they agree that the process is drawn accurately.
Symbols in a flowchart

- **Box:** one step in the process
- The step is written inside of the box
- Usually, only one arrow goes out of the box
- Arrow will leave from the side or the bottom

Step involved in the process with one arrow leaving the box
The arrow: Gives the direction of flow from one step or decision to another
An arrow can leave a decision and then split into two
A decision can have multiple arrows leaving
A “box” for a step will only have one arrow leaving
The diamond: decision based on a question. The question is written in the diamond.

More than one arrow goes out of the diamond, each one showing the direction the process takes for a given answer to the question (usually a yes or no)
The delay or wait symbol is used to indicate that you cannot move on in the flowchart until a task has been completed or until more information is known.
Circle – used to indicate that the flow chart is continued on another page
Also used to indicate that there is an additional flowchart that relates to the current flowchart
- Parallelogram: used as an indicator for input or output.
- Input – person needs to do an action here
- Output – end result from an action
- – printing a label for shipping an item would be an output result
Box with curved bottom – used to indicate a reference to a document that is needed for the project
  ◦ May be legal information, background information, permits needed, etc
Rounded square or oval: used interchangeably as starting or ending points to the flowchart.
Reading a flowchart

- See tax–return flowchart (word document)
- Identify all of the symbols on the chart
  - Choose a path and follow it’s choices for you – explain why that is your path
- See medigap health care flowchart
- Identify all of the symbols on the chart
  - Choose a direction to take on the flowchart and explain why you are making the decisions along the way to end up at the outcome for your path
There are additional symbols that can be used

Powerpoint and word have the options in symbols to create a flow chart

- They contain the additional symbols that you can use
- Technology – merge – extract, etc
Don’t worry too much about drawing the flowchart the “right way.”

The right way is the way that helps those involved understand the process.
Identify and involve in the flowcharting process all key people involved with the process.

This includes those who do the work in the process: suppliers, customers and supervisors.

- Involve them in the actual flowcharting sessions by interviewing them before the sessions and/or by showing them the developing flowchart between work sessions and obtaining their feedback.
Do not assign a “technical expert” to draw the flowchart.
  ◦ People who actually perform the process should do it.

Computer software is available for drawing flowcharts.
  ◦ Software is useful for drawing a neat final diagram, but the method given here works better for the messy initial stages of creating the flowchart.
We are going to create a flowchart for placing an order on Amazon
List the decisions that need to be made
Order of events
Brainstorming for Amazon order

Do you want to buy? 
add to cart
quantity
check out
cancel

guest/member
continue shopping

Shipping - billing address
 Gift card - discount - pay
billing information & shipping costs
track order
order confirmation

Customer Review of items
Brainstorming continued
Order – flowchart creation
Buying a car flowchart

- Brainstorm for purchasing a car
- What steps are involved to make a decision for your car and to purchase the car?
- Brainstorm and create a flowchart
Brainstorming continued

- Brand of car
- Color
- Miles if used (new)
- Miles per gallon (interior)
- Maintenance issues
- Size
- Cost of car
- Safety
- Find car/compare prices
- Accessories
- $ down
- Finance/cash
- Test drive
- Purchase
- Lease
- Insurance
Brainstorming

What purpose for the car type?
- research - crash rating, miles per gallon
- color - resale value, automatic/standard
- used or new, miles on it
- test drive & compare - insurance
- purchase - finance or cash, or lease