

# SEG 3430 Information Systems Analysis & Design Tutorial — Introduction to *WinA&D*

## 1. What is WinA&D?

- 1) It is a software engineering application, which runs on Windows platform.
- 2) It supports the following types of documents:
  - **DFD** – Process models, also called data flow diagrams, are used to show the flow of information in a system and the processing done on the information.
  - **ERD** – Data models, also called entity relation diagrams, are used to show relationships between entities and their attributes in a data intensive system.
  - **DD** – Data Dictionary
  - **PS** – Process specification
  - .....
- 3) Thousands of developers in over 40 countries use it for system analysis, requirements management, software design, code generation and reengineering. Customers include General Motors, General Dynamics, IBM, EDS plus other leading universities, industrial companies and government agencies.

## 2. Where can I find it?

It is installed on all PCs in ES Lab (ERB 602) and ERP Lab (ERB 909) of SEEM department (EB-II). The version is 2.1.8., which is a pretty old version. You can find it from the Start menu.

## 3. What should I draw using it in this project?

You can use it to:

1. Draw DFDs: Data Flow Diagram
2. Maintain a DD: Data Dictionary
3. Finally, you will need to generate a report including all the above documents.

## Creating a New Project

Select **'File -> Project -> New'** to pop up the New Project dialog. Designate the project name, document folder, and document types to be created.

The screenshot shows the 'New Project' dialog box with the following details:

- Project Name:** untitled (with  Case Sensitive)
- Project Folder:** C:\untitled (with a **Pick** button)
- Dictionary:**  untitled.DD (with **Access** buttons:  Single,  Team)
- Requirements:**  untitled.RQT
- Data Flow Diagrams:**  untitled.DFD (with **Method** button)
- Structure Charts:**  untitled.SC
- Data Models:**  untitled.ERD (with **Method** button)
- State Models:**  untitled.STD (with **Method** button)
- Task Diagrams:**  untitled.TSK
- Class Diagrams:**  untitled.CLS (with **Method** button)
- Object Diagrams:**  untitled.OBJ (with **Method** button)

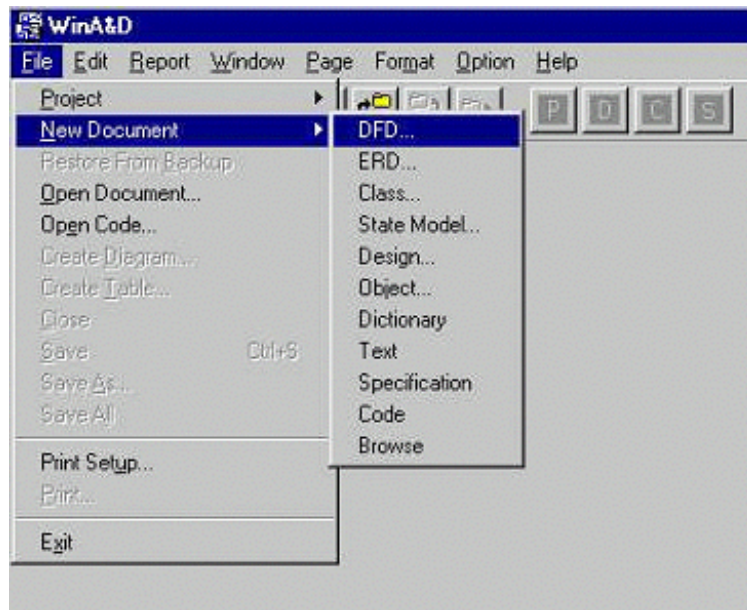
At the bottom of the dialog are **Generate Documents** and **Cancel** buttons.

**Note:** Make sure that you have chosen both Dictionary and Diagrams in this stage, so that WinA&D will automatically create Document References between your dictionary and diagram documents. This will do great help for your future work.

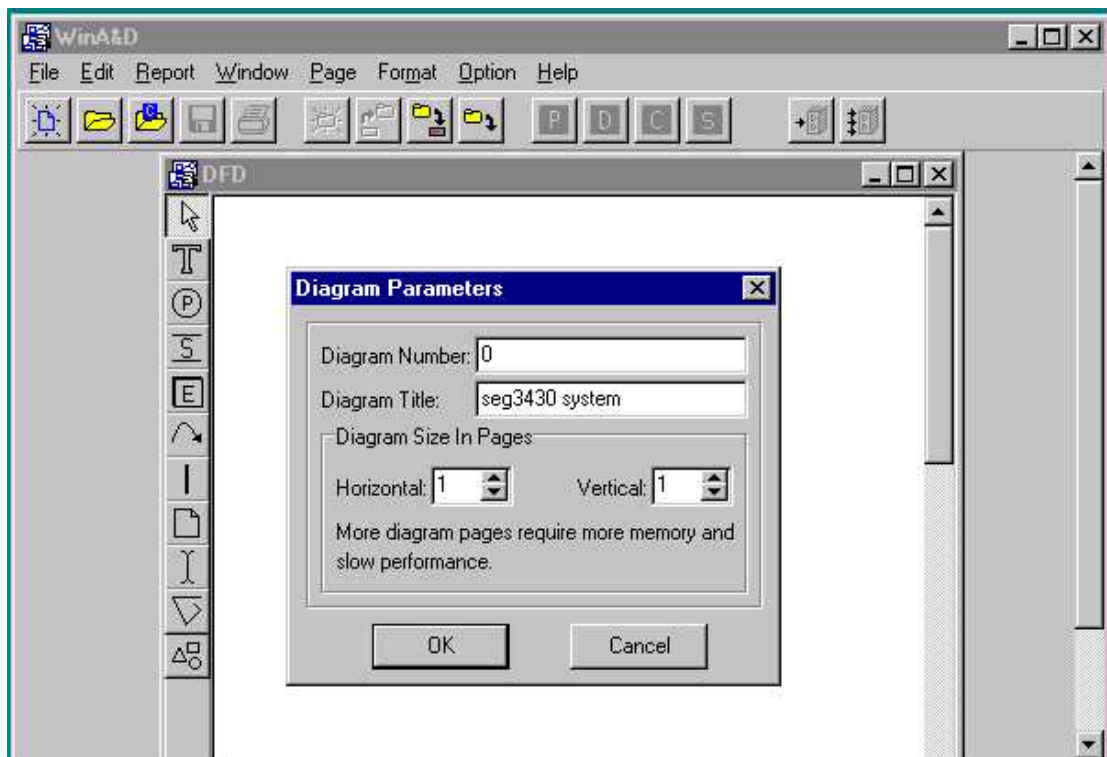
Later, as you draw diagrams, you'll need to create some Specification text files to your project.

# Drawing a DFD

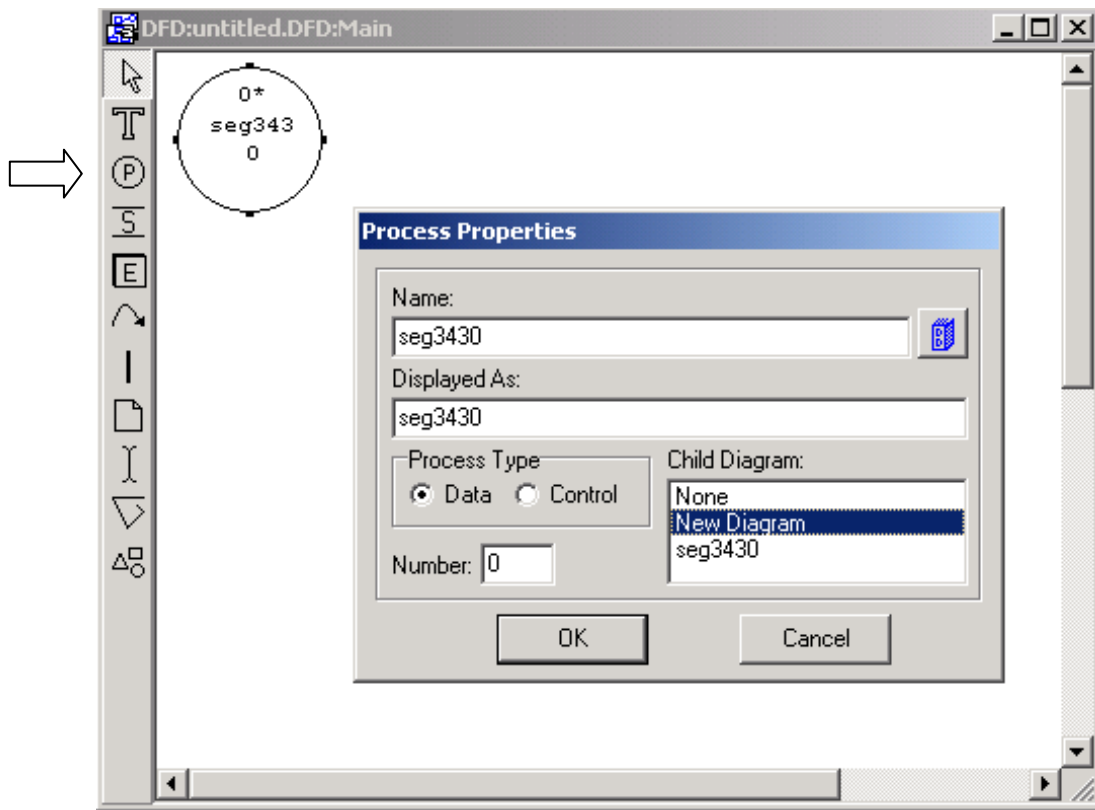
1. Open a new DFD document from **'File → New Document → DFD'** menu.



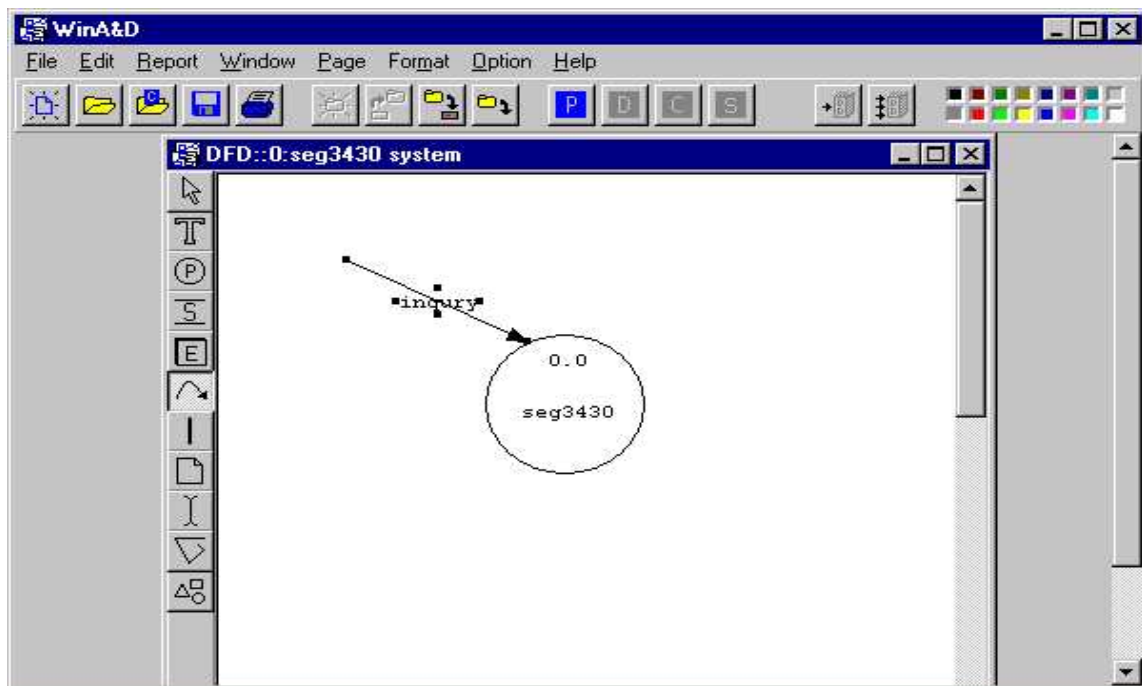
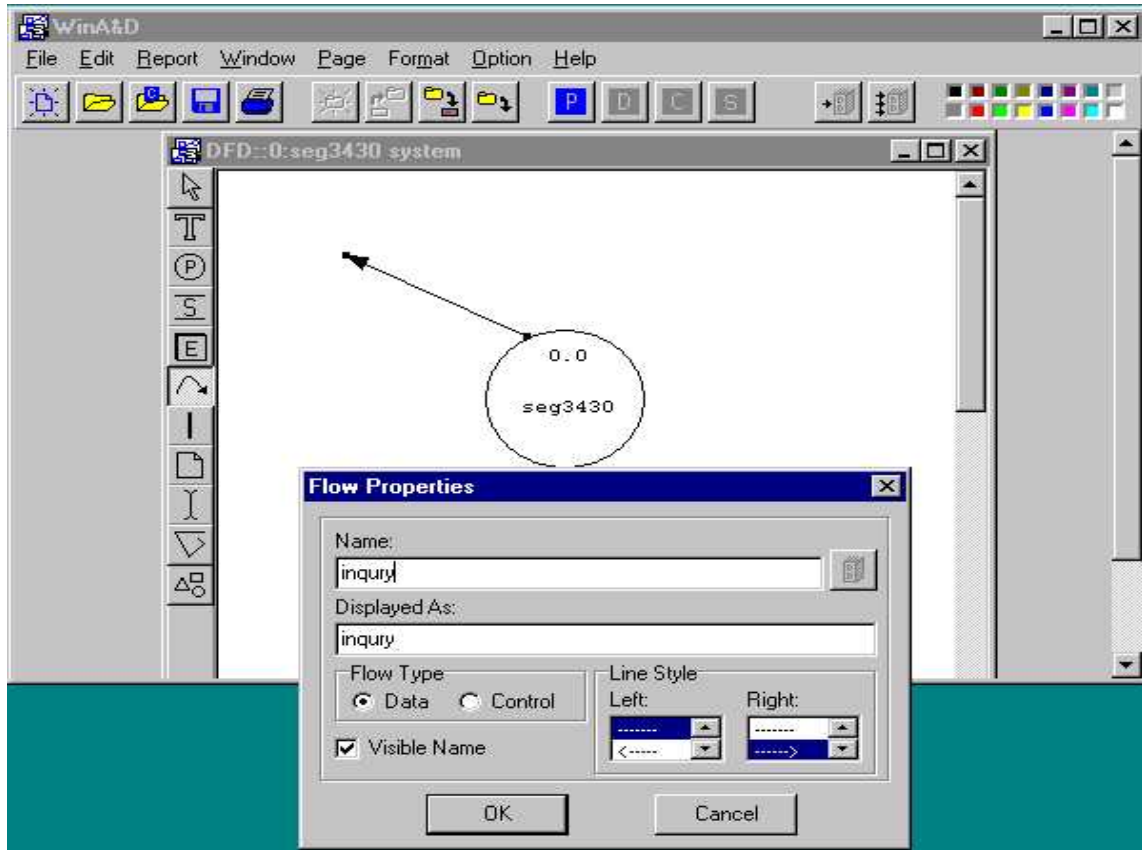
2. When a new DFD document is created, its property window will appear. Fill in the diagram parameters.



3. To draw the Process, choose **“Process tool”** from left toolbar and the property window appears. Fill in the appropriate items in property window and then a circle representing the process is drawn.



- To draw the Data Flow, choose **'Flow Tool'** from left toolbar, Click on the DFD to start a new data flow; double click to finish the data flow. You can also click on an existed Process to draw a line start or end with that process. When the data flow is drawn, the Flow Properties window will pop up. Fill in the Name and Line Style as needed.



5. To draw a child process, make sure that in the Process Property, ‘**New Diagram**’ is selected for Child Diagram. Double click on the current process, it will open the page for child processes. **Pressing SHIFT** while double click on the current page will bring you back to the parent process.
6. You can also use Store tool, External Entity tool, etc on the left bar to draw data stores and external entities in your design.

In order to choose an object (Process circle, Data Flow line or Text) to adjust its size or to move it, you must first choose “Selection arrow”. Only under “Selection arrow” status can you modify this object such as move it, resize it, group it with other object(s) and so on.

To move an object, select the object, then press the mouse button on the object and drag it to the new place.

To resize an object, use the Selection Arrow for grabbing selection knob and resizing the object.

To group several objects together so that you can move them together, you can either **press SHIFT** key and select the objects one by one, or use the Selection Arrow and draw a rectangle to select all the objects included in the rectangle.

To select the style of symbols in DFD (for example, **DeMarco/Yourdan Style** or **Gane & Sarson Style**), open up ‘**Option → Document Defaults → Operation**’ menu, then choose the style you like to use.

To automatically generate data dictionary entries and associate the entries with the elements in DFD, you can enable ‘**Automatic Dictionary Entry**’ from ‘**Option → Document Defaults → Operation**’ menu. This function makes your dictionary maintenance much easier.

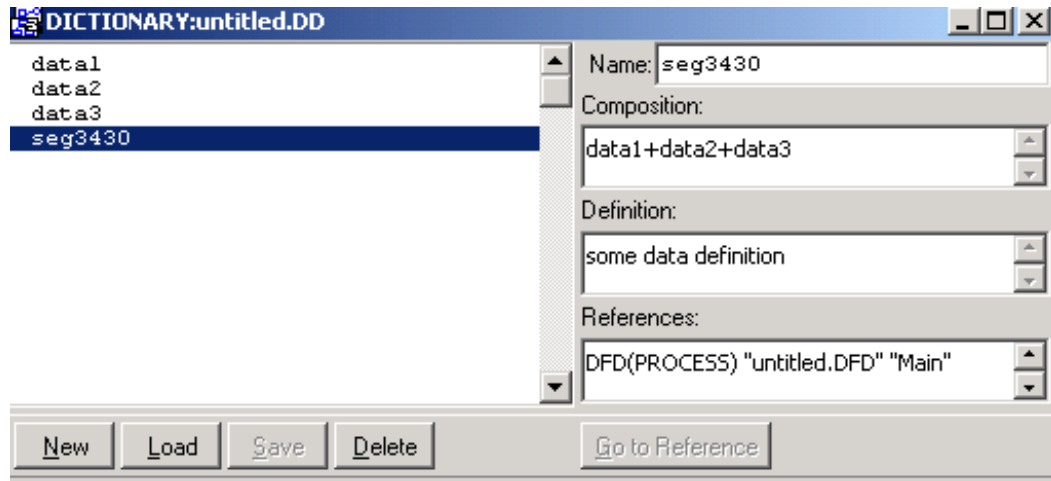
To draw smooth, curved data flow lines between two objects, first make sure that ‘**Flow Smoothing**’ is enabled from ‘**Option → Document Defaults → Presentation**’ menu. Click the source object, click on diagram between the source and destination object and finally click on the destination object.

To modify or update the property of the object, click icon with letter P (Show Properties) in the tool bar.



## Adding Dictionary Entries

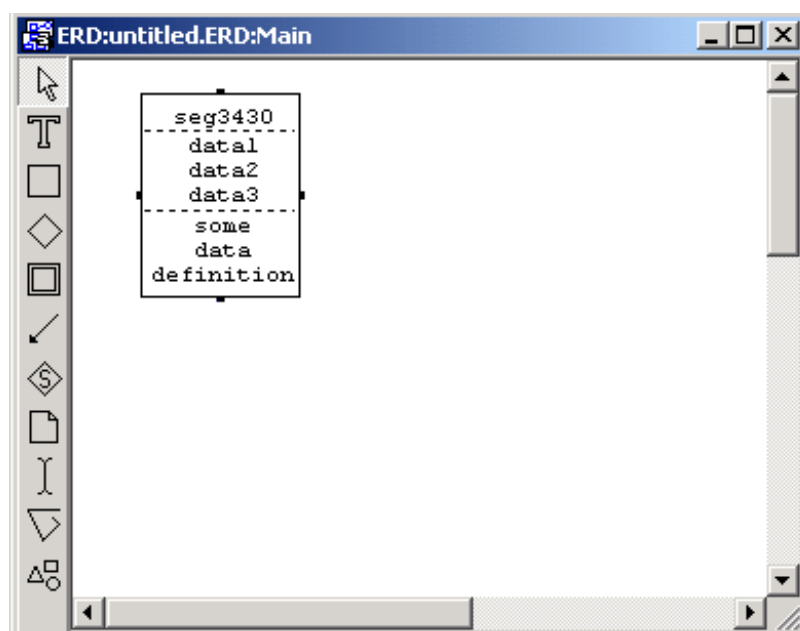
Dictionary entries for diagram objects can be added by Selecting **'Document -> Merge'** from the menu.



Once a dictionary entry has been created, you can click on it in the diagram to find its dictionary entry.

## Drawing E-R Diagram

Drawing E-R Diagram is basically the same as drawing the DFD. The difference is that now you need Entity tool, Relation tool and Connection tool instead of Process tool, Flow tool, etc. Another thing to note is that it will reflect your definition of the entities automatically.



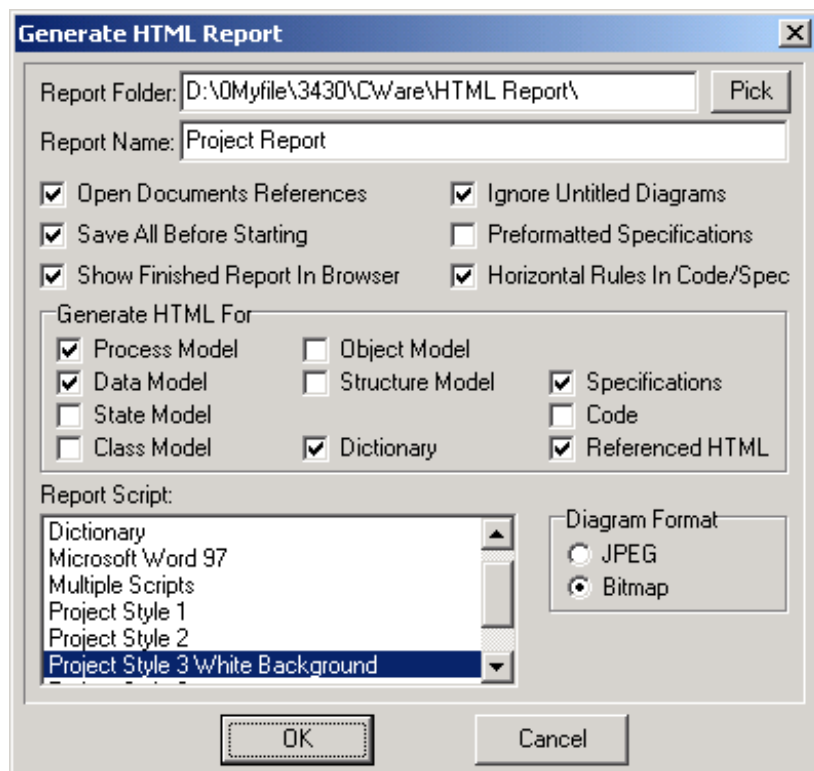
## Associating Specifications with Diagram Object

The Specification window can easily be associated with any diagram object that has a dictionary entry. Select the diagram object and click the Specification button. If no specification is associated with the selected object, the Create Code File dialog will be presented. The dialog shows a list of currently open specification or browses files or allows the user to create a new file or open any existing text file on disk. To use a file in the open list simply double-click its name, otherwise click the New Document or Existing Document buttons. WinA&D creates a reference to the code file in the diagram object's dictionary entry.

## Generating the Report

WinA&D can generate a report in HTML format automatically for your project design.

To generate the report, select from menu **'Report' -> 'Generate' -> 'HTML report...'** The **'Generate HTML Report'** dialogue as below will pop up. Set appropriate parameters before pressing OK.



**Note:** Specifications are in separated html files. You will need to add them to your report file manually when you hand in the report.

## Use build-in help info

Make full use of build-in online help information.

1. In WinA&D, select **help** menu from the menu bar.
2. In help topics, you can find general information on WinA&D's contents help.
3. In help's index information, you can find *specific* information you need by choosing appropriate keywords. The keywords must be those that are included in help resource. For example, I want to draw a data flow diagram but I'm not sure how to use flow tool. In help's index bar, I can issue a keyword of "flow".

