

Defect, Problem and Progress Tracking System

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SDSG

- Systems Development and Support Group
- Magnet Test Facility
 - Test Conventional and Super Conducting Magnets
- Maintain control, data acquisition, and monitoring systems
 - Ex. Chisox, EMS, Unix Support, etc.



Motivation for DPPTS

- Efficient Maintenance of various Systems
 - Require Knowledge of any Problems or Defects
 - Understanding of Systems' behavior
 - Mechanism to improve functionality, if needed

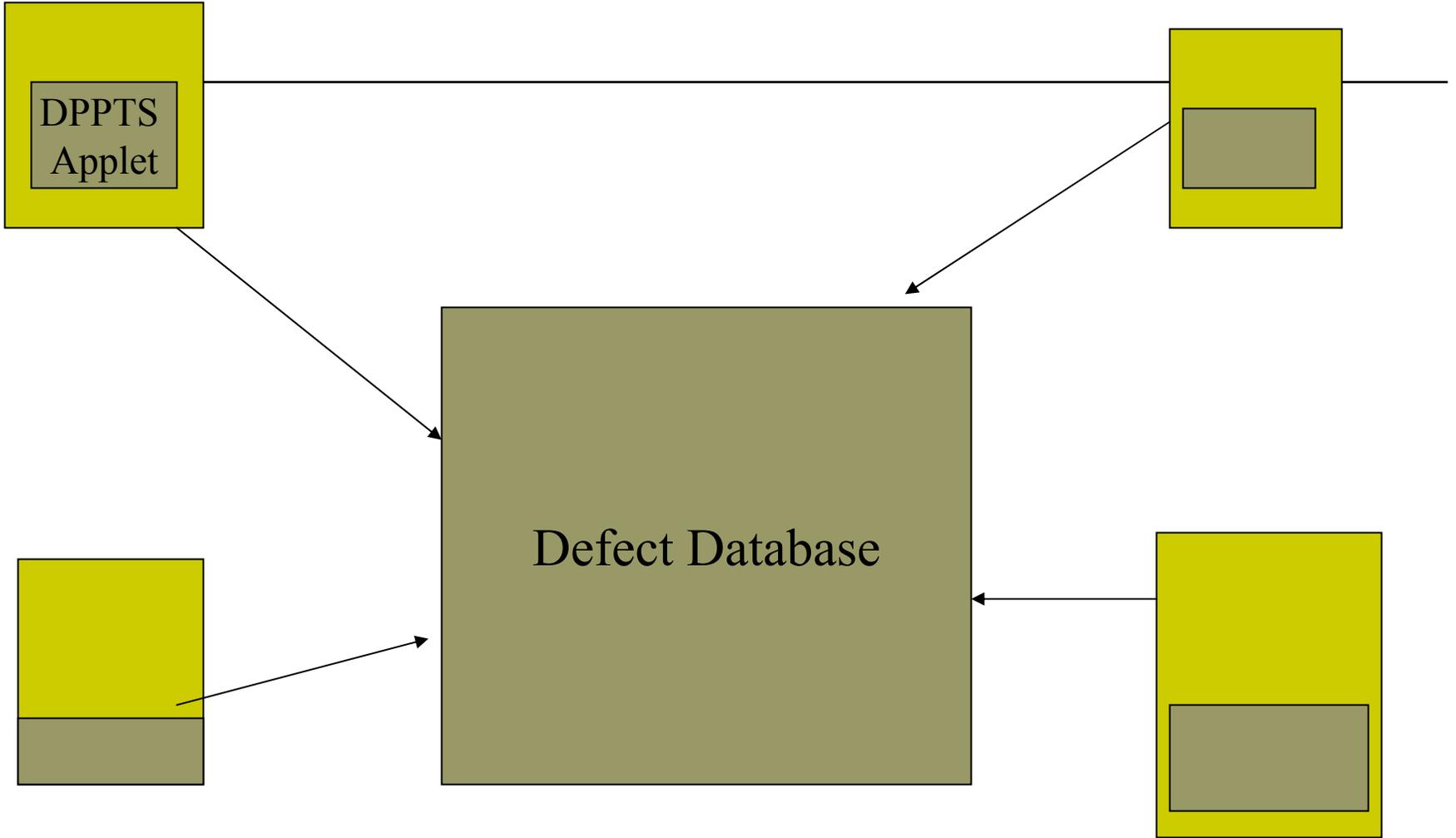
Motivation for DPPTS (cont.)

- MTF = Large Collaborative Environment
 - Difficult to keep track of old, new, and updated defects.
- Need for specialized system to track defects
- DPPTS is implemented for this purpose



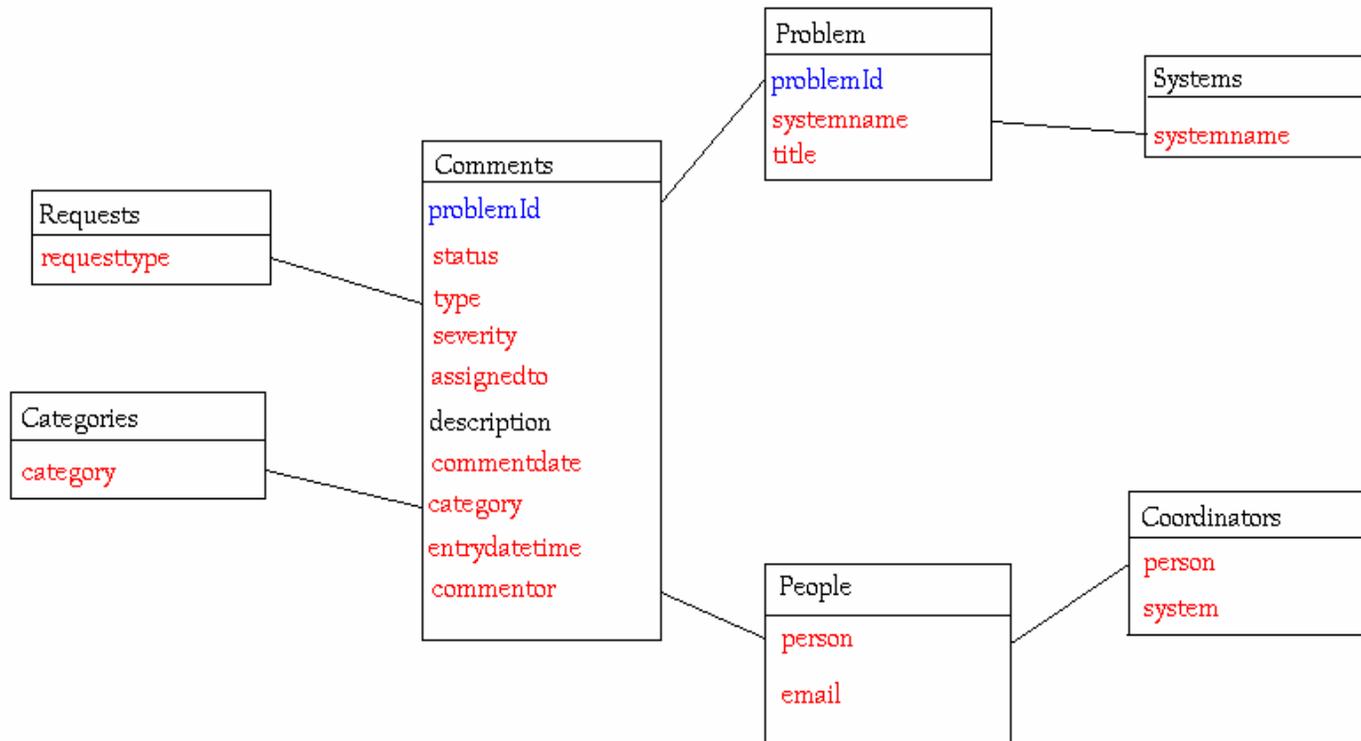
Remote
Nodes

The Basic Idea



Defect Database

Defect Tracking Database



Interface v1.5.2

Defect, Problem, & Progress Tracking V1.5.2

Update

New

History

Search Options

All Systems

All Categories

All Request Types

All Persons

Open

Closed

Last Month

Emergency

problem ID:

Submit Query

ID	Date	System	Status	Category	Title
237	1980-01-04 14:26:00.0	PC Support	closed	Configuration	Defective date due to Y2K problem
136	1997-07-02 10:55:00.0	DMCS	closed	In-house Software	Hardware test
133	1998-01-07 10:18:00.0	DMCS	closed	In-house Software	slow scan
138	1998-02-07 11:13:00.0	DMCS	deferred	In-house Software	Video camera
168	1998-03-03 13:49:00.0	DMCS	closed	In-house Software	Database model
167	1998-03-04 13:44:00.0	DMCS	closed	In-house Software	Requirements specification
171	1998-05-07 10:57:00.0	DMCS	closed	In-house Software	Prototype Positioning System
135	1998-07-16 10:27:00.0	DMCS	closed	In-house Software	Main menu
170	1998-08-01 14:01:00.0	DMCS	deferred	In-house Software	Refined data model.
169	1998-08-10 13:54:00.0	DMCS	closed	In-house Software	Prototype of GUI.
131	1998-09-23 10:03:00.0	DMCS	closed	In-house Software	Remote File System (RFS)
134	1998-09-23 10:22:00.0	DMCS	closed	In-house Software	CCS
132	1998-10-09 10:14:00.0	DMCS	closed	In-house Software	Scribe
225	1998-10-26 10:41:00.0	PC Support	closed	Network	131.225.47.128 subnet installation
144	1998-11-20 11:30:00.0	DMCS	closed	In-house Software	Documentation of calculations
137	1998-12-23 11:02:00.0	DMCS	closed	In-house Software	Calibrations entry application
148	1999-01-14 08:56:00.0	FMS	closed	In-house Software	Project organization: development

View results of your query

Interface (cont.)

Inserting New Problem

Dismiss Reset Apply

Event Date: 2002-7-31 10:47 Categories: Unknown

Title:

System: CHISOX Status: Open Commentor: Unknown Commentor

Type: defect Severity: Low AssignedTo: Not Assigned

Description:

Warning: Applet Window

Updating Original Problem

Dismiss Reset Apply

Date: 2002-7-31 10:50 ID: 237 Category: Configuration

System: PC Support Status: Closed Commentor: Unknown Commentor

Type: defect Severity: Low AssignedTo: Ping Wang

Description:

Warning: Applet Window

Interface (cont.)

The screenshot shows a web application window titled "History of all Comments". The window has a blue title bar and standard window controls (minimize, maximize, close). Below the title bar, there are three buttons: "Descripti...", "Update", and "Dismiss". The main content area contains a table with the following data:

ID	Date	Commentor	Status	Severity	Type	AssignedTo	Description
237	1980-01-04 14:26:0...	Dana Walbridge	open	low	defect	Jerzy Nogiec	The clock is also slow. Jerzy will deter...
237	2000-01-04 14:15:0...	Dana Walbridge	open	low	defect	Not Assigned	Jerzy's laptop has a Y2K problem with t...
237	2001-09-27 15:16:0...	Ping Wang	closed	low	defect	Ping Wang	The clock was adjusted. Office 97 was ...

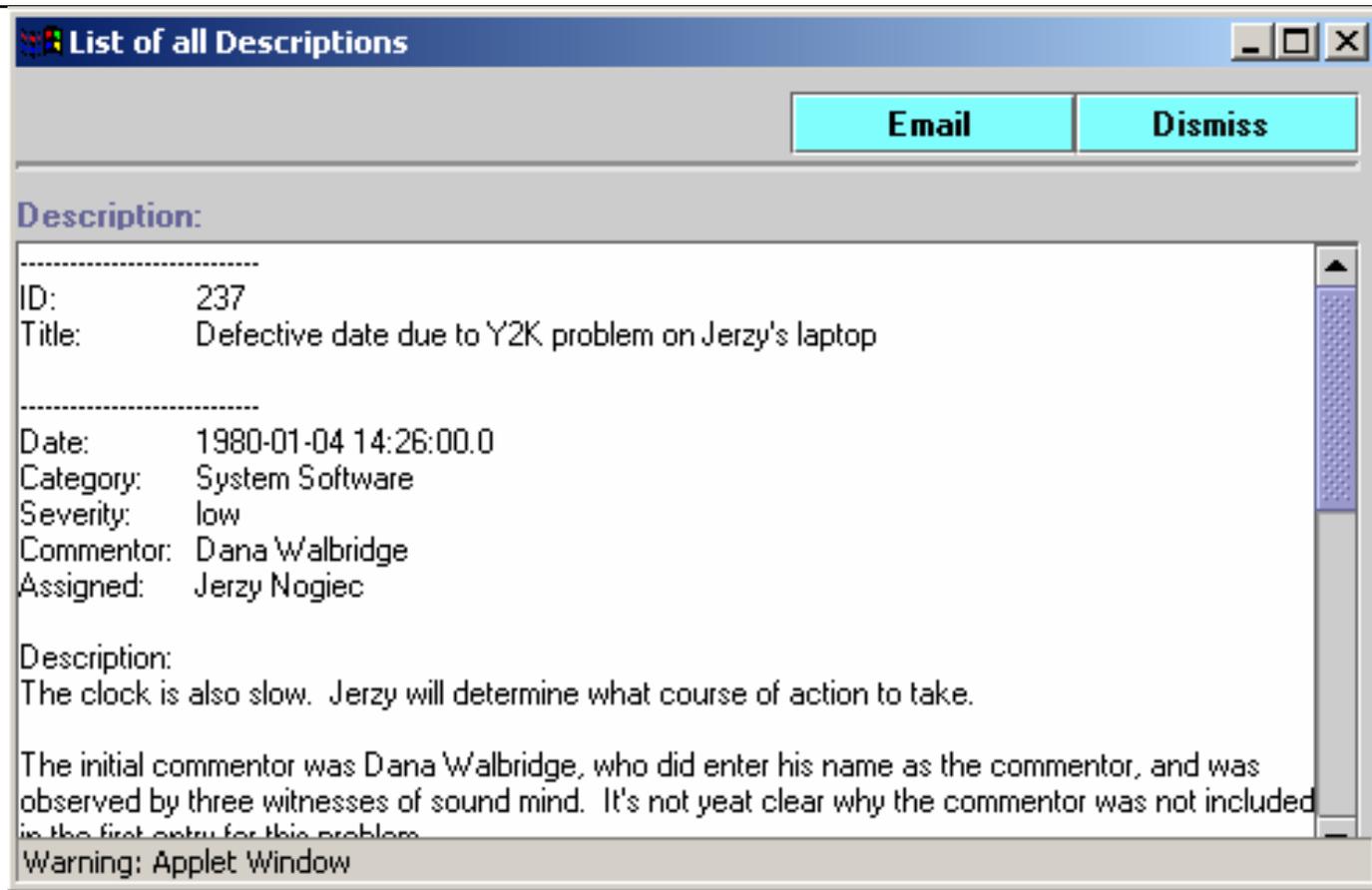
Below the table, there is a section titled "Description" with the following text:

The clock is also slow. Jerzy will determine what course of action to take.

The initial commentor was Dana Walbridge, who did enter his name as the commentor, and was observed by three witnesses of sound mind. It's not yet clear why the commentor was not included in the first entry for this problem.

Warning: Applet Window

Interface (cont.)





Possible Improvements

- Search options are rather limited
 - Keyword Search?
 - Date Search?
 - Allow more specific queries?
- How about Printing?

Upgrading DPPTS

- Make changes to source code?
 - Source code generated by PowerJ
 - Code is very obscure, difficult to make changes
 - Code dependent on non-standard PowerJ classes
 - PowerJ is no longer continued
- Start all over from scratch!



Crash Course in Java -- OOP

- Object Oriented Programming
- Objects do all the work
 - Methods – similar to functions
 - Data members (ints, booleans, or other objects)
- Methods and data members defined in Classes
 - Objects are particular “instances” of Classes

Objects and Classes Ex.

```
class Clubs {  
    int cover() {}  
}
```

```
Clubs DragonRoom;  
.....  
DragonRoom.cover();
```

```
Clubs ClubO;  
.....  
ClubO.cover();
```

Objects Passed as Arguments

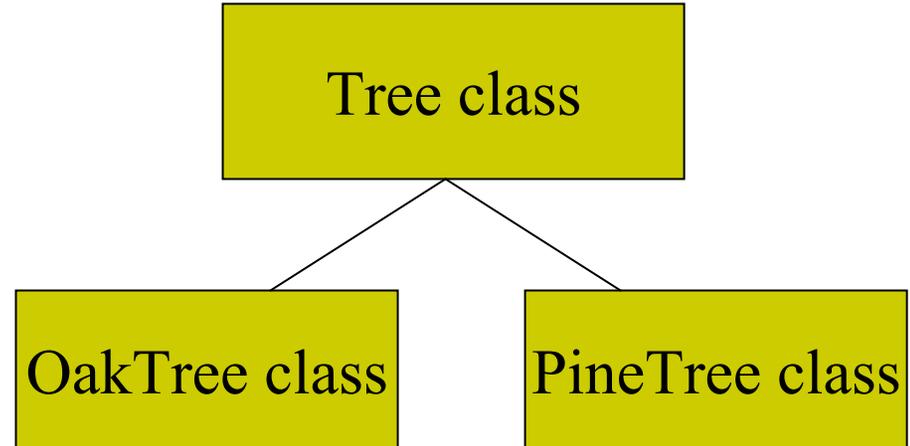
```
class Bartender{  
    Drink mix(Drink drink1, Drink drink2){}  
}
```

```
class Drink {  
}
```

```
Drink koolAid, vodka;  
....  
Bartender charlie;  
....  
Drink bruceJuice = charlie.mix(koolAid, vodka);
```

Inheritance

- Allows creation of subclasses
- Subclasses inherits methods and data members from superclass
- Instance of subclass is also instance of superclass





Design of New Applet

- Use same specs as previous version
- Use another frame for extra search options
- Include a printing function

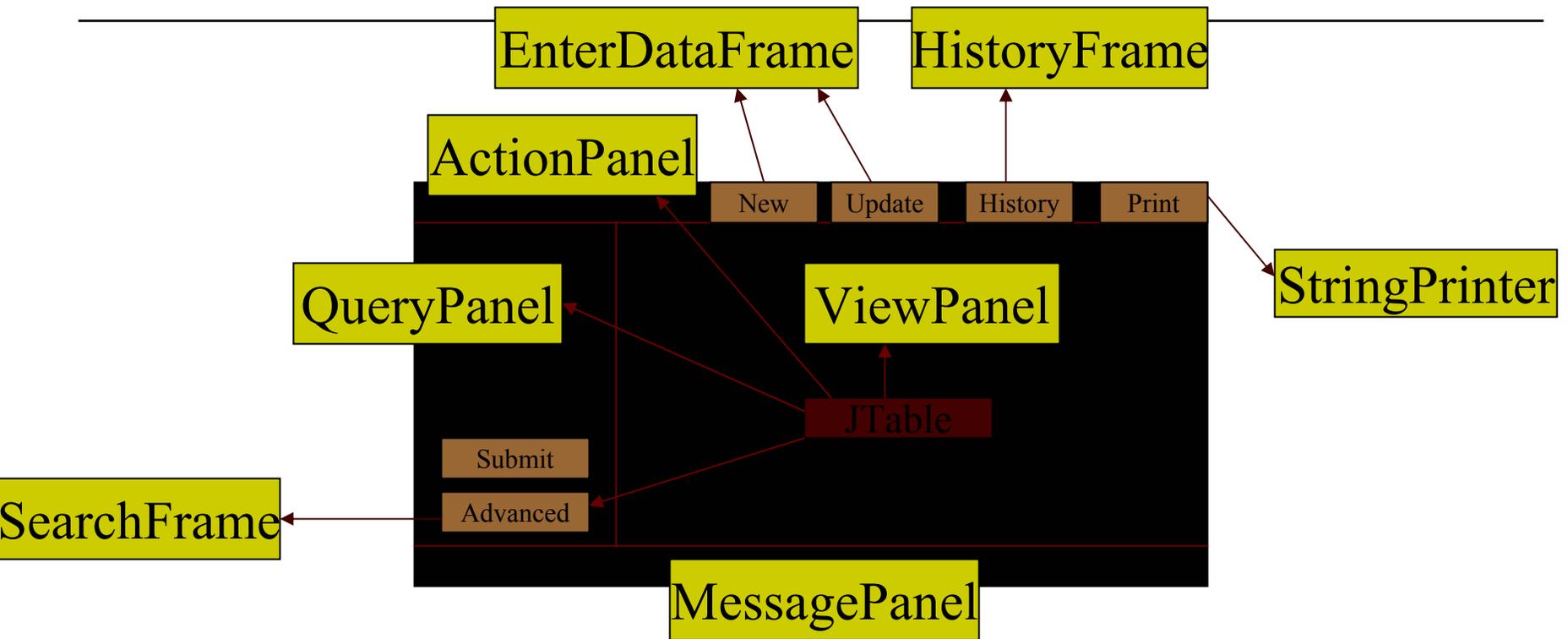
Design (cont.)

- Make a class for everything
 - Advantage – component details are hidden from others (ADT)
 - Disadvantage – a ton of classes
 - Disadvantage – communication between components?

Design (cont.)

- Create classes for panels and frames.
- Almost each class will need to access database
- Create classes to hide details of database from visual components
 - DbAccessor – establish connection
 - DataManager – handle requests to/from database (SQL)

Design (cont.) -- Panel Classes



Construct Panels with the same JTable object



Frame Classes

- EnterDataFrame
 - New and Update Entry Frames
 - Constructor requires data for update frame
 - Sends email to coordinator and assigned (Emailer).
- HistoryFrame
 - Require table data in constructor (Vectors)
 - Creates Description Frame

Frame classes (cont.)

- SearchFrame
 - More Query Options (keyword, date, etc)
 - Should also house same instance of JTable
- DescriptionFrame
 - Displays text information
 - Constructor requires string (text)
 - Email dialog (Mailer class)

Other Classes

- DataTableModel
 - Creates a table model used to change information in JTables
- Emailer
 - Sends email
- StringPrinter
 - Sends a string to a printer

Other Classes (cont.)

- AppletFrame
 - Displays an applet in a frame
 - Allows applet to run as an application
- DbAccessor
 - Connects to Database
- DataManager
 - SQL statements

Version 2.0

Defect, Problem, & Progress Tracking V2.0

New Update History Print

Search Options

All Systems ▼

All Categories ▼

All Request Types ▼

All Persons ▼

All Stats ▼

All Severities ▼

Last Month

problem ID:

Submit Query

Advanced Options

ID	Date	System	Status	Category	Title
237	1980-01-0...	PC Support	closed	Configurati...	Defective date due to Y...
136	1997-07-0...	DMCS	closed	In-house S...	Hardware test
133	1998-01-0...	DMCS	closed	In-house S...	slow scan
138	1998-02-0...	DMCS	deferred	In-house S...	Video camera
168	1998-03-0...	DMCS	closed	In-house S...	Database model
167	1998-03-0...	DMCS	closed	In-house S...	Requirements specific...
171	1998-05-0...	DMCS	closed	In-house S...	Prototype Positioning ...
135	1998-07-1...	DMCS	closed	In-house S...	Main menu
170	1998-08-0...	DMCS	deferred	In-house S...	Refined data model.
169	1998-08-1...	DMCS	closed	In-house S...	Prototype of GUI.
131	1998-09-2...	DMCS	closed	In-house S...	Remote File System (...)
134	1998-09-2...	DMCS	closed	In-house S...	CCS
132	1998-10-0...	DMCS	closed	In-house S...	Scribe
225	1998-10-2...	PC Support	closed	Network	131.225.47.128 subne...
144	1998-11-2...	DMCS	closed	In-house S...	Documentation of calc...
137	1998-12-2...	DMCS	closed	In-house S...	Calibrations entry appli...
148	1999-01-1...	EMS	closed	In-house S...	Project organization: d...
149	1999-01-1...	EMS	closed	In-house S...	Business case

Query Completed

New or Updated Entries

New Defect

Dismiss Reset Apply

Categories:
Unknown

Title

Event Date: 2002-08-05 17:23 Deadline:

System: Unknown System Status: open commentor: Unspecified Commentor

Type: defect Severity: low Assigned To: Not Assigned

Descripton:

Update Defect

Dismiss Reset Apply

ID: 783 Categories: System Software

Title: Test

Event Date: 2002-08-05 17:23 Deadline:

System: Other Status: closed commentor: Unspecified Commentor

Type: defect Severity: low Assigned To: Not Assigned

Descripton:

Test Drive

Advanced Search Options [Close]

Dismiss Reset Submit

Sta **Progress Tracking V2.0** **New** **Update** **History** **Print**

	ID	Date	System	Status	Category	Title
All	999	2002-07-3...	Other	closed	In-house S...	URGENT!!

Type: All

Start Deadline: End Deadline:

History of All Comments [Close]

Description Update Dismiss Print

ID	Date	Commentor	Status	Severity	Type	Assigned To	Description	...
999	2002-07-30 1...	Pierre, Ravin Pierre	open	high	other	Anton Anton	Where's the cheese?!	...

Another Test Drive

Progress Tracking V2.0

New Update History Print

ID	Date	System	Status	Category	Title
----	------	--------	--------	----------	-------

History of All Comments

Description Update Dismiss Print

ID	Date	Commentor	Status	Severity	Type	Assigned To	Description	...
2999	2002-06-21 1...	Charles Smith	open	low	defect	Not Assigned	appears to be defect in pole measurement di...	
2999	2002-06-25 1...	H Cee	closed	low	defect	Not Assigned	b/c pole length was measured to be 2 inches...	

Description:

b/c pole length was measured to be 2 inches from the ground

714	2001-11-20 ...	Other	open	In-house S...	Stand B Freezer Tests
720	2002-02-06	EMC	closed	Configurati	configure itself for production

Conclusions

- The program may run as either an application or an applet.
- Runs in Java Runtime Environment 1.3 or better.
- Most importantly, It works!
 - The project was successful.