# ICS 52: Introduction to Software Engineering
## Winter 2004

## Instructor: Dr. Richard Taylor
### TA: Scott Hendrickson

### Assignment 4: Testing

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Issued:** Friday, 12th March 2004
**Due:** Thursday, 18th March 2004 (beginning of class)

## SUMMARY

In this assignment you will design system tests for the UniCal calendaring application. Your testing should follow the general approach to black box testing that was explained during the **week 8 lecture on "Testing" (see course web page)**.

## ASSIGNMENT DETAILS

1. Use a sub-domain based strategy to select black-box test cases for the UniCal calendaring application (see week 8 lecture slides on "Testing"). Create matrices to record the test cases that you select. For an example, see slides 18-21 in the week 8 lecture slides on "Testing".

2. ~~Execute the test cases that you designed in the above step, recording the results in a printed copy of the matrices.~~ *You do not need to run your tests on any implementation.*

3. Turn in a document containing the following items:

   a. A general description of how you would carry out your testing process, including a description of your approach to running test cases, to storing test results, and to determining whether a test case succeeded or failed.

   b. A short description of the sub-domains that you used in selecting test cases, and a detailed argument explaining why you believe use of these sub-domains and matrices constitute a comprehensive test of your software.

   c. The completed matrices that you developed during the process of testing. Format the matrices in the same way that the example matrix is formatted on the last page of this assignment.

**\*\*\*** For this assignment, you should assume that the testing will only be performed through the Calendar GUI, which has already been fully tested. Therefore, in the **Test Case** column you will indicate what *requests* the GUI will send up, and in the **Expected Output** column you will indicate what *notifications* you expect it to receive. You will treat the rest of the system as a black box. **In your matrices you must specify all parameters of each request or notification.** Each test is assumed to modify the state of the system being tested. Therefore, once you've added a category, you can refer to it in later tests. If you want to reset the system, you may do so by making a note in the test input as was done below. If multiple notifications are expected, then list them together in the expected output column. **\*\*\***

## STRUCTURE

The hard copy of your assignment that you turn in for credit should include:

- A title page using a 20 point font with the following text centered vertically and horizontally

<div align="center">

UniCal Calendaring Testing

First_name Last_name
{Last four digits of your student ID}

ICS 52
Instructor: Dr. R. N. Taylor
Winter 2004

</div>

- Page numbers at the bottom of each page
- Stapled once in the upper left hand corner, no binders, no plastic covers.

## GRADING

70% for your selection of sub-domains and test cases
30% for documentation of your testing process

The assignment counts 10% towards your final grade for the course.

## Note:

- **Do not work in teams to complete this assignment**
- **No late assignments will be accepted**

Matrix 1: An example showing what the contents of a matrix should look like. Have a description above each matrix so that it's easy to see when one matrix ends and another begins. Take advantage of the table features in Word. **Word will repeat header rows, and not break cells across a page. This is a requirement for your assignment: 1) don't allow cells to break across page boundaries 2) each page must have the header rows.** The table below has these features turned on. These can be set in the Table | Table Properties dialog box. You may start with the matrix below if you want.

| Test Case (input) | Basis: *Example Matrix* | | | | Expected Output |
|---|---|---|---|---|---|
| | Basis A | Basis B | Basis C | Basis D | |
| **\* SYSTEM RESET \*** | | | | | All data is removed |
| **AddCategory:**<br>Name="Work",<br>Description="TA Work",<br>Color=Red | X | | | | **CategoryInfo:**<br>CategoryId=C1,<br>Name="Work",<br>Description="TA Work",<br>Color=Red,<br>OldName="Work",<br>OldDescription="TA Work",<br>OldColor=Red |
| **AddEvent**:<br>Name="Class",<br>CategoryId=C1,<br>Description="TA Work",<br>StartTime=2:00 pm 3/13/2004,<br>EndTime=3:30 pm 3/13/2004,<br>Reminder=1:55 pm 3/13/2004 | | X | | | **EventInfo**:<br>EventId=E1,<br>Name="Class",<br>CategoryId=C1,<br>Description="TA Work",<br>StartTime=2:00 pm 3/13/2004,<br>EndTime=3:30 pm 3/13/2004,<br>Reminder=1:55 pm 3/13/2004,<br>OldName="Class",<br>OldCategoryId=C1,<br>OldDescription="TA Work"<br>OldStartTime=2:00 pm 3/13/2004,<br>OldEndTime=3:30 pm 3/13/2004,<br>OldReminder=1:55 pm 3/13/2004<br><br>**EventConflicts:**<br>EventIds={} |
| **AddTask:**<br>Name="Finish Impl",<br>Description="Homework",<br>DueTime=2:00 pm 3/9/2004,<br>Reminder=1:30 pm 3/9/2004,<br>Completed=false | | | X | | **TaskInfo:**<br>TaskId=T1,<br>Name="Finish Impl",<br>Description="Homework",<br>DueTime=2:00 pm 3/9/2004,<br>Reminder=1:30 pm 3/9/2004,<br>Completed=false,<br>OldName="Finish Impl",<br>OldDescription="Homework",<br>OldDueTime=2:00 pm 3/9/2004,<br>OldReminder=1:30 pm 3/9/2004,<br>OldCompleted=false |

| Test Case (input) | Basis: *Example Matrix* | | | | Expected Output |
|---|---|---|---|---|---|
| | Basis A | Basis B | Basis C | Basis D | |
| **UpdateCategory**:<br>CategoryId=C1,<br>Name="Work",<br>Description="ICS 52 TA",<br>Color=Green | X | | | | **CategoryInfo:**<br>CategoryId=C1,<br>Name="Work",<br>Description="ICS 52 TA",<br>Color=Red,<br>OldName="Work",<br>OldDescription="TA Work",<br>OldColor=Green |
| **AddEvent**:<br>Name="Meeting",<br>CategoryId=C1,<br>Description="Dr. Taylor",<br>StartTime=2:30 pm 3/13/2004,<br>EndTime=4:00 pm 3/13/2004,<br>Reminder=2:25 pm 3/13/2004 | | X | | | **EventInfo**:<br>EventId=E2<br>Name="Meeting",<br>CategoryId=C1,<br>Description="Dr. Taylor",<br>StartTime=2:30 pm 3/13/2004,<br>EndTime=4:00 pm 3/13/2004,<br>Reminder=2:25 pm 3/13/2004<br>OldName="Meeting",<br>OldCategoryId=C1,<br>OldDescription="Dr. Taylor",<br>OldStartTime=2:30 pm 3/13/2004,<br>OldEndTime=4:00 pm 3/13/2004,<br>OldReminder=2:25 pm 3/13/2004<br><br>**EventConflicts:**<br>EventIds={E1, E2} |
| **\* SYSTEM IS RESET \*** | | | | | All data is removed |
| **RemoveCategory:**<br>CategoryId=C1 | | | | | No notifications:<br>There is no category C1 to remove |