CSE6214 Software Engineering Fundamentals

Tutorial 10

Part A: Discussion

Topic (Lecture 10): Software Testing Techniques

1. Two main approaches in testing are white box testing and black box testing. Explain white box and black box testing approaches and contrast these two testing approaches.

2. Given the following program:

```
A    input (mark)
B    if mark < 45
C        then print "Fail"
D        else print "Pass"
E    if mark > 80
F        then print "With Distinction"
G    end
```

   (a) Draw the flowgraph for this program.

   (b) Based on the flowgraph, determine the cyclomatic complexity of this program.

   (c) How many test cases are required to completely test all the paths of this program?

3. How does unit testing differ for object-oriented testing as compared to conventional software unit testing?

4. What is scenario-based testing?

5. Describe the how test cases are derived from behavior models to facilitate interclass testing?

Part B: **Project**

Task: Software development and test plan

1. For each use case (assigned to individual team member), complete the integration of the interface objects and the data objects, and test the function using the test data prepared in previous tutorial.

2. Each team member prepares an acceptance test of software by listing the criteria that is to be tested for each use case. The acceptance test should be a table containing the following columns:

Criteria	Fulfilled?	Remarks
:	:	:
:	:	:

Date tested   : _____
% Complete   : _____
Tested by   : _____
Verified by   : _____

3. You should be able to test each criterion using the test data prepared in previous tutorial. If not, add the appropriate test data to test each criterion.