

CISC 327

Software Quality Assurance

Lecture “review3”

Review for Mini-Exam #3

Likely kinds of questions

- Why white box testing???
 - E.g. hidden backdoor
 - E.g. unexpected logics not in specifications
- Two categories:
 - Statement analysis methods
 - Decision analysis methods.

Likely kinds of questions

1. Is method _____ white box or black box?
2. For a given systematic test method,
identify system and completeness criterion
3. For a program, identify paths and write
covering path tests
 - a. NOTE: paths could be impossible!

Example

```
int mess_1 (int x, int y, int m, int n) {  
1      int r = 1;  
2      if ((x >= 23) || (y <= 21)) {  
3          if ((m >= 49) || (n > 83)){  
4              x = x + 1;  
              r = x * y;  
          }  
          else  
5              r = 0;  
        } else {  
6            r += (x * y);  
        }  
7      return r;  
}
```

Likely topics on mini-exam #2

- White box testing (how to measure): code instrumentation/injection
- White box methods:
 - Statement coverage (given test cases, report covered statement percentage)
 - Basic block coverage (know how)
 - **Decision coverage (hands-on)**
 - **Condition coverage (hands-on)**
 - **Loop coverage (hands-on)**
 - **Path coverage (hands-on)**
 - Data coverage
 - *Data Interface coverage vs. input partitioning*

Likely topics on mini-exam #2

– Loop coverage

- Nested loops:
 - Create/Analyze test cases separately
 - Remove duplicates
- Practice: loop coverage for bubble-sort algorithm

– Path coverage

- Draw flow graph
- Find independent path
- Create test cases

– Data coverage

- Data Interface coverage vs. input partitioning coverage