CS 4501/6501: Quiz 7

17-Oct-2017

Names:

Instruction: Answer the questions as concisely as you can. Please write neatly; if I can't read it I have to mark it wrong.

Consider the graph and answer the following questions

```
N  = {1, 2, 3, 4, 5, 6}
N0 = {1}
Nf = {6}
E  = {(1,2), (2,3), (2,6), (3,4), (3,5), (4,5), (5,2)}

Test paths:
t1 = [1,2,6]
t2 = [1,2,3,4,5,2,3,5,2,6]
t3 = [1,2,3,5,2,3,4,5,2,6]
t4 = [1,2,3,5,2,3,5,2,6]
```

1. (3 pts.) List the test requirements for Edge-Pair Coverage

   Answer:

   ```
   TR for EPC = {(1,2,3), (1,2,6), (2,3,4), (2,3,5), (3,4,5),
                 (3,5,2), (4,5,2), (5,2,3), (5,2,6)}
   ```

2. (3 pts.) List the test requirements for Prime Path Coverage

   Answer:

   ```
   TR for PPC = {(3,4,5,2,3), (2,3,4,5,2), (1,2,3,4,5), (3,4,5,2,6),
                 (5,2,3,4,5), (4,5,2,3,4), (2,3,5,2), (1,2,3,5),
                 (3,5,2,3), (5,2,3,5), (3,5,2,6), (1,2,6)}
   ```

3. (2 pts.) Does the given set of test paths satisfy Edge-Pair Coverage? If not, state what is missing

   Answer:

   ```
   Yes
   ```

4. (2 pts.) Does the given set of test paths satisfy Prime Path Coverage? If not, state what is missing

   Answer:

   ```
   No. Missing (4,5,2,3,4)
   ```

```
TR for NC = {1,2,3,4,5,6}
TR for EC = {(1,2), (2,3), (2,6), (3,4), (3,5), (4,5), (5,2)}
TR for EPC = {(1,2,3), (1,2,6), (2,3,4), (2,3,5), (3,4,5), (3,5,2), (4,5,2), (5,2,3), (5,2,6)}
TR for PPC = {(3,4,5,2,3), (2,3,4,5,2), (1,2,3,4,5), (3,4,5,2,6),
              (5,2,3,4,5), (4,5,2,3,4), (2,3,5,2), (1,2,3,5),
              (3,5,2,3), (5,2,3,5), (3,5,2,6), (1,2,6)}

test paths for NC = {[1,2,3,4,5,2,6]}
test paths for EC = {[1,2,3,5,2,6], [1,2,3,4,5,2,6]}
test paths for EPC = {[1,2,6], [1,2,3,4,5,2,6], [1,2,3,5,2,3,5,2,6]}
test paths for PPC = {
     [1,2,3,4,5,2,3,5,2,6],    direct tour [3,4,5,2,3], [2,3,4,5,2], [1,2,3,4,5],
                                           [2,3,5,2], [5,2,3,5], [3,5,2,6]
     [1,2,3,5,2,3,4,5,2,6],    direct tour [2,3,4,5,2], [3,4,5,2,6], [5,2,3,4,5],
                                           [2,3,5,2], [1,2,3,5], [3,5,2,3]
     [1,2,3,4,5,2,3,4,5,2,6],  direct tour [3,4,5,2,3], [2,3,4,5,2], [1,2,3,4,5],
                                           [3,4,5,2,6], [5,2,3,4,5], [4,5,2,3,4]
```

```
  [1,2,3,5,2,3,5,2,6],      direct tour [2,3,5,2], [1,2,3,5], [3,5,2,3],
                                        [5,2,3,5], [3,5,2,6]
  [1,2,6]                   direct tour [1,2,6]
}
```