

CMSC 435 (Section 0201) : Quiz 13

1. **Please remember to write your name and SSN on this sheet before handing it in.**

2. Our definition of an event-flow graph is analogous to that of a program-flow graph. Instead of representing basic blocks (or in some cases program statements), the event-flow graph nodes represent events. Relationships between events (shown as edges) represent an ordering of these events along some execution path. As discussed in class, during regression testing of conventional (non-GUI) programs, the program-flow graphs of the original and modified programs may be used as the basis for regression-test selection. Extend this idea to regression test selection of GUI-based programs using event-flow graphs. Outline your idea as an algorithm. You may assume that the event-flow graphs of the original and modified programs are given; you may also assume the availability of the following functions:

- `modified(Event)` - returns TRUE if an event has been modified
- `added(Event)` - returns TRUE if an event has been added
- `deleted(Event)` - returns TRUE if an event has been deleted
- `added(Edge)` - returns TRUE if an edge has been added
- `deleted(Edge)` - returns TRUE if an edge has been deleted

```
1: for all test cases  $t$  do
2:    $SelectTest[t] \leftarrow FALSE$ 
3:   { $t$  is a sequence of edges  $(u, v)$  from the event-flow graph}
4:   for all edges  $(u, v) \in t$  do
5:     if modified(u) OR modified(v) OR added(u) OR added(v) OR
       deleted(u) OR deleted(v) OR added((u,v)) OR deleted((u,v)) then
6:        $SelectTest[t] \leftarrow TRUE$ 
7:       break
8:     end if
9:   end for
10: end for
```