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ATOMICITY VIOLATION - MYSQL

Two threads access the proc_info field in struct thd

NULL is 0 in C

Serialized access to shared memory among separate threads is not enforced (e.g. non-atomic)

Simple example:

Thread1:

Thread1:

Thread2:

Thread2:

Thread2:

Thread3:

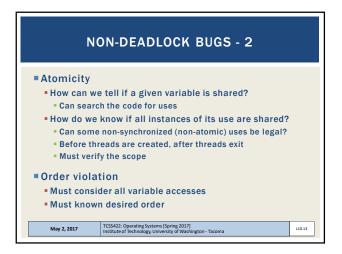
Thread3
```

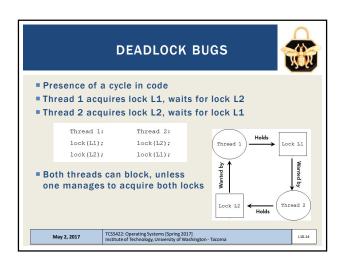
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NON-DEADLOCK BUGS - 1

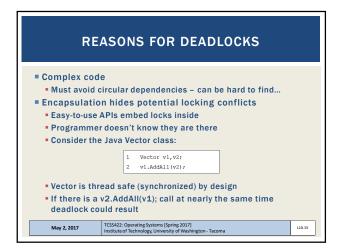
97% of Non-Deadlock Bugs were
Atomicity
Order violations

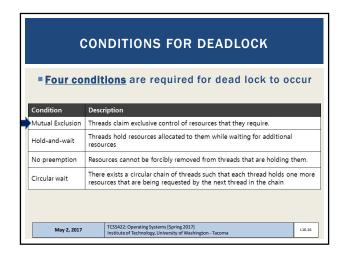
Consider what is involved in "spotting" these bugs in code

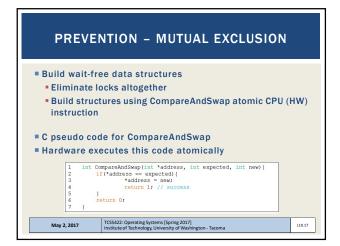
Desire for automated tool support (IDE)
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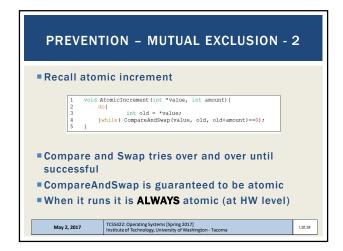












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MUTUAL EXCLUSION: LIST INSERTION

Consider list insertion

1 void insert(int value) {
2    node_t * n = malloc(sizeof(node_t));
3    assert(n != NULL);
4    n - value v value;
5    n - next = head;
6    head = n;
7  }

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TCSS422: Operating Systems [Spring 2017]
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