**CSCI235: Database Systems**

**Assignment 2**

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**Task 2**



|  |  |  |
| --- | --- | --- |
| T1 | T2 | T3 |
| lock(z); d = read(z) |  |  |
|  | lock(x); a = read(x) |  |
|  |  | lock(v); c = read(v); |
|  |  | lock(x); wait; |
| lock(v); wait; |  |  |
|  | lock(y); write(y, a+1) |  |
| ` | lock(z); wait; |  |



|  |  |  |  |
| --- | --- | --- | --- |
| T1 | T2 | T3 | TO |
|  | Timestamp(t2) |  |  |
|  | A = read(x) |  | X: t2 |
|  |  | Timestamp(t3) |  |
|  |  | C = read(Z) | Z: t3 |
|  | Write(y, a+1) |  | Y: t2 |
|  | Write(z, a-1); fail |  | Z: t3, t2 |
|  |  |  |  |
|  |  | write(X, 1) | X: t2, t3 |
|  |  | Commit |  |
| Timestamp(t1) |  |  |  |
| D = read(z); forced abort |  |  |  |

|  |  |  |
| --- | --- | --- |
| T1 | T2 | T3 |
|  |  | C = read(v) |
| D = read(z) |  |  |
|  | A = read(x) |  |
|  | Write(y, a+1) |  |
| Write(v, d+1) |  |  |
| Commit |  |  |
|  | Write(z, a-1) |  |
|  | Commit |  |
|  |  | Write(x, 1); abort |