Transaction Systems
Exercise Session 11

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Today’s Plan

- Admin
- Transaction chopping
- Sample exam questions
- Homework
Admin

- This was the last regular lecture
- Next week: Zentralübung with old exam questions
- Next week: updated list of classes/algorithms you need to know (chapters 8 and 9)
- Send questions and topics you want to practice next week!
Transaction Chopping

- Credits: Dr. Andrey Gubichev, 2013
Transaction chopping

- Split transactions into sub-transactions that run (potentially) concurrently
- Chopping is correct if every execution of the transaction pieces is conflict equivalent to some serial history of original transactions
- Rule 1: precedence from the original schedule is kept
- Rule 2: each piece is executed according to some CC protocol
Transaction Chopping

Consider the following transactions:

- $t_1 = r_1(x) \ w_1(x) \ r_1(y) \ w_1(y)$
- $t_2 = r_2(x)$
- $t_3 = r_3(y) \ w_3(y)$

Try to decompose $t_1$ into three pieces such that the result is a correct chopping.
Transaction Chopping

- Credits: Dr. Andrey Gubichev, 2013
Sample exam questions

- 3 points/minutes
- For the two given schedules list all the classes they belong to from the following list of classes: serial, CSR, VSR, FSR. Every correct class is +1 point, every incorrect class is -1 point.

\[ s = w_1(x) \cdot w_2(x) \cdot c_2 \cdot c_1 \]
Sample exam questions

- 5+5 points/minutes
- For the following schedule give the output schedules produced by two protocols: (a) SS2PL, (b) BTO:
  \[ r_1(x) \; w_2(x) \; r_3(y) \; w_2(y) \; w_3(z) \; c_3 \; r_1(z) \; c_1 \; r_2(z) \; c_2 \]
- What is the protocol (not necessarily mentioned above) that accepts this schedule as is (without delaying or aborting anything)?
Sample exam questions

- 5 points/minutes
- Give an example of a schedule that is strict but cannot be generated by Strict 2PL (S2PL).
Sample exam questions

- 5 points/minutes
- Describe the transactional workloads for which FOCC will provide the best throughput (among all page model protocols). Give a short explanation.
Already uploaded to our website.

Everyone with 82% or less is in danger of losing the bonus by not submitting this homework. I will make sure that no one ends just short of the required 75%!