

UNIVERSITY OF CALIFORNIA  
EECS, Computer Science Division  
CS 186, Fall 2008

**Written Homework 2: Crash Recovery and Database Design  
Answer Sheet**

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NAME: \_\_\_\_\_ STUDENT ID: \_\_\_\_\_  
COURSE ACCOUNT (cs186-\*\*): \_\_\_\_\_

1.

**Dirty Page Table:**

PID	RecLSN

**Transaction Table:**

XID	State	LastLSN

2. a) What pages? \_\_\_\_\_

b) When can T2 release the locks? After the update described by LSN \_\_\_\_\_

3. a) Which log records? \_\_\_\_\_

b) **Dirty Page Table:**

PID	RecLSN

**Transaction Table:**

XID	State	LastLSN

4. a) Which log records? \_\_\_\_\_  
 b) Explain your choice of the oldest log record: \_\_\_\_\_

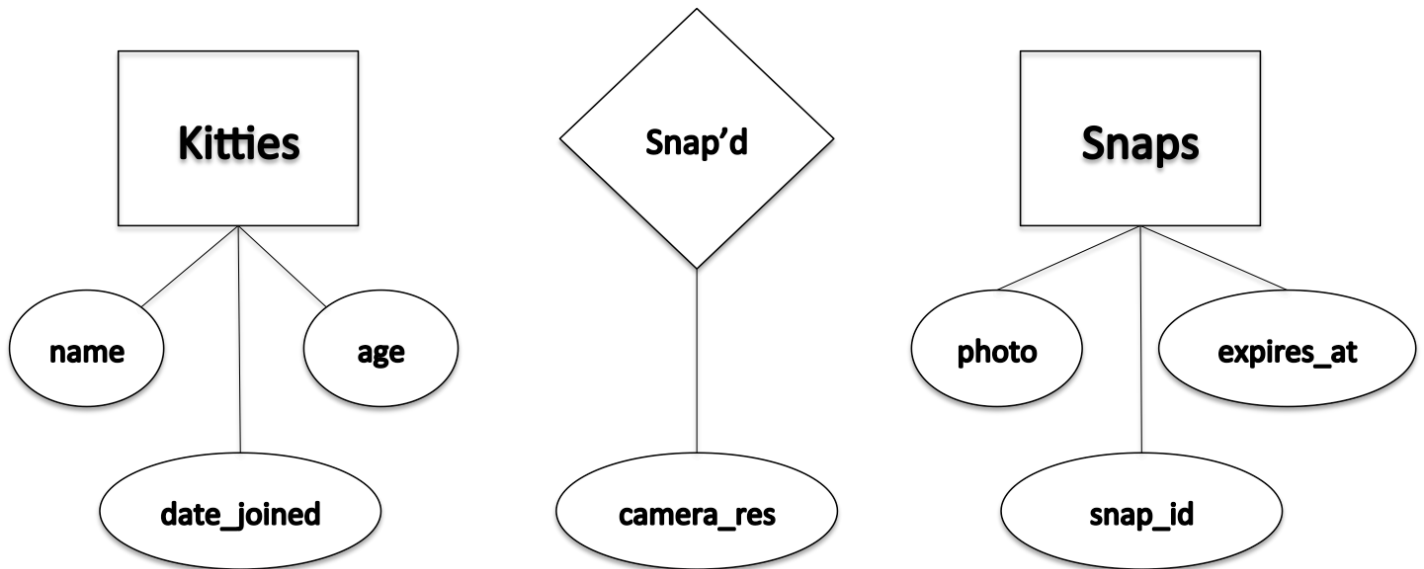
- c) Which data pages? \_\_\_\_\_  
 d) Which operations? LSNs \_\_\_\_\_

5. a) Which log records? \_\_\_\_\_  
 b) Explain your choice of the oldest log record: \_\_\_\_\_

- c) Which operations? LSNs \_\_\_\_\_  
 d) New Log Records:

LSN	Log Record	PrevLSN	UndoNextLSN

6.



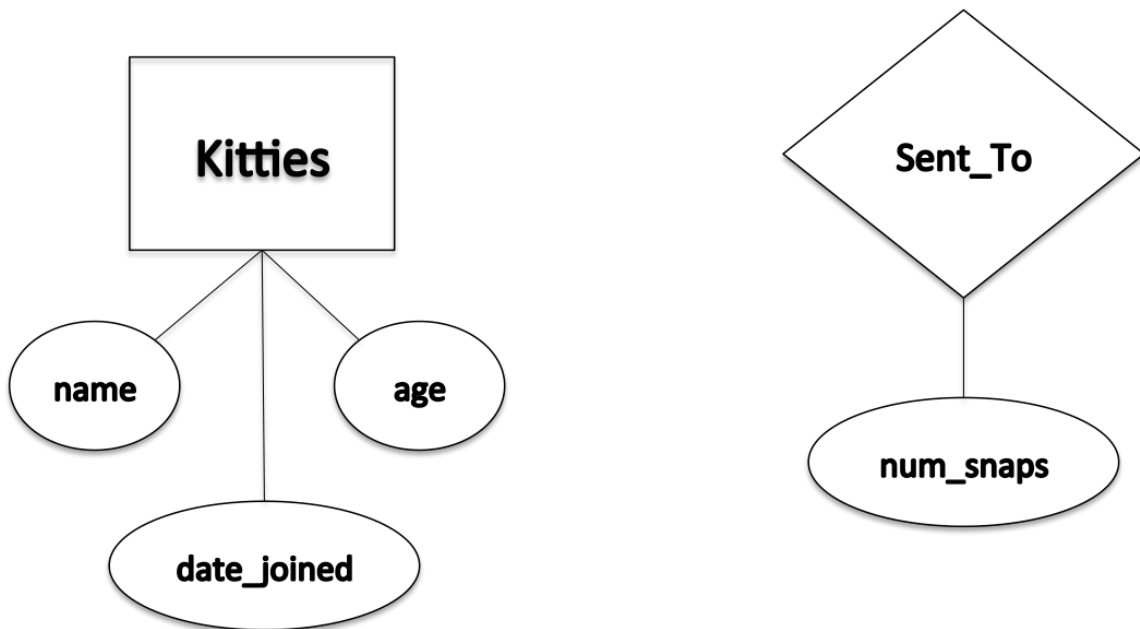
7. CREATE TABLE Kitties (  
 \_\_\_\_\_,  
 \_\_\_\_\_,  
 \_\_\_\_\_,  
 PRIMARY KEY ( \_\_\_\_\_ )  
 );

```

CREATE TABLE Snapd (
    _____,
    _____,
    _____,
    _____,
    PRIMARY KEY ( _____ ),
    FOREIGN KEY ( _____ ) REFERENCES _____,
    FOREIGN KEY ( _____ ) REFERENCES _____
);

```

8.



9. CREATE TABLE Sent\_To (

```

    _____,
    _____,
    _____,
    _____,
    _____,
    PRIMARY KEY ( _____ ),
    FOREIGN KEY ( _____ ) REFERENCES _____,
    FOREIGN KEY ( _____ ) REFERENCES _____
);

```

10. One or more of A, B, C, D, or E: \_\_\_\_\_