

Indexing

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1 Basic Index Tasks

Q1:

```
SELECT customer_id, payment_id FROM payment  
WHERE amount = 11.99
```

Display Q1's query plan and explain what kind of algorithm is used to process the query. Create `idx_payment_amount` index that will be used by this query. Show the index usage on a query plan.

Q2:

```
SELECT customer_id, payment_id FROM payment  
WHERE amount = 10.99
```

Can you guess why the index is not used by query Q2? Create a covering index that will be used despite the value of the predicate.

2 SARGable Predicates

Q3:

```
SELECT customer_id, payment_id FROM payment
WHERE amount * 2 BETWEEN 20 AND 25
```

Why Q3's query plan does not use the covering index correctly? What is necessary to change if we want to see an index seek operator in the query plan?

Q4:

```
SELECT film_id, title FROM film
WHERE SUBSTRING(title, 1, 2) = 'AC'
```

Try to rewrite the Q4 and create appropriate covering index.

3 Covering Indexes (again)

Q5:

```
SELECT customer_id, rental_date, return_date
FROM rental r
WHERE customer_id = 107 and return_date >= '2005-08-04'
and return_date <= '2005-08-05'
```

Q6:

```
SELECT customer_id, rental_date
FROM rental r
WHERE return_date >= '2005-10-01' and return_date <= '2005-10-31'
```

Try to create one covering index that will be used in both SQL commands.