CSE 311L(Database Management System)

LAB-Week 05 (Part A)

Topics:

- Indexing
- Functions
- CASE

REVISIT EMPLOYEE TABLE

```
CREATE TABLE `employees` (
 `id` INT(11) PRIMARY KEY AUTO_INCREMENT,
 `fname` VARCHAR(20) DEFAULT NULL,
 `lname` VARCHAR(20) NOT NULL,
 `email` VARCHAR(30) NOT NULL,
 `phone` VARCHAR(20) DEFAULT NULL,
 `hire_date` DATE NOT NULL,
 `job_id` VARCHAR(20) NOT NULL,
 `salary` DECIMAL(10 , 2 ) DEFAULT NULL,
 `commission_pct` DECIMAL(4 , 2 ) DEFAULT NULL,
 `manager_id` INT(11) DEFAULT NULL,
 `dept_id` INT(11) DEFAULT NULL,
 `created_at` TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP (),
 `updated_at` TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP ()
ON UPDATE CURRENT_TIMESTAMP (),
 FOREIGN KEY (dept_id)
 REFERENCES departments (id)
ON DELETE CASCADE
ON UPDATE CASCADE,
 UNIQUE (email),
 CONSTRAINT uinque_person UNIQUE (fname , lname , phone),
 INDEX (job_id , manager_id)
);


SHOW INDEXES FROM employees;

CREATE INDEX job_idx ON employees(job_id,manager_id);

CREATE UNIQUE INDEX idx_name_phone
ON employees(fname,lname,phone);

EXPLAIN select * from employees where job_id = 'IT_PROG';

SHOW INDEXES FROM employees;

DROP INDEX email ON employees;
```

Functions:

```
SELECT TRIM(fname) from employees;

SELECT upper(fname) from employees;
SELECT ucase(fname) from employees;

SELECT lower(fname) from employees;
SELECT lcase(fname) from employees;

SELECT lname as name,
CONCAT('$', FORMAT(salary * 12, 2)) as 'Annual Salary'
FROM employees;
```

AGGRIGATE FUNCTION

```
SELECT GROUP_CONCAT(distinct job_id)
FROM employees;
```

Comparison Functions

```
SELECT id, salary, COALESCE(commission_pct, 'N/A'), job_id
FROM employees;

SELECT * FROM employees WHERE ISNULL(dept_id);

SELECT id, IFNULL(phone, email) contact
FROM employees;

SELECT SUM(IF(job_id = 'IT_PROG',1,0)) /
 NULLIF( SUM(IF(job_id = 'SA_MAN',1,0)),0)
FROM employees
WHERE hire_date BETWEEN '2006-01-01' and '2009-12-31';
```

CASE expression

```
SELECT
 id,
 job_id,
 (CASE
 WHEN salary > 10000 THEN 'HIGH_INCOME'
 WHEN salary >= 5000 THEN 'MIDDLE_INCOME'
 ELSE 'LOW_INCOME'
 END) AS salary_status
FROM
 Employees;
```