



# CS 4400

# GROUP 37

Phase 2

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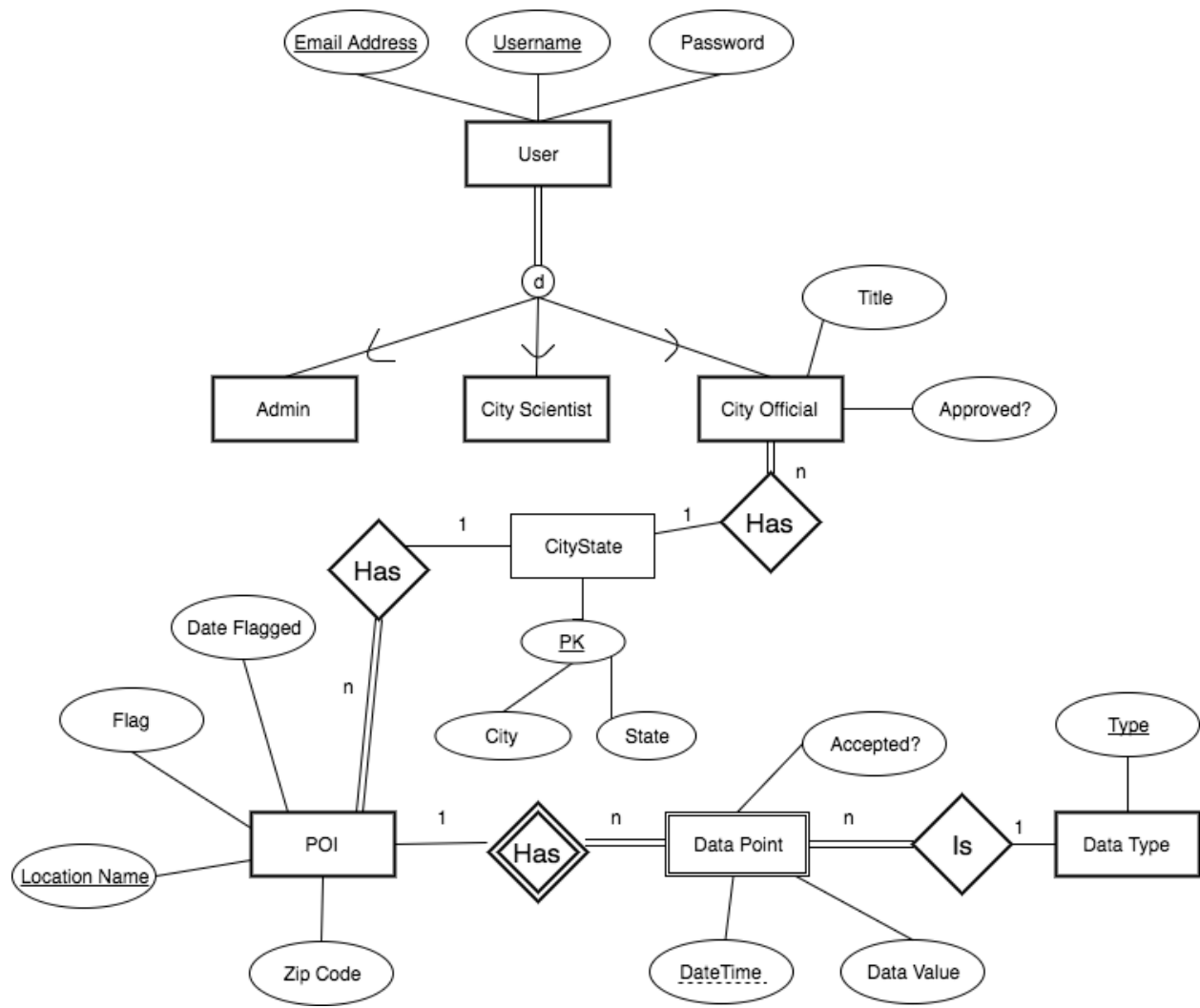
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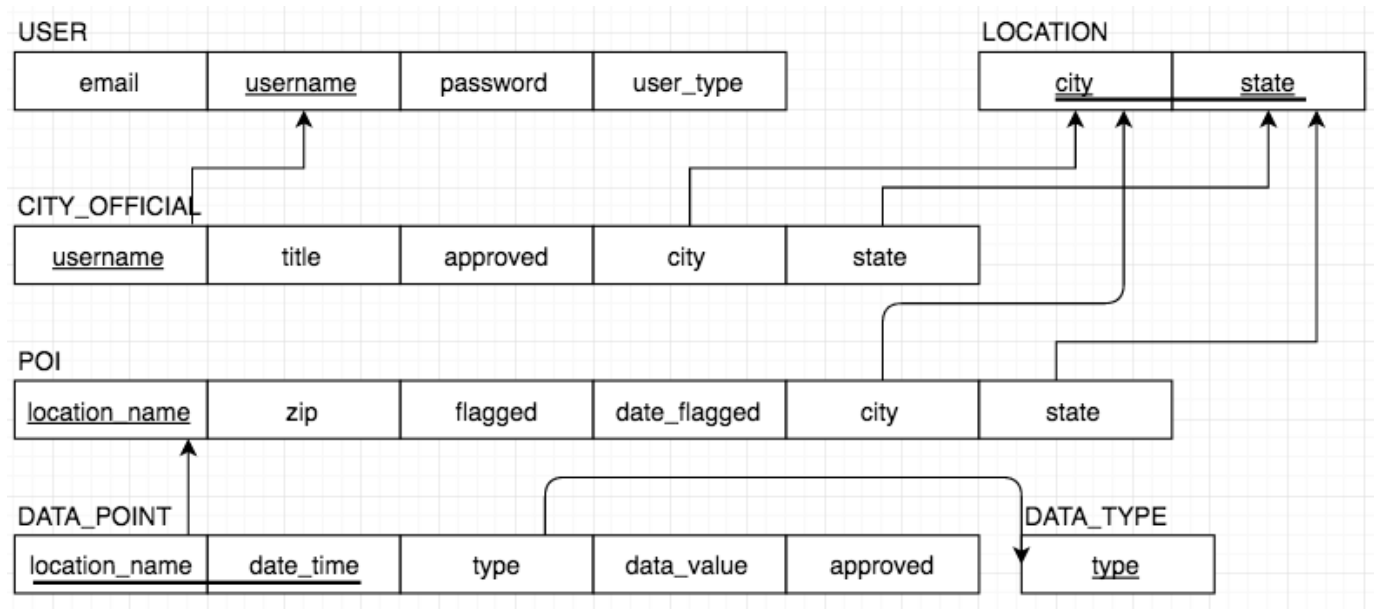
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EER Diagram:



Relational Schema Diagram:



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### SQL Statements:

```
CREATE TABLE `cs4400_37`.`LOCATION`  
(`city` VARCHAR( 100 ) NOT NULL ,  
`state` CHAR( 2 ) NOT NULL ,  
CONSTRAINT PK_LOCATION PRIMARY KEY (`city`,`state`));
```

```
CREATE TABLE `cs4400_37`.`DATA_TYPE`  
(`type` VARCHAR( 100 ) NOT NULL ,  
PRIMARY KEY (`type`));
```

```
CREATE TABLE `cs4400_37`.`USER`  
(`email` VARCHAR( 100 ) NOT NULL ,  
`username` VARCHAR( 100 ) NOT NULL ,  
`password` VARCHAR( 100 ) NOT NULL ,  
`user_type` ENUM( 'admin', 'city_scientist', 'city_official' ) NOT NULL ,  
PRIMARY KEY ( `username` ),  
UNIQUE ( `email` ));
```

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```
CREATE TABLE `cs4400_37`.`CITY_OFFICIAL`  
(`username` VARCHAR( 100 ) NOT NULL ,  
`title` VARCHAR( 100 ) NOT NULL ,  
`approved` BOOL NOT NULL DEFAULT 0,  
`city` VARCHAR( 100 ) NOT NULL ,  
`state` CHAR( 2 ) NOT NULL ,  
PRIMARY KEY ( `username` ),  
FOREIGN KEY (`username`) REFERENCES `USER` (`username`)  
    ON DELETE CASCADE ON UPDATE CASCADE,  
FOREIGN KEY (`city`, `state`) REFERENCES `LOCATION` (`city`, `state`)  
    ON DELETE CASCADE ON UPDATE CASCADE);
```

```
CREATE TABLE `cs4400_37`.`POI`  
(`location_name` VARCHAR( 100 ) NOT NULL ,  
`zip` CHAR( 5 ) NOT NULL ,  
`flagged` BOOL NOT NULL DEFAULT 0,  
`date_flagged` DATE DEFAULT NULL,  
`city` VARCHAR( 100 ) NOT NULL ,  
`state` CHAR( 2 ) NOT NULL ,  
PRIMARY KEY ( `location_name` ),  
FOREIGN KEY (`city`, `state`) REFERENCES `LOCATION` (`city`, `state`)  
    ON DELETE CASCADE ON UPDATE CASCADE);
```

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```
CREATE TABLE `cs4400_37`.`DATA_POINT`  
(`location_name` VARCHAR( 100 ) NOT NULL ,  
`date_time` TIMESTAMP NOT NULL ,  
`type` VARCHAR(100) NOT NULL ,  
`data_value` INTEGER NOT NULL,  
`approved` BOOL NOT NULL DEFAULT 0,  
CONSTRAINT PK_DATA_POINT PRIMARY KEY ( `location_name`, `date_time` ),  
FOREIGN KEY (`location_name`) REFERENCES `POI` (`location_name`)  
ON DELETE CASCADE ON UPDATE CASCADE,  
FOREIGN KEY (`type`) REFERENCES `DATA_TYPE` (`type`)  
ON DELETE CASCADE ON UPDATE CASCADE);
```

### SQL Assumptions:

- City Official attribute **Approved** is a Boolean attribute set to **DEFAULT** as FALSE (i.e. “pending”). The value TRUE would mean the City Official is “approved”. If the City Official is ever denied registration or fired, then we assume that it will be deleted from the database.
- In the application, any **State** attribute will follow the abbreviated state name format “XX” (i.e. “GA”, “FL”). For that reason we defined the domain **CONSTRAINT** as Char(2).