



# **CASE STUDY**

Pet Sitter Response Tracking System (PSIRT) is a system that keeps a record of services provided for dogs and cats. When a pet sitter service is requested, it is assigned a unique identifier and stored in a database. For each service, the system keeps track of the order number, the type of order (chosen from a list that may change dynamically), the date it was created, the service state (which can be 'pending,' 'assigned,' or 'completed'), and a list of free-form comments. Each comment is associated with the name of the responders who wrote it.

In addition, each order could be any number of people (last name, first name, role, phone, email address) and IP addresses. The pet sitter service responders can easily query the database by order number and get a detailed report of the entire history of a given service.

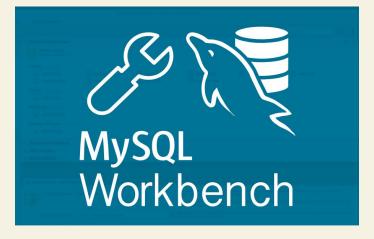
The PSIRT system has three types of responders: clients, sitters, and handlers. Clients create and manage requests, and they can also add comments to the service. Handlers recommend pet sitters to clients, who can either accept or deny service requests. Once a service is accepted, the order status is updated to "Assigned," and the sitter gains access to the client's contact information to add a service report. After the service is completed, the sitter updates the order status, and the client confirms it again. The order status then changes to "Completed," and the order is archived.

Free-form comments must be sorted from the most recent post on top to the oldest on the bottom.

All updates to a pet sitter service log are recorded as free-form comments on the order. And, it is important to note that all system use is subject to authentication via an external single sign-on system.



### **Tools used**

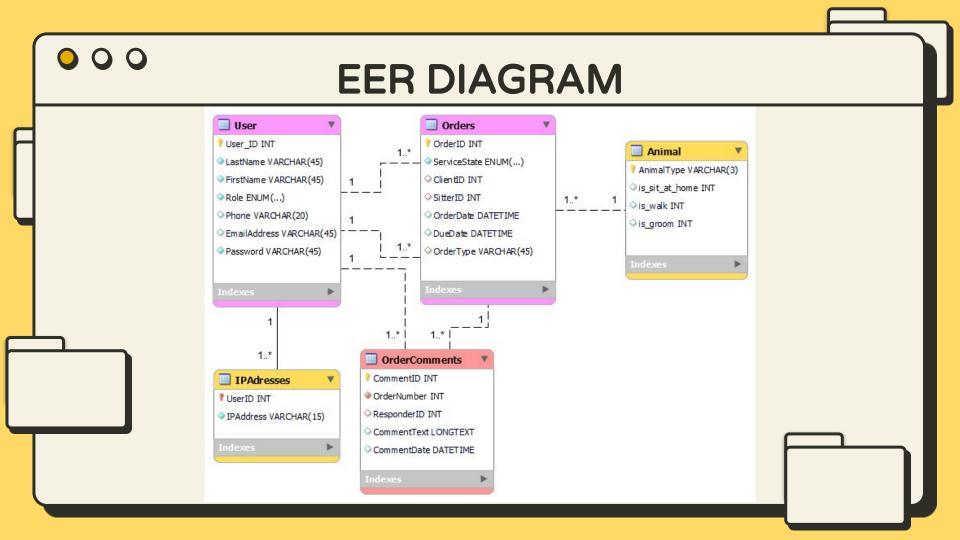








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UNF UserID	Last name	First name	Role	Phone	Email address	Password	OrderID	ServiceState	ClientID	HandlerID	SitterID	Order Date	Due Date	CommentiD	Order Number	Responder ID	Comment Text	Comment Date	User ID	Ip address	OrderiD	Animal Type	is_sit_at_home is_	walk is	is_groom
1NF UserID	Last name	First name	Role	Phone	Email address	Password	OrderiD	ServiceState	ClientID	HandleriD	SitterID	Order Date	Due Date	CommentiD	Responder ID	Comment Text	Comment Date	lp address	Animal Type	is_sit_at_home	is_walk	is_groom			
2NF User table																									
Order table OrderID	Last name ServiceState	First name  ClientiD	Role	Phone SitterID	Email address Order date	Password  Due date																			
Comment table CommentID	OrderiD	UserID	Comment text	Comment date																					
UserIP table UserID Animal table	lp address																								
OrderID 3NF	Animal Type	is_sit_at_home	is_walk	is_groom																					
User table UserID	Last name	First name	Role	Phone	Email address	Password																			
Order table OrderID  Comment table	ServiceState	ClientID	HandlerID	SitterID	Order date	Due date																			
UserIP table UserID	OrderID  Ip address	UserID	Comment text	Comment date																					
Animal table OrderID		is_sit_at_home	is_walk	is_groom																					





## User table

```
MariaDB [PSIRT]> DESCRIBE User;
 Field
               | Type
                                                     Null | Key | Default | Extra
 UserID
                int(11)
                                                             PRI |
                                                                   NULL
                                                                             auto_increment
                                                      NO
 LastName
                 varchar(45)
                                                      NO
                                                                   NULL
               | varchar(45)
 FirstName
                                                      NO
                                                                   NULL
 Role
                 enum('client','sitter','handler')
                                                      NO
                                                                   NULL
 Phone
               | varchar(20)
                                                      YES
                                                                   NULL
 EmailAddress | varchar(45)
                                                      YES
                                                                   NULL
  Password
               | varchar(45)
                                                      N0
                                                                   NULL
```

7 rows in set (0.007 sec)



#### IP addresses table



# **Orders**

```
MariaDB [PSIRT]> DESCRIBE Orders;
 Field
                 Type
                                                          Null | Key | Default | Extra
 OrderID
                 int(11)
                                                          N0
                                                                  PRI | NULL
                                                                                  auto_increment
  ServiceState
                 enum('pending','assigned','completed')
                                                           N0
                                                                        pending
 ClientID
                 int(11)
                                                           YES
                                                                  MUL |
                                                                        NULL
 SitterID
                 int(11)
                                                           YES
                                                                  MUL
                                                                        NULL
  OrderDate
                 datetime
                                                           YES
                                                                        NULL
                 datetime
                                                           YES
  DueDate
                                                                        NULL
```

7 rows in set (0.005 sec)

# 000

# Animal => Dog/Cat

```
MariaDB [PSIRT]> DESCRIBE ANIMAL;
  Field
                   Type
                                | Null | Key | Default |
                                                          Extra
  OrderID
                    int(11)
                                               NULL
                                I NO
                                         PRI
  AnimalType
                  | varchar(3)
                                               NULL
                                 N0
  is_sit_at_home |
                    int(11)
                                  YES
                                                0
  is walk
                    int(11)
                                  YES
                                                0
                    int(11)
  is_groom
                                  YES
```

5 rows in set (0.012 sec)



### **Order Comments**

```
MariaDB [PSIRT] > DESCRIBE Order Comments;
 Field
            Extra
 CommentID | int(11) | NO
                             PRI
                                  NULL
                                                     auto_increment
 OrderNumber | int(11)
                    | NO | MUL
                                  NULL
 ResponderID | int(11)
                      | YES | MUL
                                  NULL
 CommentText | longtext
                       YES |
                                  NULL
 CommentDate | datetime
                       YES |
                              | current_timestamp()
5 rows in set (0.004 sec)
```



## **IP Address retrieval**

```
// Get the user's IP address (IPv4)
$userIP = getHostByName(getHostName());

// Extract IPv4 address if it's IPv6-mapped IPv4 address
if (filter_var($userIP, FILTER_VALIDATE_IP, FILTER_FLAG_IPV6)) {
    $userIP = trim(shell_exec("host -t A " . escapeshellarg($userIP)));
    $userIP = substr($userIP, strrpos($userIP, ' ') + 1);
}
```



# Session flush for safety

```
<?php
if ($_SERVER["REQUEST_METHOD"] == "POST" && isset($_POST['signOut'])) {
   // Unset all session variables
   $_SESSION = array();
   // Destroy the session
   session_destroy();
   // Redirect to the login page
   header("Location: ../../mainPage.html");
   exit();
```

