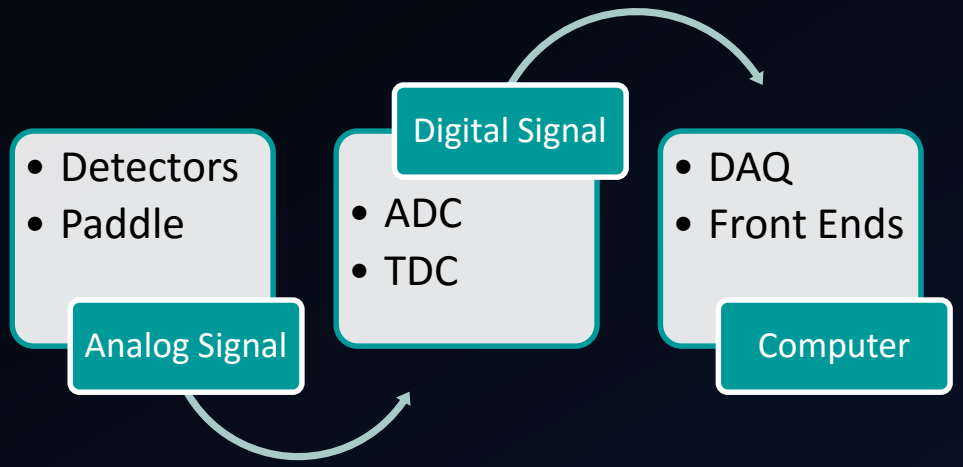
# Inquiries with SQL

## SETTING UP A RUNS DATABASE

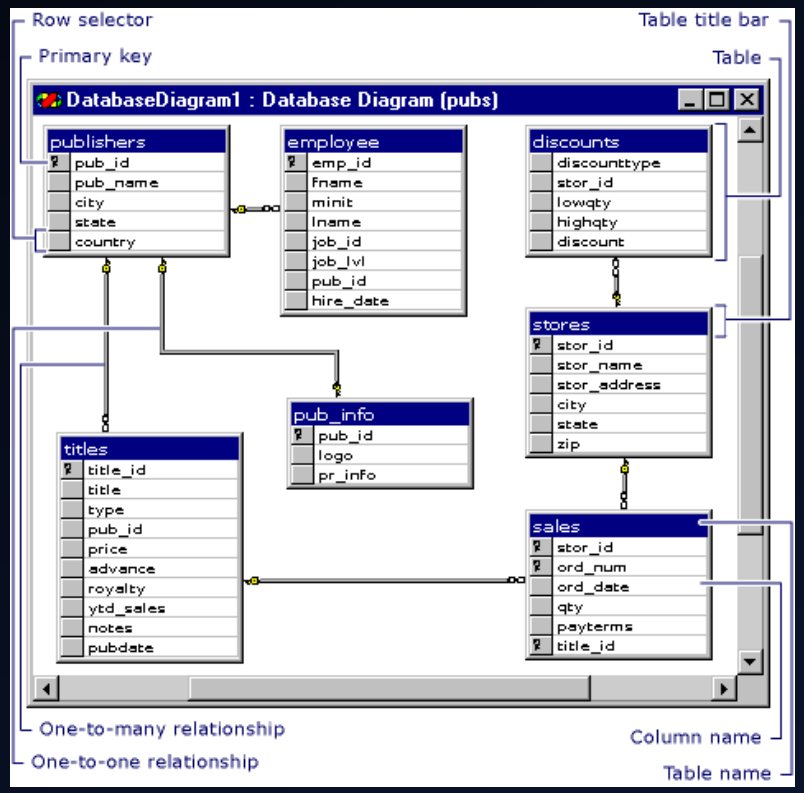
AMIRA MALIK
HINSDALE SOUTH

# DATA ACQUISITION

- Hardware Quantifies Data
  - Sensors
  - Computers
  - Measurements
- Physical -> Digital




# DATABASES




- Organized and Present
- Ability to Recall

# Why A Database?

| Name | Data |
|---|---|
| T001 | Yes |
| T002 | Yes |
| T003 | Yes |
| T004 | Yes |
| T005 | Yes |

Vs

| Name | Y/N | Start Time | Number | Errors |
|---|---|---|---|---|
| T001 | Y | 08:16 | 2 | #11-17 |
| T002 | N | 21:02 | 6 | None |
| T003 | N | 22:00 | 7 | None |
| T004 | Y | 3:14 | 1 | #24-19 |
| T005 | Y | 15:03 | 4 | None |
| T006 | Y | 12:56 | 3 | #04-6 |
| T007 | N | 17:46 | 5 | None |

# Why A Database?

```sql
USE cars;
CREATE TABLE store (id INTEGER PRIMARY KEY, color TEXT,
        make TEXT, quantity TEXT, price INTEGER);
INSERT INTO store VALUES(1, "Red", "Yaris", 2, 20000);
INSERT INTO store VALUES(2, "Grey", "Jetta", 1, 8000);
INSERT INTO store VALUES(3, "Blue", "Elise", 0, 45000);
INSERT INTO store VALUES(4, "Green", "Cabrio", 3, 4000);
INSERT INTO store VALUES(5, "Pink", "Expedition", 2, 23000);
INSERT INTO store VALUES(6, "Green", "Avalon", 3, 5500);
INSERT INTO store VALUES(7, "Grey", "Mercedes", 5, 37000);
INSERT INTO store VALUES(8, "Grey", "Sportage", 1, 25000);
INSERT INTO store VALUES(9, "Black", "Accord", 1, 13000);
INSERT INTO store VALUES(10, "White", "Liberty", 1, 14000);
INSERT INTO store VALUES(11, "White", "Accord", 1, 25000);
INSERT INTO store VALUES(12, "Grey", "MPV", 1, 8000);
INSERT INTO store VALUES(13, "White", "MPV", 1, 9000);
INSERT INTO store VALUES(14, "Red", "Corolla", 1, 12000);
INSERT INTO store VALUES(15, "Red", "Ferrari", 2, 120000);

SELECT * FROM store;
```

| id | color | make | quantity | price |
|---|---|---|---|---|
| 1 | Red | Yaris | 2 | 20000 |
| 2 | Grey | Jetta | 1 | 8000 |
| 3 | Blue | Elise | 0 | 45000 |
| 4 | Green | Cabrio | 3 | 4000 |
| 5 | Pink | Expedition | 2 | 23000 |
| 6 | Green | Avalon | 3 | 5500 |
| 7 | Grey | Mercedes | 5 | 37000 |
| 8 | Grey | Sportage | 1 | 25000 |
| 9 | Black | Accord | 1 | 13000 |
| 10 | White | Liberty | 1 | 14000 |
| 11 | White | Accord | 1 | 25000 |
| 12 | Grey | MPV | 1 | 8000 |
| 13 | White | MPV | 1 | 9000 |
| 14 | Red | Corolla | 1 | 12000 |
| 15 | Red | Ferrari | 2 | 120000 |

# Why A Database?

| customerNumber | customerName | contactLastNam | contactFirstName | phone | addressLine1 | addressLine2 | city | state | postalCode | country | creditLimit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 144 | Volvo Model Replicas, Co | Berglund | Christina | 0921-12 3555 | Berguvsvägen 8 | | Luleå | | S-958 22 | Sweden | 53100 |
| 145 | Danish Wholesale Imports | Petersen | Jytte | 31 12 3555 | Vinbæltet 34 | | Kobenhavn | | 1734 | Denmark | 83400 |
| 146 | Saveley & Henriot, Co. | Saveley | Mary | 78.32.5555 | 2, rue du Commerce | | Lyon | | 69004 | France | 123900 |
| 148 | Dragon Souveniers, Ltd. | Natividad | Eric | +65 221 7555 | Bronz Sok. | Bronz Apt. 3/6 Tesvikiye | Singapore | | 079903 | Singapore | 103800 |
| 151 | Muscle Machine Inc | Young | Jeff | 2125557413 | 4092 Furth Circle | Suite 400 | NYC | NY | 10022 | USA | 138500 |
| 157 | Diecast Classics Inc. | Leong | Kelvin | 2155551555 | 7586 Pompton St. | | Allentown | PA | 70267 | USA | 100600 |
| 161 | Technics Stores Inc. | Hashimoto | Juri | 6505556809 | 9408 Furth Circle | | Burlingame | CA | 94217 | USA | 84600 |
| 166 | Handji Gifts& Co | Victorino | Wendy | +65 224 1555 | 106 Linden Road Sandown | 2nd Floor | Singapore | | 069045 | Singapore | 97900 |
| 167 | Herkku Gifts | Oeztan | Veysel | +47 2267 3215 | Brehmen St. 121 | PR 334 Sentrum | Bergen | | N 5804 | Norway | 96800 |
| 168 | American Souvenirs Inc | Franco | Keith | 2035557845 | 149 Spinnaker Dr. | Suite 101 | New Haven | CT | 97823 | USA | 0 |
| 169 | Porto Imports Co. | de Castro | Isabel | (1) 356-5555 | Estrada da saúde n. 58 | | Lisboa | | 1756 | Portugal | 0 |
| 171 | Daedalus Designs Imports | Rancé | Martine | 20.16.1555 | 184, chaussée de Tournai | | Lille | | 59000 | France | 82900 |
| 172 | La Corne D'abondance, Co. | Bertrand | Marie | (1) 42.34.2555 | 265, boulevard Charonne | | Paris | | 75012 | France | 84300 |
| 173 | Cambridge Collectables Co. | Tseng | Jerry | 6175555555 | 4658 Baden Av. | | Cambridge | MA | 51247 | USA | 43400 |
| 175 | Gift Depot Inc. | King | Julie | 2035552570 | 25593 South Bay Ln. | | Bridgewater | CT | 97562 | USA | 84300 |
| 177 | Osaka Souveniers Co. | Kentary | Mory | +81 06 6342 5555 | 1-6-20 Dojima | | Kita-ku | Osaka | 530-0003 | Japan | 81200 |
| 181 | Vitachrome Inc. | Frick | Michael | 2125551500 | 2678 Kingston Rd. | Suite 101 | NYC | NY | 10022 | USA | 76400 |
| 186 | Toys of Finland, Co. | Karttunen | Matti | 90-224 8555 | Keskuskatu 45 | | Helsinki | | 21240 | Finland | 96500 |
| 187 | AV Stores, Co. | Ashworth | Rachel | (171) 555-1555 | Fauntleroy Circus | | Manchester | | EC2 5NT | UK | 136800 |
| 189 | Clover Collections, Co. | Cassidy | Dean | +353 1862 1555 | 25 Maiden Lane | Floor No. 4 | Dublin | | 2 | Ireland | 69400 |
| 198 | Auto-Moto Classics Inc. | Taylor | Leslie | 6175558428 | 16780 Pompton St. | | Brickhaven | MA | 58339 | USA | 23000 |
| 201 | UK Collectables, Ltd. | Devon | Elizabeth | (171) 555-2282 | 12, Berkeley Gardens Blvd | | Liverpool | | WX1 6LT | UK | 92700 |
| 202 | Canadian Gift Exchange Network | Tamuri | Yoshi | (604) 555-3392 | 1900 Oak St. | | Vancouver | BC | V3F 2K1 | Canada | 90300 |
| 204 | Online Mini Collectables | Barajas | Miguel | 6175557555 | 7635 Spinnaker Dr. | | Brickhaven | MA | 58339 | USA | 68700 |
| 205 | Toys4GrownUps.com | Young | Julie | 6265557265 | 78934 Hillside Dr. | | Pasadena | CA | 90003 | USA | 90700 |
| 206 | Asian Shopping Network, Co | Walker | Brydey | +612 9411 1555 | Suntec Tower Three | 8 Temasek | Singapore | | 038988 | Singapore | 0 |
| 209 | Mini Caravy | Citeaux | Frédérique | 88.60.1555 | 24, place Kléber | | Strasbourg | | 67000 | France | 53800 |
| 211 | King Kong Collectables, Co. | Gao | Mike | +852 2251 1555 | Bank of China Tower | 1 Garden Road | Central Hong Kon | | | Hong Kong | 58600 |
| 216 | Enaco Distributors | Saavedra | Eduardo | (93) 203 4555 | Rambla de Cataluña, 23 | | Barcelona | | 08022 | Spain | 60300 |
| 219 | Boards & Toys Co. | Young | Mary | 3105552373 | 4097 Douglas Av. | | Glendale | CA | 92561 | USA | 11000 |
| 223 | Natürlich Autos | Kloss | Horst | 0372-555188 | Taucherstraße 10 | | Cunewalde | | 01307 | Germany | 0 |
| 227 | Heintze Collectables | Ibsen | Palle | 86 21 3555 | Smagsloget 45 | | Århus | | 8200 | Denmark | 120800 |
| 233 | Québec Home Shopping Network | Fresnière | Jean | (514) 555-8054 | 43 rue St. Laurent | | Montréal | Québec | H1J 1C3 | Canada | 48700 |
| 237 | ANG Resellers | Camino | Alejandra | (91) 745 6555 | Gran Vía, 1 | | Madrid | | 28001 | Spain | 0 |
| 239 | Collectable Mini Designs Co. | Thompson | Valarie | 7605558146 | 361 Furth Circle | | San Diego | CA | 91217 | USA | 105000 |
| 240 | giftsbymail.co.uk | Bennett | Helen | (198) 555-8888 | Garden House | Crowther Way 23 | Cowes | Isle of Wight | PO31 7PJ | UK | 93900 |
| 242 | Alpha Cognac | Roulet | Annette | 61.77.6555 | 1 rue Alsace-Lorraine | | Toulouse | | 31000 | France | 61100 |

# Why A Database?

```
SELECT SUM(price) FROM store;
```

| SUM(price) |
|---|
| 368500 |

| make | quantity | price |
|---|---|---|
| Elise | 0 | 45000 |
| Jetta | 1 | 8000 |
| Sportage | 1 | 25000 |
| Accord | 1 | 13000 |
| Liberty | 1 | 14000 |
| Accord | 1 | 25000 |
| MPV | 1 | 8000 |
| MPV | 1 | 9000 |
| Corolla | 1 | 12000 |
| Yaris | 2 | 20000 |
| Expedition | 2 | 23000 |
| Ferrari | 2 | 120000 |
| Cabrio | 3 | 4000 |
| Avalon | 3 | 5500 |
| Mercedes | 5 | 37000 |

```
SELECT make, quantity, price
    FROM store ORDER BY quantity;
```

| color | make | ability |
|---|---|---|
| Grey | Jetta | IN RANGE |
| Green | Avalon | IN RANGE |
| Black | Accord | IN RANGE |
| White | Liberty | IN RANGE |
| Grey | MPV | IN RANGE |
| White | MPV | IN RANGE |
| Red | Corolla | IN RANGE |
| Green | Cabrio | TOO CHEAP |
| Red | Yaris | TOO EXPENSIVE |
| Blue | Elise | TOO EXPENSIVE |
| Pink | Exped... | TOO EXPENSIVE |
| Grey | Merce... | TOO EXPENSIVE |
| Grey | Sport... | TOO EXPENSIVE |
| White | Accord | TOO EXPENSIVE |
| Red | Ferrari | TOO EXPENSIVE |

| color | total_colors |
|---|---|
| Blue | 1 |
| Pink | 1 |
| Black | 1 |
| Green | 2 |
| White | 3 |
| Red | 3 |
| Grey | 4 |

```
SELECT color, COUNT(*) AS total_colors
    FROM store GROUP BY color
    ORDER BY total_colors;
```

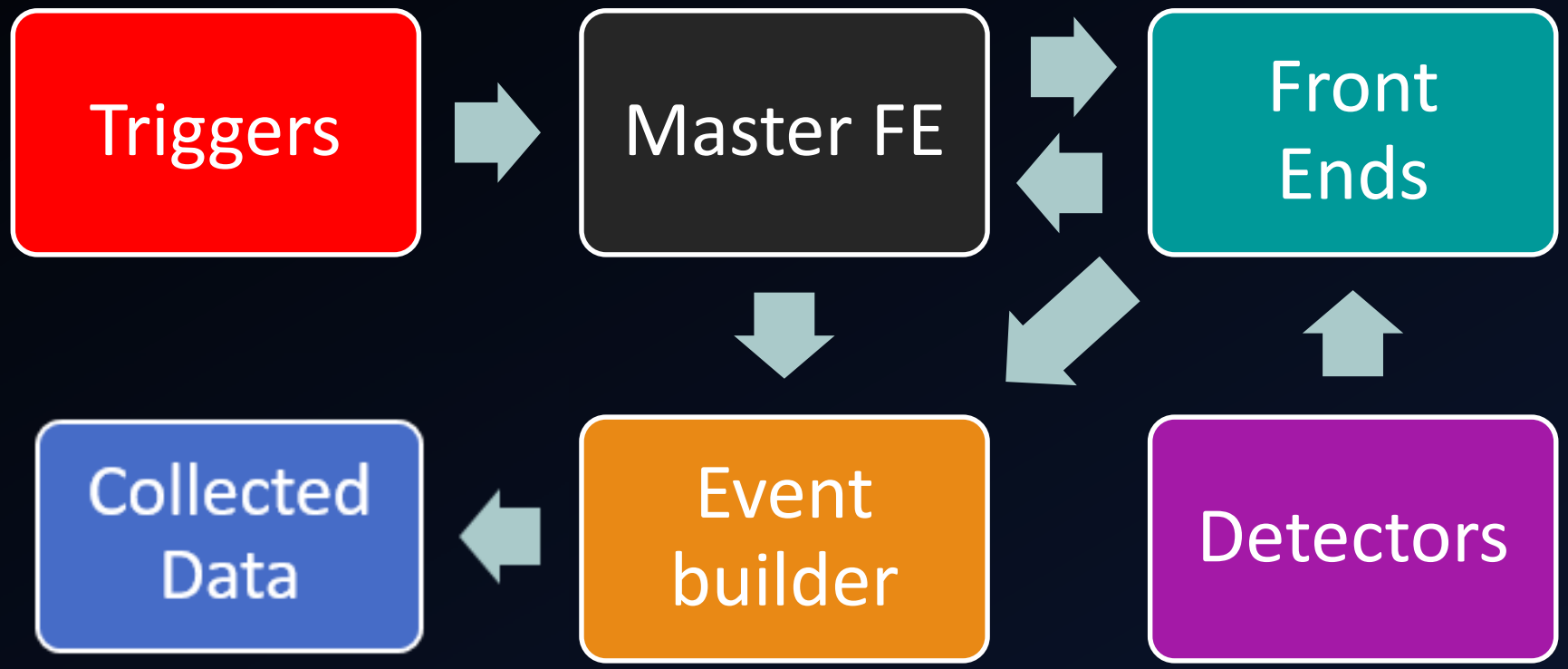
```
SELECT color, make,
    CASE
        WHEN price > 15000 THEN "TOO EXPENSIVE"
        WHEN price > 5000 AND
            price < 15000 THEN "IN RANGE"
        ELSE "TOO CHEAP"
    END "ability"
FROM store
ORDER BY ability
```

MIDAS & SQL

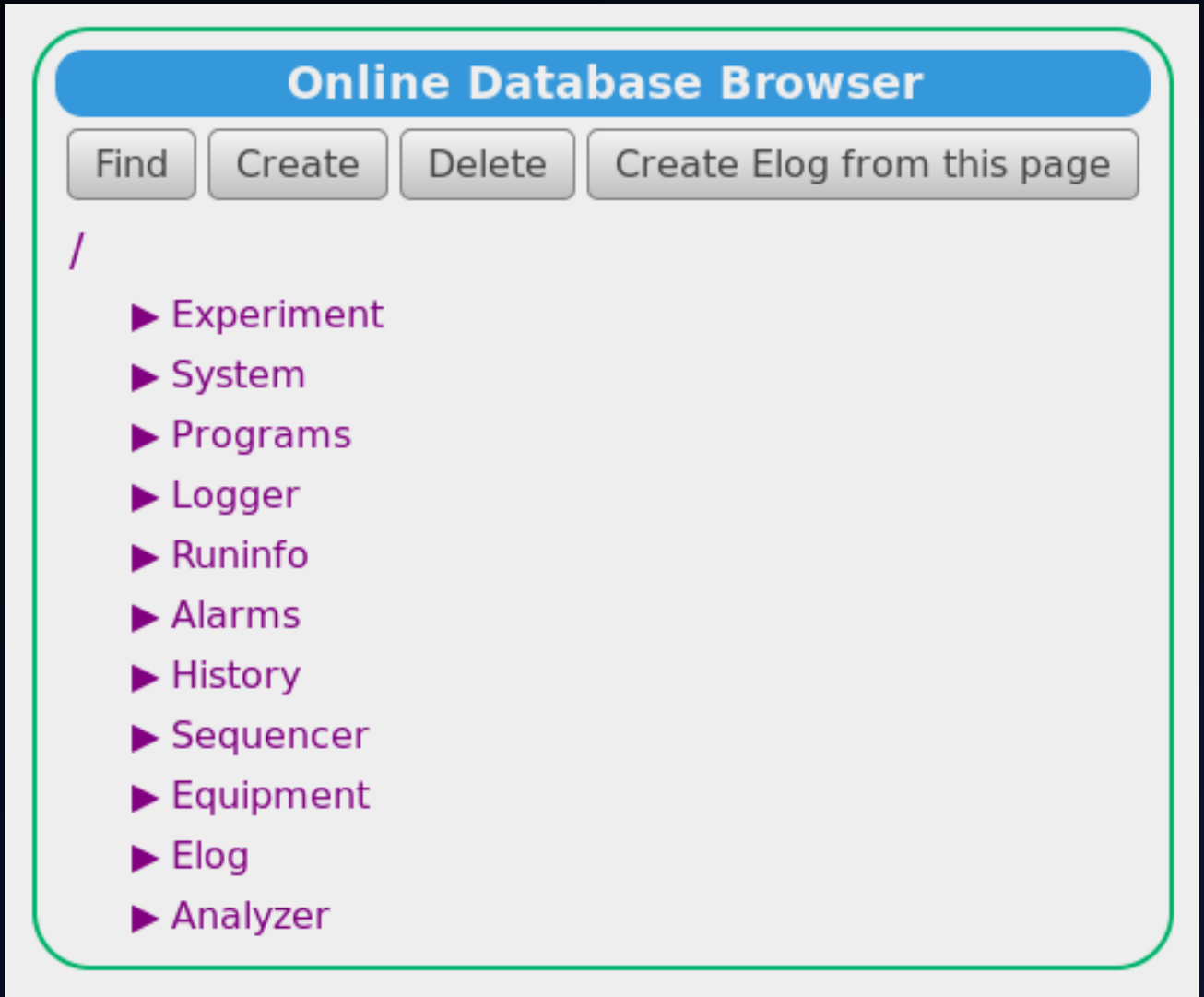
**Maximum Integrated Data Acquisition System**

**Structured Query Language**

# MIDAS & DATA ACQUISITION



# MySQL in MIDAS



# MySQL in MIDAS

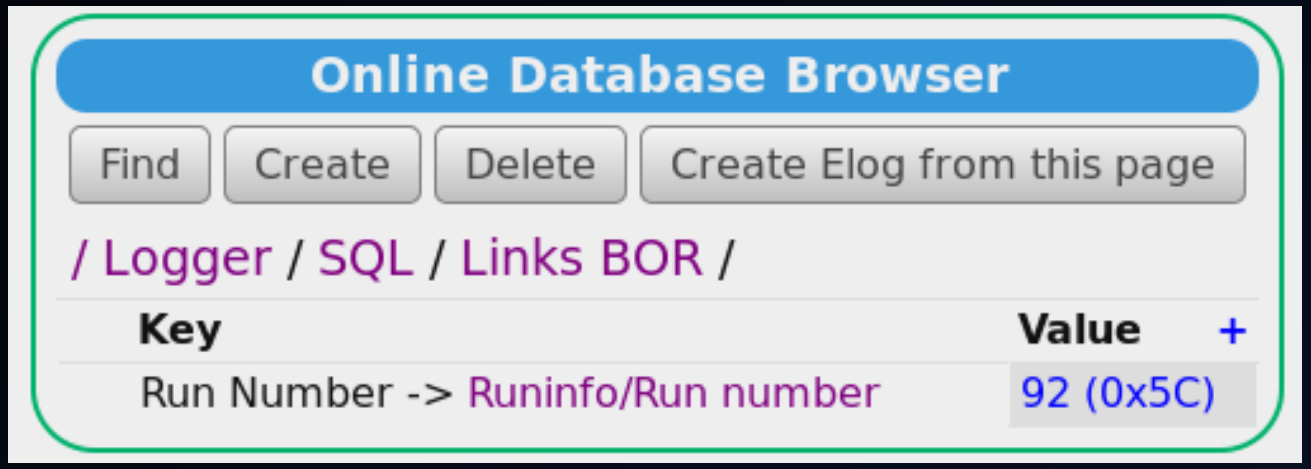
**Online Database Browser**

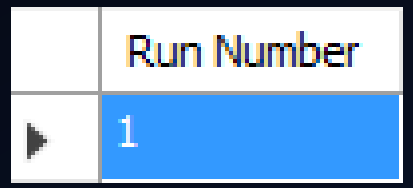
Find | Create | Delete | Create Elog from this page

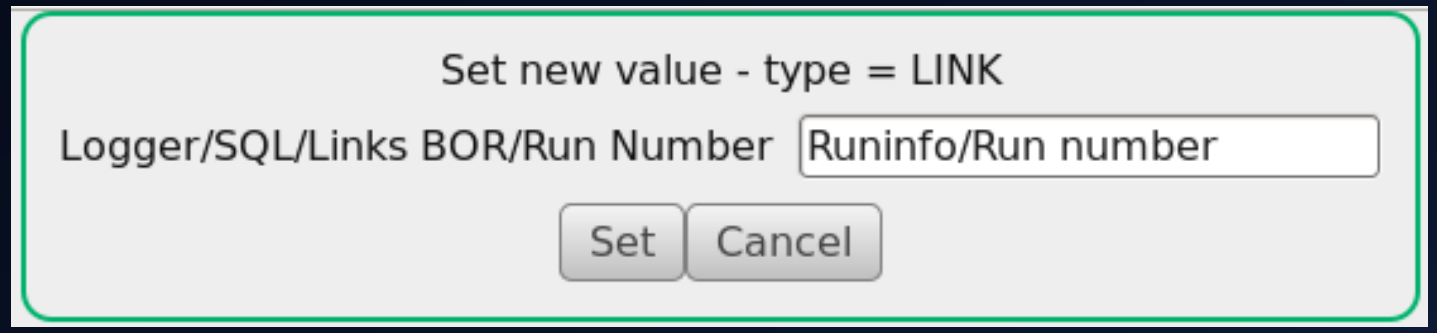
/ Runinfo /

| Key | Value + |
|---|---|
| State | 1 (0x1) |
| Online Mode | 1 (0x1) |
| Run number | 92 (0x5C) |
| Transition in progress | 0 (0x0) |
| Start abort | 0 (0x0) |
| Requested transition | 0 (0x0) |
| Start time | Tue Jul 26 12:27:38 2016 |
| Start time binary | 1469554058 (0x57979D8A) |
| Stop time | Tue Jul 26 12:29:03 2016 |
| Stop time binary | 1469554143 (0x57979DDF) |

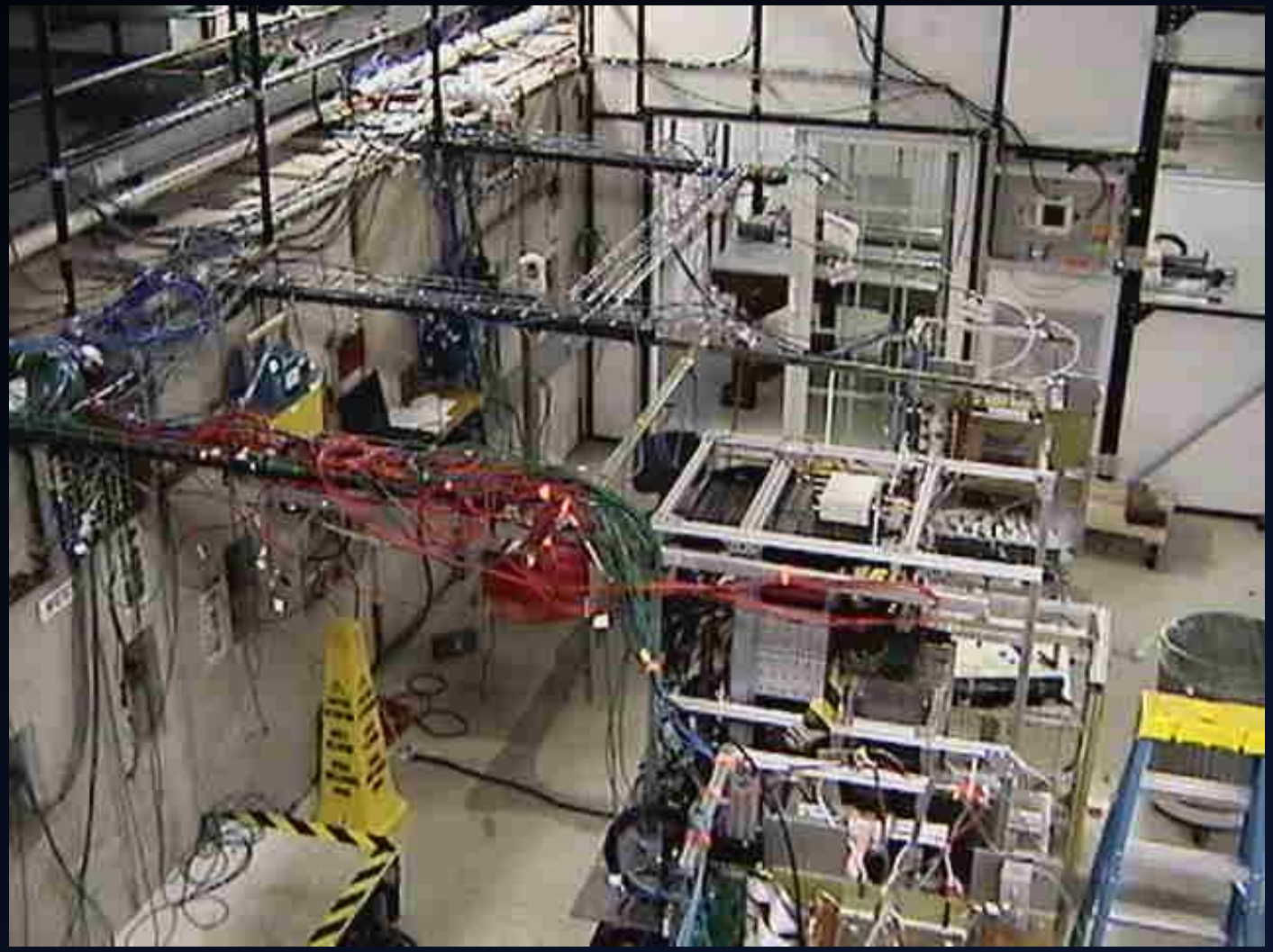
# MySQL in MIDAS



# FTBF Database in the Future



# Acknowledgements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# Disclaimers

- All Logos Belong to Their Respective Owners
- The MySQL interface is property of its respective owners
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