# Project Data Model & DB Design Document

## Project Title: Stock Data Aggregation Web-App

TEAM 34

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# ER-Model

For our Entity-Relationship Model diagram, we used red to represent entities, blue for attributes and green for relationships. As it shown on Figure 1 below.
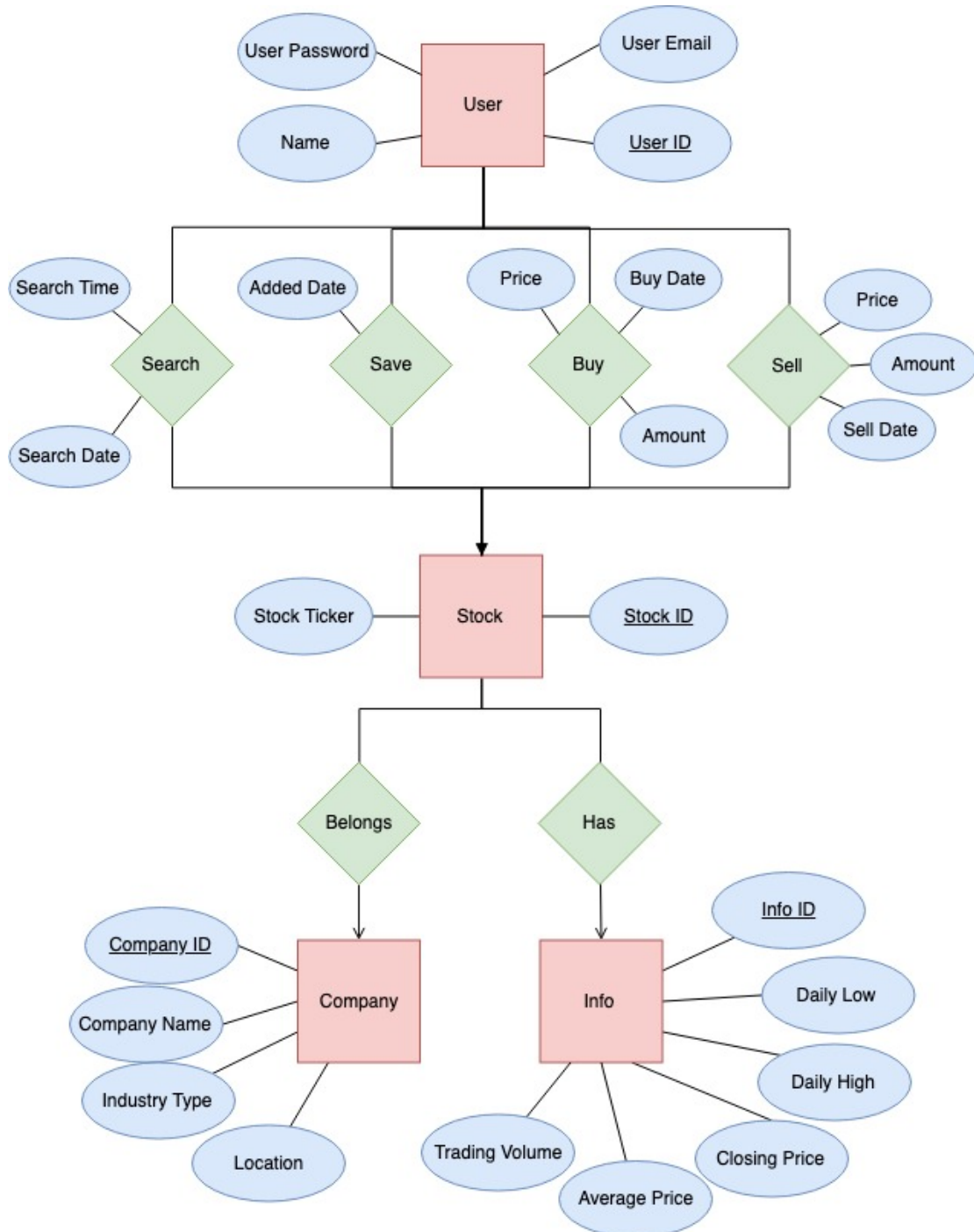
Figure 1. ER-Model

# Table

Table 1) User (UserID, Name, User Email, User Password)

There are many users of our application, and this table is an example of how that information would be stored.

```
[mysql> SELECT * FROM User;
+---------+-----------------+------------------------------+----------------+
| User_id | User_name       | User_email                   | User_password  |
+---------+-----------------+------------------------------+----------------+
|       1 | Ola McReedy     | omcreedy0@hhs.gov            | EUc8BC         |
|       2 | Becka Cairney   | bcairney1@woothemes.com      | zoN0Fy         |
|       3 | Mariele Bisset  | mbisset2@paginegialle.it     | mJBg9WR        |
|       4 | Arlana Favel    | afavel3@ebay.co.uk           | 6UdnLVl4       |
|       5 | Dannye Engledow | dengledow4@nature.com        | DIPvHVKWo      |
|       6 | Virginie Vanshin| vvanshin5@archive.org        | xa1rUDKDReJ    |
|       7 | Nehemiah Oyley  | noyley6@columbia.edu         | ilHH5oBy       |
|       8 | Renee Krollmann | rkrollmann7@reverbnation.com | dJw4LM3        |
|       9 | Durward Gilfillan| dgilfillan8@soundcloud.com  | zTqAEE         |
|      10 | Brianna Baldry  | bbaldry9@chicagotribune.com  | ASpvyDNmwyE    |
|      11 | Andee Lugton    | alugtona@livejournal.com     | ZDfqkr3Su2     |
|      12 | Baxy Chaplyn    | bchaplynb@xrea.com           | DylX69BpNX     |
|      13 | Viviana Becerra | vbecerrac@omniture.com       | gcwc2l         |
|      14 | Tersina Salvidge| tsalvidged@census.gov        | AZG39c         |
|      15 | Bruce Wayne     | brucewayne100@gmail.com      | iamBatMan      |
+---------+-----------------+------------------------------+----------------+
15 rows in set (0.00 sec)
```

Table 2) User Search (StockID, Search Time, Search Date)

From each user's search history list, each stock will have a timestamp of when the user have searched for the search via the search bar.

```
[mysql> SELECT * FROM User_search;
+--------+--------------------------------------+-------------+-------------+
| Search | Stock_id                             | Search_time | Search_date |
+--------+--------------------------------------+-------------+-------------+
|      1 | f5d888f1-3f8e-4e9c-b42c-ccda8ab2e7ec | 19:08       | 6/26/2019   |
|      2 | 68d08a8e-ab14-4216-b397-7c211fa989a9 | 5:38        | 2/7/2019    |
|      3 | a065e1ac-e2ee-416b-b3d2-c19f2c1dfaa8 | 11:31       | 8/29/2019   |
|      4 | 5b760395-2847-4731-bd51-6a827961f57c | 21:09       | 4/2/2019    |
|      5 | 29903550-b1e6-41a8-a993-55737c33a6f1 | 10:49       | 6/29/2019   |
|      6 | b0f6cbd6-4190-4fdc-876d-389e5dbc16a1 | 4:57        | 8/7/2019    |
|      7 | 9098c703-fbb4-460c-b0b7-18a93e015da8 | 14:14       | 10/10/2019  |
|      8 | dc00dfbf-69e1-4156-849c-c1fcd9937a96 | 7:03        | 11/23/2018  |
|      9 | 03c43193-74ff-464d-b11f-ec0755950dc1 | 13:56       | 10/27/2018  |
|     10 | c5203bdd-aeee-4fdb-918e-dbe78ab8ea35 | 7:29        | 1/9/2019    |
|     11 | 4a1eea7a-1929-42cb-b66e-244107b629e2 | 12:43       | 2/12/2019   |
|     12 | c39e2a6e-9d9a-4ffc-89f5-ee677d777cce | 6:42        | 3/14/2019   |
|     13 | 1dc0d95b-5fb4-48e6-a7f4-8c6fb8bbb219 | 15:08       | 6/24/2019   |
|     14 | ba39f2c4-ec5d-4d97-8a56-a748b9f9f92e | 7:48        | 1/28/2019   |
|     15 | ae1fafbb-e13e-4963-bd90-bba4531e7689 | 22:22       | 3/1/2019    |
+--------+--------------------------------------+-------------+-------------+
```

Table 3)  User Save (StockID, Added Date)
From each user's saved list, each stock has a Stock ID and a timestamp of when it was saved
to the user's favorite list.

```
[mysql> SELECT * FROM User_save;
+-------+--------------------------------------+------------+
| Save  | Stock_id                             | Save_date  |
+-------+--------------------------------------+------------+
|     1 | 1e4ee876-057a-4062-9db9-22fa366bfb77 | 11/16/2018 |
|     2 | 82c84398-7157-4de3-ab14-9187a26bdbc4 | 2/12/2019  |
|     3 | 291c9923-1c5b-431d-a3bd-d8b381ba36ca | 12/10/2018 |
|     4 | 8ac1bd01-a8f2-4745-849b-af4237ebce95 | 11/8/2018  |
|     5 | 3e8183c7-fdb4-4733-b86e-00d9e4a6ddce | 10/11/2019 |
|     6 | a43f70d8-2b00-4b54-83db-2815528facb9 | 1/29/2019  |
|     7 | 29db004e-47f1-4cf6-970f-866c6909ffee | 11/29/2018 |
|     8 | f267a1cf-c61a-430b-ae5d-4828db22a9f6 | 9/22/2019  |
|     9 | ed07644e-ddb1-4688-babc-bd640b9d293b | 7/19/2019  |
|    10 | a3f4da15-2280-493d-b7a1-981811836df8 | 9/6/2019   |
|    11 | 671f1ed8-9449-4c5a-bc2e-decd6a4df2c8 | 11/17/2018 |
|    12 | c3abb386-d843-4e4f-bc7c-2fb2be8a9429 | 8/15/2019  |
|    13 | b3002981-f18f-4691-a2a9-49d7b845dc79 | 6/25/2019  |
|    14 | ad65112b-4abe-408c-ac90-fe24189395ae | 7/15/2019  |
|    15 | 9592d154-3eab-432c-b75b-6da73eca6234 | 10/5/2019  |
+-------+--------------------------------------+------------+
15 rows in set (0.00 sec)
```

Table 4)  User Buy (StockID, Price, Buy Date, Amount)
For Buy relationship, each stock has a Stock ID and a timestamp of when it was bought, the
Stock price, the date and the amount the user bought.

```
mysql> SELECT * FROM User_buy;
+------+--------------------------------------+-----------+------------+------------+
| Buy  | Stock_id                             | Buy_price | Buy_date   | Buy_amount |
+------+--------------------------------------+-----------+------------+------------+
|    1 | 22309471-81c9-48c0-a2e9-9f59bcadf8ec | $508.61M  | 6/21/2019  | 12         |
|    2 | 2f2b5e9b-defe-4adf-a625-1c53d8b42239 | $119.93M  | 9/1/2019   | 11         |
|    3 | 4635b822-fbde-4a1d-904c-232ccb3337bf | $2.61B    | 1/10/2019  | 1          |
|    4 | 7509744f-a34f-48a3-8869-7b847629c1fa | $22.51M   | 6/2/2019   | 20         |
|    5 | 4d3eca2c-f13a-483f-8635-1e0fee54062c | $581.41M  | 2/24/2019  | 10         |
|    6 | 09a56f70-894b-40a9-98ab-1409c7853fa6 | $556.3M   | 8/17/2019  | 16         |
|    7 | de5ef5d3-6b62-4f09-a997-d0f888f96c6f | $54.38M   | 3/10/2019  | 6          |
|    8 | 13a95ddc-0a1b-406b-9650-bc296d6ea039 | $656.65M  | 3/13/2019  | 19         |
|    9 | 22031e52-1e84-4f1d-b7d5-2e74e20366e0 | $571.04M  | 10/2/2019  | 13         |
|   10 | ca85e30a-7ce4-4fab-88c6-a9474a791700 | $126.61M  | 4/10/2019  | 9          |
|   11 | 17fbda0c-39bb-435b-96d4-4190167d729b | $1.77B    | 11/7/2018  | 9          |
|   12 | cceae5e1-fa40-46b3-86dd-e90fd353f91d | n/a       | 7/1/2019   | 18         |
|   13 | 1e26d8bc-f8d0-4374-aa7d-acf878bb1dcb | $228.02M  | 11/22/2018 | 3          |
|   14 | c628a853-c007-4fce-82a9-36b73788c927 | $4.79M    | 10/3/2019  | 15         |
|   15 | 2065ec78-28ea-47b7-b3e1-2100d1d20959 | $34.48M   | 2/20/2019  | 1          |
+------+--------------------------------------+-----------+------------+------------+
15 rows in set (0.00 sec)
```

Table 5) User Sell (StockID, Price, Sell Date, Amount)

For Sell relationship, each stock has a Stock ID and a timestamp of when it was sold, the Stock price, the date and the amount the user sold.

```
[mysql> mysql> SELECT * FROM User_sell;
+------+--------------------------------------+-----------+------------+-------------+
| Sell | Stock_id                             | Sell_price| Sell_date  | Sell_amount |
+------+--------------------------------------+-----------+------------+-------------+
|    1 | 808cffea-f8f6-44c2-aa35-e3caab8d9455 | $238.94M  | 9/15/2019  | 19          |
|    2 | 3f89bf5f-fba9-4904-8623-0f6c8ff77343 | $1.13B    | 2/21/2019  | 6           |
|    3 | 1985b24f-125a-4918-bb05-c68cd2befb63 | n/a       | 2/15/2019  | 2           |
|    4 | 09d99b0d-f0e7-4617-adc1-d2da90276835 | $180.4M   | 12/12/2018 | 2           |
|    5 | 9b4d9a9d-c43d-4b59-8608-79f1f310c7d9 | $467.31M  | 5/20/2019  | 4           |
|    6 | 2059216a-e2cb-4bec-b995-6de24349ca1a | $1.61B    | 5/15/2019  | 4           |
|    7 | 422cc268-316b-4a17-a84d-d29e4eb129bc | $4.55B    | 4/18/2019  | 20          |
|    8 | d4abb591-2cc8-4089-8f97-7bf57683afe4 | $31.07M   | 9/27/2019  | 1           |
|    9 | 1fee9d11-1084-4b11-a2cc-61ed91dada63 | $2.08B    | 11/22/2018 | 1           |
|   10 | 193b2317-86e2-4f7b-a6d7-bc28e2ddf54e | $17.47B   | 7/7/2019   | 6           |
|   11 | 165ffe27-add1-4263-9e5c-4ded399143f1 | $7.68B    | 12/4/2018  | 20          |
|   12 | 06cd9a3f-8279-42cd-827d-06c20fb7f9e8 | $52.6M    | 1/29/2019  | 17          |
|   13 | b5d18601-a71e-41d2-ba1f-2c4516886c30 | $3.97B    | 9/4/2019   | 2           |
|   14 | 2d189c45-1df1-4c9f-acfd-a9566ce2cae1 | $883.27M  | 8/15/2019  | 15          |
|   15 | eb482c1e-3551-4342-bc25-996798c44cf0 | $64.48M   | 4/12/2019  | 12          |
+------+--------------------------------------+-----------+------------+-------------+
15 rows in set (0.00 sec)
```

Table 6) Stock (StockID, Stock Ticker)

Each Stock has a table called information associated with it, Stock ID is again the primary key of the relationship.

```
[mysql> SELECT * FROM Stock;
+-------+--------------------------------------+--------------+
| Stock | Stock_id                             | Stock_ticker |
+-------+--------------------------------------+--------------+
|     1 | 45f8efe3-612f-4776-93d0-dc1e400d7bac | BPI          |
|     2 | dad06c2e-43b0-4dd5-a702-f39c3178e13d | MDSO         |
|     3 | 8b2c9910-c956-4e4d-822d-153aa76dbe9e | ANET         |
|     4 | 45122c69-ec5c-4dc4-9611-5bb915e3d1c8 | CLIRW        |
|     5 | 18088059-528b-4495-bfab-2cb947fbd7dd | PWE          |
|     6 | 4826c8f1-bc98-4eea-a2a1-ec48e52ec30e | AGFS         |
|     7 | a1ffb21b-0591-46bc-84b3-4e6e076a969e | SCM          |
|     8 | e244a08f-b37e-4c5a-979d-1dec0762b889 | NIHD         |
|     9 | aaae5772-8ed6-4c09-b8f1-51d0af1540cc | AMBC         |
|    10 | 31c47f6c-8caf-40d8-bd19-207c0b0bf9b3 | FRME         |
|    11 | 46146114-3825-48b5-8cc4-fa190a23b858 | RXII         |
|    12 | 797c348d-d9fd-476d-a2f9-612f9ab3c0dc | VLRS         |
|    13 | 45b3314c-bf24-460d-bd4f-b2d588abe6e1 | TCF          |
|    14 | a2bb063a-bfc2-4c96-874c-f3cca616da41 | TREX         |
|    15 | 4c27b213-95ff-4135-b899-e9290837dada | MGR          |
+-------+--------------------------------------+--------------+
15 rows in set (0.00 sec)
```

Table 7)  Stock Belongs(Company)

For Belongs relationship, each Stock belongs to a company.

```
[mysql> SELECT * FROM Stock_belongs;
+----------+--------------------------------------+
| Belongs  | Company_id                           |
+----------+--------------------------------------+
|        1 | 88cfdca6-7112-4ccb-9b1f-9ed0565662e0 |
|        2 | 0802c401-b9ea-459c-a719-6676941d73aa |
|        3 | e272078b-a1d7-4e1b-99ec-560b480b783c |
|        4 | bddd1115-ec8b-40c5-a78a-df5ee8ae0e98 |
|        5 | 7194cc13-fa57-41c3-a4d4-016bbe2bcf9e |
|        6 | 66eaca09-3b82-40e3-96e5-384ddac72b00 |
|        7 | 417ca4e6-c9bf-4912-9414-e41b7e898cc7 |
|        8 | 67464836-8af6-4458-a9d8-6310c844e262 |
|        9 | c9c1875d-6645-4b96-971d-c587e7b12dfc |
|       10 | 2bbb16fc-bc5f-4a32-a296-79e063ffb61b |
|       11 | cff07eb0-62f9-41bc-9f76-067f2664eb9e |
|       12 | 3719612d-ad5c-4460-b4d5-c9e925c27eb1 |
|       13 | 791049be-ed60-477e-992e-a3ca560ec04d |
|       14 | 37351844-d044-42c3-be29-48e912ef42eb |
|       15 | d1abdf31-0bb4-467c-8486-9ea0fd45c33b |
+----------+--------------------------------------+
15 rows in set (0.00 sec)
```

Table 8)  Stock has (Info)

For has relationship, each Stock has certain information.

```
[mysql> mysql> SELECT Stock_has;
+----------+--------------------------------------+
| Stock_has | Info_id                             |
+----------+--------------------------------------+
|        1 | ad6964f3-3130-41f2-8f76-5eaa1b36e98b |
|        2 | 1910866e-42e0-4caa-b76b-8f855b99910c |
|        3 | db4285dc-33ee-4926-be5c-8f86cadd0f05 |
|        4 | 2a87907b-6739-4fbb-89a9-60bd38ebb8b7 |
|        5 | c3f5d57e-29ba-419b-a9c9-2a3a10984a8e |
|        6 | 508be069-5f51-406f-bac9-d4cc6d492f35 |
|        7 | fce6f814-26be-4b04-bb30-e5278dd9e3b5 |
|        8 | 3604329a-897a-4e69-be22-7632467ab68a |
|        9 | a3b292fb-06b6-458a-803f-5d6389cff828 |
|       10 | 0621a757-f6c9-4b50-af6a-555d1de81387 |
|       11 | 0fe37bd1-3dfe-4625-9d57-a1a911d60b94 |
|       12 | ddbcc88d-9046-4489-b1bd-e33a9002e37f |
|       13 | ad1c6ce5-2c70-4bd2-aa15-393867edaafc |
|       14 | a61bc840-40f1-4694-9993-832f9ed85467 |
|       15 | f3f1ebbb-8242-4b80-bc5d-9237be906d08 |
+----------+--------------------------------------+
15 rows in set (0.00 sec)
```

Table 9)   Company(CompanyID, Company Name, Industry Type, Location)

Each Company has Company Name, Industry Type, and Location.

```
mysql> SELECT * FROM Company;
+---------+--------------------------------------+--------------+---------------------------------------+-----------------------------+
| Company | Company_id                           | Company_name | Industry_type                         | Location                    |
+---------+--------------------------------------+--------------+---------------------------------------+-----------------------------+
|       1 | 9698aa99-8e04-4c96-b699-11a5a4152056 | Trudoo       | Investment Bankers/Brokers/Service    | Göteborg                    |
|       2 | ab7e3627-54e3-47b0-b31a-dc4b91c6d931 | Voomm        | Major Pharmaceuticals                 | Lyubertsy                   |
|       3 | 61c53cde-5d8e-4fdc-b922-7fbdfe64e857 | Eidel        | Agricultural Chemicals                | Bailu                       |
|       4 | 2ae9864e-24ee-486a-ae08-e570d8060f48 | Rhyzio       | Automotive Aftermarket                | Wonorejo                    |
|       5 | ce4cdcc2-669c-41be-9b69-4ef8f5fd0d46 | Centidel     | Television Services                   | Verkhniy Rohachyk           |
|       6 | 99a577b4-a254-4962-8e7a-1e68159c402b | Meetz        | EDP Services                          | Atsipópoulon                |
|       7 | ff4d4af1-9ff8-4a1f-84ff-cebfe2d8b7e7 | Thoughtbridge| Computer Software: Prepackaged Software| Nova Iguaçu                 |
|       8 | 9079e8b0-7a6c-43ef-8092-d8f248edde56 | Einti        | Containers/Packaging                  | Sampaio                     |
|       9 | c91426d4-3d23-48b0-a45c-ea973cc8d2d2 | Mycat        | n/a                                   | Remas                       |
|      10 | 84c120a3-d9bd-42bd-81f6-cef37033782d | Brainlounge  | n/a                                   | Abéché                      |
|      11 | 59d9b853-9189-44db-a578-1a52c6462694 | Thoughtstorm | Major Banks                           | Daxi                        |
|      12 | 7f98650d-3b99-46cf-97fc-afd6911c107d | Divape       | Major Banks                           | Sala                        |
|      13 | caf0711a-14b4-4a59-9181-b4b6f641a637 | Skippad      | Electronic Components                 | Comandante Luis Piedra Buena|
|      14 | 5a9afdf6-b39a-4bcc-955a-b3cd2683782e | Innojam      | Paper                                 | Sangumata                   |
|      15 | 35c9a19e-71d6-4a74-97a4-1558dc55e7cd | Tagfeed      | Major Banks                           | Āqchah                      |
+---------+--------------------------------------+--------------+---------------------------------------+-----------------------------+
15 rows in set (0.00 sec)
```

Each Info has Daily Low, Daily High, Closing Price, Average Price, Trading Volume)

```
mysql> SELECT * FROM Info;
+------+--------------------------------------+-----------+------------+---------------+---------------+----------------+
| Info | Info_id                              | Daily_low | Daily_high | Closing_price | Average_price | Trading_volume |
+------+--------------------------------------+-----------+------------+---------------+---------------+----------------+
|    1 | 368fc910-8db5-4d30-9c57-a644c40b2852 | $3.19     | $2.01      | $2.23         | $7.33         | 19             |
|    2 | f62d2bcb-9ffe-42dd-aeb3-e89d21483869 | $7.53     | $9.92      | $5.65         | $6.09         | 55             |
|    3 | 3daf8336-e4e6-4fd5-ba49-079c89e39622 | $4.57     | $0.04      | $6.48         | $2.28         | 7              |
|    4 | 730b36c2-16b7-4cf0-b17a-bac594e9103e | $3.10     | $0.06      | $0.45         | $9.60         | 30             |
|    5 | cc969c73-77e2-457f-b978-d2e7184cefd9 | $9.30     | $3.78      | $4.54         | $6.02         | 15             |
|    6 | 46e9a6ca-5221-4335-8491-3317fdecaa6c | $2.71     | $3.68      | $4.84         | $7.52         | 9              |
|    7 | 2bdcefe7-30b2-495f-bf67-72e3738f48a6 | $8.63     | $7.31      | $0.70         | $2.23         | 87             |
|    8 | 9199af5d-aea7-4beb-bc8e-9658b2024b29 | $5.01     | $0.98      | $4.92         | $1.21         | 4              |
|    9 | d67f246b-b01e-4f21-bf1f-2cfdde92c284 | $6.64     | $8.96      | $4.51         | $9.84         | 60             |
|   10 | 4254bd2d-b5ca-4b1d-bf49-7883be2a7c2f | $1.47     | $2.23      | $1.47         | $6.06         | 97             |
|   11 | 16857a06-e439-461b-9352-84d3f0822795 | $4.73     | $5.33      | $8.20         | $4.37         | 69             |
|   12 | 43e52627-ad3c-4587-ae6b-d708e015fccf | $2.90     | $7.05      | $3.23         | $8.86         | 8              |
|   13 | b09b1577-1b1e-4914-a64c-02f294b4159c | $1.13     | $6.90      | $7.42         | $4.23         | 14             |
|   14 | 3de66d1f-fc71-4edd-bd9d-5a92edbd6e58 | $6.81     | $2.13      | $9.11         | $1.21         | 58             |
|   15 | 5cf586cf-af4c-4173-b2a1-6f86ef88d91b | $3.69     | $7.69      | $6.25         | $8.63         | 24             |
+------+--------------------------------------+-----------+------------+---------------+---------------+----------------+
15 rows in set (0.00 sec)
```