

```

1 /*create table*/
2 create table stock (
3 id int(10) not null primary key, symbol varchar, name varchar, date datetime, price real);
4
5 /*insert 5 stock */
6 insert into stock (id,symbol, name, date, price)
7 values
8 (1, 'ABNB', 'Airbnb Inc', '11/07/2023 12:00:00', 121.66),
9 (2, 'ALGN', 'Align Technology Inc', '11/07/2023 12:00:00', 197.46),
10 (3, 'AMD', 'Advanced Micro Devices Inc', '11/07/2023 12:00:00', 113.52),
11 (4, 'CEG', 'Constellation Energy Corp', '11/07/2023 12:00:00', 118.94),
12 (5, 'AMZN', 'Amazon.com Inc', '11/07/2023 12:00:00', 142.73);
13
14 /*insert ABNB stock price the last week*/
15 insert into stock (id,symbol, name, date, price)
16 values
17 (6, 'ABNB', 'Airbnb Inc', '11/07/2023 14:00:00', 120.96),
18 (7, 'ABNB', 'Airbnb Inc', '11/07/2023 16:00:00', 121.08),
19 (8, 'ABNB', 'Airbnb Inc', '11/06/2023 12:00:00', 119.29),
20 (9, 'ABNB', 'Airbnb Inc', '11/06/2023 14:03:00', 117.26),
21 (10, 'ABNB', 'Airbnb Inc', '11/06/2023 16:00:00', 118.17),
22 (11, 'ABNB', 'Airbnb Inc', '11/03/2023 12:00:00', 122.58),
23 (12, 'ABNB', 'Airbnb Inc', '11/03/2023 14:00:00', 122.12),
24 (13, 'ABNB', 'Airbnb Inc', '11/03/2023 16:00:00', 122.64),
25 (14, 'ABNB', 'Airbnb Inc', '11/02/2023 12:00:00', 116.50),
26 (15, 'ABNB', 'Airbnb Inc', '11/02/2023 14:00:00', 115.15),
27 (16, 'ABNB', 'Airbnb Inc', '11/02/2023 16:00:00', 115.50),
28 (17, 'ABNB', 'Airbnb Inc', '11/01/2023 12:00:00', 118.26),
29 (18, 'ABNB', 'Airbnb Inc', '11/01/2023 14:00:00', 117.35),
30 (19, 'ABNB', 'Airbnb Inc', '11/01/2023 16:00:00', 115.83),
31 (20, 'ABNB', 'Airbnb Inc', '10/31/2023 12:00:00', 116.80),
32 (21, 'ABNB', 'Airbnb Inc', '10/31/2023 14:00:00', 118.37),
33 (22, 'ABNB', 'Airbnb Inc', '10/31/2023 16:00:00', 118.32),
34 (23, 'ABNB', 'Airbnb Inc', '10/30/2023 12:00:00', 117.24),
35 (24, 'ABNB', 'Airbnb Inc', '10/30/2023 14:00:00', 116.76),
36 (25, 'ABNB', 'Airbnb Inc', '10/30/2023 16:00:00', 116.95),
37 (26, 'ALGN', 'Align Technology Inc', '11/07/2023 14:00:00', 197.86),
38 (27, 'ALGN', 'Align Technology Inc', '11/07/2023 16:00:00', 197.53),
39 (28, 'ALGN', 'Align Technology Inc', '11/06/2023 12:00:00', 197.39),
40 (29, 'ALGN', 'Align Technology Inc', '11/06/2023 14:00:00', 197.67),
41 (30, 'ALGN', 'Align Technology Inc', '11/06/2023 16:00:00', 197.79),
42 (31, 'ALGN', 'Align Technology Inc', '11/03/2023 12:00:00', 201.31),
43 (32, 'ALGN', 'Align Technology Inc', '11/03/2023 14:00:00', 199.57),
44 (33, 'ALGN', 'Align Technology Inc', '11/03/2023 16:00:00', 197.50),
45 (34, 'ALGN', 'Align Technology Inc', '11/02/2023 12:00:00', 189.70),
46 (35, 'ALGN', 'Align Technology Inc', '11/02/2023 14:00:00', 192.00),
47 (36, 'ALGN', 'Align Technology Inc', '11/02/2023 16:00:00', 192.24),
48 (37, 'ALGN', 'Align Technology Inc', '11/01/2023 12:00:00', 179.95),
49 (38, 'ALGN', 'Align Technology Inc', '11/01/2023 14:00:00', 180.32),
50 (39, 'ALGN', 'Align Technology Inc', '11/01/2023 16:00:00', 183.21),
51 (40, 'ALGN', 'Align Technology Inc', '10/31/2023 12:00:00', 185.42),
52 (41, 'ALGN', 'Align Technology Inc', '10/31/2023 14:00:00', 185.25),
53 (42, 'ALGN', 'Align Technology Inc', '10/31/2023 16:00:00', 184.61),
54 (43, 'ALGN', 'Align Technology Inc', '10/30/2023 12:00:00', 185.00),
55 (44, 'ALGN', 'Align Technology Inc', '10/30/2023 14:00:00', 183.26),
56 (45, 'ALGN', 'Align Technology Inc', '10/30/2023 16:00:00', 186.31),
57 (46, 'AMD', 'Advanced Micro Devices Inc', '11/07/2023 14:00:00', 113.69),
58 (47, 'AMD', 'Advanced Micro Devices Inc', '11/07/2023 16:00:00', 113.48),
59 (48, 'AMD', 'Advanced Micro Devices Inc', '11/06/2023 12:00:00', 111.54),
60 (49, 'AMD', 'Advanced Micro Devices Inc', '11/06/2023 14:00:00', 110.61),
61 (50, 'AMD', 'Advanced Micro Devices Inc', '11/06/2023 16:00:00', 111.76),
62 (51, 'AMD', 'Advanced Micro Devices Inc', '11/03/2023 12:00:00', 110.71),
63 (52, 'AMD', 'Advanced Micro Devices Inc', '11/03/2023 14:00:00', 112.40),
64 (53, 'AMD', 'Advanced Micro Devices Inc', '11/03/2023 16:00:00', 112.26),
65 (54, 'AMD', 'Advanced Micro Devices Inc', '11/02/2023 12:00:00', 107.51),
66 (55, 'AMD', 'Advanced Micro Devices Inc', '11/02/2023 14:00:00', 108.09),
67 (56, 'AMD', 'Advanced Micro Devices Inc', '11/02/2023 16:00:00', 107.79),
68 (57, 'AMD', 'Advanced Micro Devices Inc', '11/01/2023 12:00:00', 106.04),
69 (58, 'AMD', 'Advanced Micro Devices Inc', '11/01/2023 14:00:00', 106.74),

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70 (59, 'AMD', 'Advanced Micro Devices Inc', '11/01/2023 16:00:00', 107.99),
71 (60, 'AMD', 'Advanced Micro Devices Inc', '10/31/2023 12:00:00', 96.78),
72 (61, 'AMD', 'Advanced Micro Devices Inc', '10/31/2023 14:00:00', 98.08),
73 (62, 'AMD', 'Advanced Micro Devices Inc', '10/31/2023 16:00:00', 98.60),
74 (63, 'AMD', 'Advanced Micro Devices Inc', '10/30/2023 12:00:00', 95.77),
75 (64, 'AMD', 'Advanced Micro Devices Inc', '10/30/2023 14:00:00', 96.19),
76 (65, 'AMD', 'Advanced Micro Devices Inc', '10/30/2023 16:00:00', 96.15),
77 (66, 'CEG', 'Constellation Energy Corp', '11/07/2023 14:00:00', 119.60),
78 (67, 'CEG', 'Constellation Energy Corp', '11/07/2023 16:00:00', 119.89),
79 (68, 'CEG', 'Constellation Energy Corp', '11/06/2023 12:00:00', 125.00),
80 (69, 'CEG', 'Constellation Energy Corp', '11/06/2023 14:00:00', 124.12),
81 (70, 'CEG', 'Constellation Energy Corp', '11/06/2023 16:00:00', 124.77),
82 (71, 'CEG', 'Constellation Energy Corp', '11/03/2023 12:00:00', 118.19),
83 (72, 'CEG', 'Constellation Energy Corp', '11/03/2023 14:00:00', 117.93),
84 (73, 'CEG', 'Constellation Energy Corp', '11/03/2023 16:00:00', 117.07),
85 (74, 'CEG', 'Constellation Energy Corp', '11/02/2023 12:00:00', 117.00),
86 (75, 'CEG', 'Constellation Energy Corp', '11/02/2023 14:00:00', 117.59),
87 (76, 'CEG', 'Constellation Energy Corp', '11/02/2023 16:00:00', 117.29),
88 (77, 'CEG', 'Constellation Energy Corp', '11/01/2023 12:00:00', 114.76),
89 (78, 'CEG', 'Constellation Energy Corp', '11/01/2023 14:00:00', 114.23),
90 (79, 'CEG', 'Constellation Energy Corp', '11/01/2023 16:00:00', 114.85),
91 (80, 'CEG', 'Constellation Energy Corp', '10/31/2023 12:00:00', 112.09),
92 (81, 'CEG', 'Constellation Energy Corp', '10/31/2023 14:00:00', 113.04),
93 (82, 'CEG', 'Constellation Energy Corp', '10/31/2023 16:00:00', 112.92),
94 (83, 'CEG', 'Constellation Energy Corp', '10/30/2023 12:00:00', 111.93),
95 (84, 'CEG', 'Constellation Energy Corp', '10/30/2023 14:00:00', 112.59),
96 (85, 'CEG', 'Constellation Energy Corp', '10/30/2023 16:00:00', 111.85),
97 (86, 'AMZN', 'Amazon.com Inc', '11/07/2023 14:00:00', 143.02),
98 (87, 'AMZN', 'Amazon.com Inc', '11/07/2023 16:00:00', 142.79),
99 (88, 'AMZN', 'Amazon.com Inc', '11/06/2023 12:00:00', 139.99),
100 (89, 'AMZN', 'Amazon.com Inc', '11/06/2023 14:00:00', 139.25),
101 (90, 'AMZN', 'Amazon.com Inc', '11/06/2023 16:00:00', 139.67),
102 (91, 'AMZN', 'Amazon.com Inc', '11/03/2023 12:00:00', 138.27),
103 (92, 'AMZN', 'Amazon.com Inc', '11/03/2023 14:00:00', 138.97),
104 (93, 'AMZN', 'Amazon.com Inc', '11/03/2023 16:00:00', 138.58),
105 (94, 'AMZN', 'Amazon.com Inc', '11/02/2023 12:00:00', 136.91),
106 (95, 'AMZN', 'Amazon.com Inc', '11/02/2023 14:00:00', 137.58),
107 (96, 'AMZN', 'Amazon.com Inc', '11/02/2023 16:00:00', 138.08),
108 (97, 'AMZN', 'Amazon.com Inc', '11/01/2023 12:00:00', 135.43),
109 (98, 'AMZN', 'Amazon.com Inc', '11/01/2023 14:00:00', 135.79),
110 (99, 'AMZN', 'Amazon.com Inc', '11/01/2023 16:00:00', 137.02),
111 (100, 'AMZN', 'Amazon.com Inc', '10/31/2023 12:00:00', 132.04),
112 (101, 'AMZN', 'Amazon.com Inc', '10/31/2023 14:00:00', 132.96),
113 (102, 'AMZN', 'Amazon.com Inc', '10/31/2023 16:00:00', 133.00),
114 (103, 'AMZN', 'Amazon.com Inc', '10/30/2023 12:00:00', 132.09),
115 (104, 'AMZN', 'Amazon.com Inc', '10/30/2023 14:00:00', 132.66),
116 (105, 'AMZN', 'Amazon.com Inc', '10/30/2023 16:00:00', 132.72);
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```
117
118 select * from stock order by symbol, date;
119
120 /*What are the distinct stocks in the table?*/
121 select distinct symbol
122 from stock;
123
124 /*Query all data for a single stock. Do you notice any overall trends?*/
125 select *
126 from stock
127 where symbol = 'ABNB';
128
129 select *
130 from stock
131 where symbol = 'ALGN';
132
133 select *
134 from stock
135 where symbol = 'CEG';
136
137 select *
138 from stock
```

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139 where symbol = 'AMZN';
140
141 /*Which rows have a price above 100? between 40 to 50, etc?*/
142 select *
143 from stock
144 where price > 100
145 order by date;
146
147 select *
148 from stock
149 where price between 100 and 125
150 order by date;
151
152 /*Sort the table by price. What are the minimum and maximum prices?*/
153 select symbol, name, max(price) as max_price, min(price) as min_price
154 from stock
155 group by name;
156
157 /*Explore using aggregate functions to look at key statistics about the data (e.g., min, max, average).*/
158 select round(avg(price),2) as 'weekly_stock_avg_price'
159 from stock;
160
161 select symbol, name, avg (price)
162 from stock
163 group by name;
164
165 /*Group the data by stock and repeat. How do the stocks compare to each other?*/
166 select symbol, name, SUM(price), min(price), max(price), round(avg(price),2) as 'avg_price',
167 round((max(price)-min(price)),2) as 'price_range'
168 from stock
169 group by name;
170
171 /*Group the data by day or hour of day. Does day of week or time of day impact prices?*/
172 select symbol, name, date, SUM(price)
173 from stock
174 where date like '%16:00%'
175 group by name
176 order by date;
177
178 /*Which of the rows have a price greater than the average of all prices in the dataset?*/
179 select *
180 from stock
181 where price > (select AVG (price) from stock)
182 order by symbol;
183
184 /*ADVANCED CHALLENGES*/
185 /*In addition to the built-in aggregate functions, explore ways to calculate other key statistics about
186 the data, such as the median or variance.*/
187 select symbol, name, price
188 from stock
189 order by price
190 limit 1
191 offset (select count(*) from stock)/2;
192
193 /*Let's refactor the data into 2 tables - stock_info to store general info about the stock itself (ie.
194 symbol, name) and stock_prices to store the collected data on price (ie. symbol, datetime, price).*/
195 create table stock_info as
196 select id, symbol, name from stock;
197
198 create table stock_price as
199 select id, symbol, price, date from stock;
200
201 select *
202 from stock_info
203 join stock_price
204 on stock_info.id = stock_price.id
205 limit 10;
206
207 /*Add more variables to the stock_info table and update the data (e.g., sector, industry, etc).*/

```

```
205 select *,
206 case
207 when symbol = 'ABNB' then 'Tourism'
208 when symbol = 'ALGN' then 'Technology'
209 when symbol = 'AMD' then 'Industry'
210 when symbol = 'CEG' then 'Technology'
211 when symbol = 'AMZN' then 'Technology'
212 else 'Other'
213 end as 'Sector'
214 from stock_info;
215
```