```sql
--Создание таблицы
CREATE TABLE sales_data (
    Invoice_ID VARCHAR(20),
    Branch VARCHAR(10),
    City VARCHAR(20),
    Customer_type VARCHAR(10),
    Gender VARCHAR(10),
    Product_line VARCHAR(30),
    Unit_price DECIMAL(10, 2),
    Quantity INT,
    Tax_5_percent DECIMAL(10, 4),
    Sales DECIMAL(10, 4),
    Date DATE,
    Time TIME,
    Payment VARCHAR(20),
    COGS DECIMAL(10, 2),
    Gross_margin_percentage DECIMAL(10, 9),
    Gross_income DECIMAL(10, 4),
    Rating DECIMAL(3, 1)
);
```

--Ввод данных

```sql
INSERT INTO sales_data (
    Invoice_ID, Branch, City, Customer_type, Gender, Product_line, Unit_price, Quantity,
    Tax_5_percent, Sales, Date, Time, Payment, COGS, Gross_margin_percentage, Gross_income, Rating
) VALUES
('750-67-8428', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 74.69, 7, 26.1415, 548.9715, '2019-01-05', '13:08:00', 'Ewallet', 522.83, 4.761904762, 26.1415, 9.1),

('226-31-3081', 'Giza', 'Naypyitaw', 'Normal', 'Female', 'Electronic accessories', 15.28, 5, 3.82, 80.22, '2019-03-08', '10:29:00', 'Cash', 76.40, 4.761904762, 3.82, 9.6),

('631-41-3108', 'Alex', 'Yangon', 'Normal', 'Female', 'Home and lifestyle', 46.33, 7, 16.2155, 340.5255, '2019-03-03', '13:23:00', 'Credit card', 324.31, 4.761904762, 16.2155, 7.4),

('123-19-1176', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 58.22, 8, 23.288, 489.048, '2019-01-27', '20:33:00', 'Ewallet', 465.76, 4.761904762, 23.288, 8.4),

('373-73-7910', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 86.31, 7, 30.2085, 634.3785, '2019-02-08', '10:37:00', 'Ewallet', 604.17, 4.761904762, 30.2085, 5.3),

('699-14-3026', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 85.39, 7, 29.8865, 627.6165, '2019-03-25', '18:30:00', 'Ewallet', 597.73, 4.761904762, 29.8865, 4.1),

('355-53-5943', 'Alex', 'Yangon', 'Member', 'Female', 'Electronic accessories', 68.84, 6, 20.652, 433.692, '2019-02-25', '14:36:00', 'Ewallet', 413.04, 4.761904762, 20.652, 5.8),

('315-22-5665', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Home and lifestyle', 73.56, 10, 36.78, 772.38, '2019-02-24', '11:38:00', 'Ewallet', 735.6, 4.761904762, 36.78, 8.0),

('665-32-9167', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 36.26, 2, 3.626, 76.146, '2019-01-10', '17:15:00', 'Credit card', 72.52, 4.761904762, 3.626, 7.2),

('692-92-5582', 'Cairo', 'Mandalay', 'Member', 'Female', 'Food and beverages', 54.84, 3, 8.226, 172.746, '2019-02-20', '13:27:00', 'Credit card', 164.52, 4.761904762, 8.226, 5.9),

('351-62-0822', 'Cairo', 'Mandalay', 'Member', 'Female', 'Fashion accessories', 14.48, 4, 2.896, 60.816, '2019-02-06', '18:07:00', 'Ewallet', 57.92, 4.761904762, 2.896, 4.5),

('529-56-3974', 'Cairo', 'Mandalay', 'Member', 'Female', 'Electronic accessories', 25.51, 4, 5.102, 107.142, '2019-03-09', '17:03:00', 'Cash', 102.04, 4.761904762, 5.102, 6.8),

('365-64-0515', 'Alex', 'Yangon', 'Member', 'Female', 'Electronic accessories', 46.95, 5, 11.7375, 246.4875, '2019-02-12', '10:25:00', 'Ewallet', 234.75, 4.761904762, 11.7375, 7.1),

('252-56-2699', 'Alex', 'Yangon', 'Member', 'Female', 'Food and beverages', 43.19, 10, 21.595, 453.495, '2019-02-07', '16:48:00', 'Ewallet', 431.9, 4.761904762, 21.595, 8.2),

('829-34-3910', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 71.38, 10, 35.69, 749.49, '2019-03-29', '19:21:00', 'Cash', 713.8, 4.761904762, 35.69, 5.7),
```

('299-46-1805', 'Cairo', 'Mandalay', 'Member', 'Female', 'Sports and travel', 93.72, 6, 28.116, 590.436, '2019-01-15', '16:19:00', 'Cash', 562.32, 4.761904762, 28.116, 4.5),

('656-95-9349', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 68.93, 7, 24.1255, 506.6355, '2019-03-11', '11:03:00', 'Credit card', 482.51, 4.761904762, 24.1255, 4.6),

('765-26-6951', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 72.61, 6, 21.783, 457.443, '2019-01-01', '10:39:00', 'Credit card', 435.66, 4.761904762, 21.783, 6.9),

('329-62-1586', 'Alex', 'Yangon', 'Member', 'Female', 'Food and beverages', 54.67, 3, 8.2005, 172.2105, '2019-01-21', '18:00:00', 'Credit card', 164.01, 4.761904762, 8.2005, 8.6),

('319-50-3348', 'Cairo', 'Mandalay', 'Member', 'Female', 'Home and lifestyle', 40.3, 2, 4.03, 84.63, '2019-03-11', '15:30:00', 'Ewallet', 80.6, 4.761904762, 4.03, 4.4),

('669-54-1719', 'Cairo', 'Mandalay', 'Member', 'Female', 'Electronic accessories', 18.93, 6, 5.679, 119.259, '2019-02-10', '12:45:00', 'Credit card', 113.58, 4.761904762, 5.679, 8.1),

('300-71-4605', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 86.04, 5, 21.51, 451.71, '2019-02-25', '11:24:00', 'Ewallet', 430.2, 4.761904762, 21.51, 4.8),

('371-85-5789', 'Cairo', 'Mandalay', 'Member', 'Female', 'Health and beauty', 87.98, 3, 13.197, 277.137, '2019-03-05', '10:40:00', 'Ewallet', 263.94, 4.761904762, 13.197, 5.1),

('273-16-6619', 'Cairo', 'Mandalay', 'Member', 'Female', 'Home and lifestyle', 33.2, 2, 3.32, 69.72, '2019-03-15', '12:20:00', 'Credit card', 66.4, 4.761904762, 3.32, 4.4),

('636-48-8204', 'Alex', 'Yangon', 'Member', 'Female', 'Electronic accessories', 34.56, 5, 8.64, 181.44, '2019-02-17', '11:15:00', 'Ewallet', 172.8, 4.761904762, 8.64, 9.9),

('549-59-1358', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 88.63, 3, 13.2945, 279.1845, '2019-03-02', '17:36:00', 'Ewallet', 265.89, 4.761904762, 13.2945, 6),

('227-03-5010', 'Alex', 'Yangon', 'Member', 'Female', 'Home and lifestyle', 52.59, 8, 21.036, 441.756, '2019-03-22', '19:20:00', 'Credit card', 420.72, 4.761904762, 21.036, 8.5),

('649-29-6775', 'Cairo', 'Mandalay', 'Member', 'Female', 'Fashion accessories', 33.52, 1, 1.676, 35.196, '2019-02-08', '15:31:00', 'Cash', 33.52, 4.761904762, 1.676, 6.7),

('189-17-4241', 'Alex', 'Yangon', 'Member', 'Female', 'Fashion accessories', 87.67, 2, 8.767, 184.107, '2019-03-10', '12:17:00', 'Credit card', 175.34, 4.761904762, 8.767, 7.7),

('145-94-9061', 'Cairo', 'Mandalay', 'Member', 'Female', 'Food and beverages', 88.36, 5, 22.09, 463.89, '2019-01-25', '19:48:00', 'Cash', 441.8, 4.761904762, 22.09, 9.6),

('848-62-7243', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 24.89, 9, 11.2005, 235.2105, '2019-03-15', '15:36:00', 'Cash', 224.01, 4.761904762, 11.2005, 7.4),

('871-79-8483', 'Cairo', 'Mandalay', 'Member', 'Female', 'Fashion accessories', 94.13, 5, 23.5325, 494.1825, '2019-02-25', '19:39:00', 'Credit card', 470.65, 4.761904762, 23.5325, 4.8),

('149-71-6266', 'Cairo', 'Mandalay', 'Member', 'Female', 'Sports and travel', 78.07, 9, 35.1315, 737.7615, '2019-01-28', '12:43:00', 'Cash', 702.63, 4.761904762, 35.1315, 4.5),

('640-49-2076', 'Cairo', 'Mandalay', 'Member', 'Female', 'Sports and travel', 83.78, 8, 33.512, 703.752, '2019-01-10', '14:49:00', 'Cash', 670.24, 4.761904762, 33.512, 5.1),

('595-11-5460', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 96.58, 2, 9.658, 202.818, '2019-03-15', '10:12:00', 'Credit card', 193.16, 4.761904762, 9.658, 5.1),

('183-56-6882', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 99.42, 4, 19.884, 417.564, '2019-02-06', '10:42:00', 'Ewallet', 397.68, 4.761904762, 19.884, 7.5),

('232-16-2483', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Sports and travel', 68.12, 1, 3.406, 71.526, '2019-01-07', '12:28:00', 'Ewallet', 68.12, 4.761904762, 3.406, 6.8),

('129-29-8530', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 62.62, 5, 15.655, 328.755, '2019-03-10', '19:15:00', 'Ewallet', 313.1, 4.761904762, 15.655, 7),

('272-65-1806', 'Alex', 'Yangon', 'Member', 'Female', 'Electronic accessories', 60.88, 9, 27.396, 575.316, '2019-01-15', '17:17:00', 'Ewallet', 547.92, 4.761904762, 27.396, 4.7),

('333-73-7901', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Health and beauty', 54.92, 8, 21.968, 461.328, '2019-03-23', '13:24:00', 'Ewallet', 439.36, 4.761904762, 21.968, 7.6),

('777-82-7220', 'Cairo', 'Mandalay', 'Member', 'Female', 'Home and lifestyle', 30.12, 8, 12.048, 253.008, '2019-03-03', '13:01:00', 'Cash', 240.96, 4.761904762, 12.048, 7.7),

('280-35-5823', 'Cairo', 'Mandalay', 'Member', 'Female', 'Home and lifestyle', 86.72, 1, 4.336, 91.056, '2019-01-17', '18:45:00', 'Ewallet', 86.72, 4.761904762, 4.336, 7.9),

('554-53-8700', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Home and lifestyle', 56.11, 2, 5.611, 117.831, '2019-02-02', '10:11:00', 'Cash', 112.22, 4.761904762, 5.611, 6.3),

('354-25-5821', 'Cairo', 'Mandalay', 'Member', 'Female', 'Sports and travel', 69.12, 6, 20.736, 435.456, '2019-02-08', '13:03:00', 'Cash', 414.72, 4.761904762, 20.736, 5.6),

('228-96-1411', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 98.7, 8, 39.48, 829.08, '2019-03-04', '20:39:00', 'Cash', 789.6, 4.761904762, 39.48, 7.6),

('617-15-4209', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Health and beauty', 15.37, 2, 1.537, 32.277, '2019-03-16', '19:47:00', 'Cash', 30.74, 4.761904762, 1.537, 7.2),

('132-32-9879', 'Cairo', 'Mandalay', 'Member', 'Female', 'Electronic accessories', 93.96, 4, 18.792, 394.632, '2019-03-09', '18:00:00', 'Cash', 375.84, 4.761904762, 18.792, 9.5),

('370-41-7321', 'Cairo', 'Mandalay', 'Member', 'Female', 'Health and beauty', 56.69, 9, 25.5105, 535.7205, '2019-02-27', '17:24:00', 'Credit card', 510.21, 4.761904762, 25.5105, 8.4),

('727-46-3608', 'Cairo', 'Mandalay', 'Member', 'Female', 'Food and beverages', 20.01, 9, 9.0045, 189.0945, '2019-02-06', '15:47:00', 'Ewallet', 180.09, 4.761904762, 9.0045, 4.1),

('574-22-5561', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Fashion accessories', 82.63, 10, 41.315, 867.615, '3/19/2019', '5:08:00 PM', 'Ewallet', 826.3, 4.761904762, 41.315, 7.9),

('326-78-5178', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 91.4, 7, 31.99, 671.79, '2/3/2019', '10:19:00 AM', 'Cash', 639.8, 4.761904762, 31.99, 9.5),

('162-48-8011', 'Alex', 'Yangon', 'Member', 'Female', 'Food and beverages', 44.59, 5, 11.1475, 234.0975, '2/10/2019', '3:10:00 PM', 'Cash', 222.95, 4.761904762, 11.1475, 8.5),

('616-24-2851', 'Cairo', 'Mandalay', 'Member', 'Female', 'Fashion accessories', 17.87, 4, 3.574, 75.054, '3/22/2019', '2:42:00 PM', 'Ewallet', 71.48, 4.761904762, 3.574, 6.5),

('778-71-5554', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Fashion accessories', 15.43, 1, 0.7715, 16.2015, '1/25/2019', '3:46:00 PM', 'Credit card', 15.43, 4.761904762, 0.7715, 6.1),

('242-55-6721', 'Cairo', 'Mandalay', 'Member', 'Female', 'Home and lifestyle', 16.16, 2, 1.616, 33.936, '3/7/2019', '11:49:00 AM', 'Ewallet', 32.32, 4.761904762, 1.616, 6.5),

('399-46-5918', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 85.98, 8, 34.392, 722.232, '2/28/2019', '7:01:00 PM', 'Cash', 687.84, 4.761904762, 34.392, 8.2),

('106-35-6779', 'Alex', 'Yangon', 'Member', 'Female', 'Home and lifestyle', 44.34, 2, 4.434, 93.114, '3/27/2019', '11:26:00 AM', 'Cash', 88.68, 4.761904762, 4.434, 5.8),

('635-40-6220', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 89.6, 8, 35.84, 752.64, '2/7/2019', '11:28:00 AM', 'Ewallet', 716.8, 4.761904762, 35.84, 6.6),

('817-48-8732', 'Alex', 'Yangon', 'Member', 'Female', 'Home and lifestyle', 72.35, 10, 36.175, 759.675, '1/20/2019', '3:55:00 PM', 'Cash', 723.5, 4.761904762, 36.175, 5.4),

('120-06-4233', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 30.61, 6, 9.183, 192.843, '3/12/2019', '8:36:00 PM', 'Cash', 183.66, 4.761904762, 9.183, 9.3),

('285-68-5083', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Sports and travel', 24.74, 3, 3.711, 77.931, '2/15/2019', '5:47:00 PM', 'Credit card', 74.22, 4.761904762, 3.711, 10),

('803-83-5989', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Home and lifestyle', 55.73, 6, 16.719, 351.099, '2/24/2019', '10:55:00 AM', 'Ewallet', 334.38, 4.761904762, 16.719, 7),

('347-34-2234', 'Cairo', 'Mandalay', 'Member', 'Female', 'Sports and travel', 55.07, 9, 24.7815, 520.4115, '2/3/2019', '1:40:00 PM', 'Ewallet', 495.63, 4.761904762, 24.7815, 10),

('199-75-8169', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 15.81, 10, 7.905, 166.005, '3/6/2019', '12:27:00 PM', 'Credit card', 158.1, 4.761904762, 7.905, 8.6),

('853-23-2453', 'Cairo', 'Mandalay', 'Member', 'Female', 'Health and beauty', 75.74, 4, 15.148, 318.108, '2/14/2019', '2:35:00 PM', 'Cash', 302.96, 4.761904762, 15.148, 7.6),

('877-22-3308', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 15.87, 10, 7.935, 166.635, '3/13/2019', '4:40:00 PM', 'Cash', 158.7, 4.761904762, 7.935, 5.8),

('838-78-4295', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Health and beauty', 33.47, 2, 3.347, 70.287, '2/10/2019', '3:43:00 PM', 'Ewallet', 66.94, 4.761904762, 3.347, 6.7),

('109-28-2512', 'Cairo', 'Mandalay', 'Member', 'Female', 'Fashion accessories', 97.61, 6, 29.283, 614.943, '1/7/2019', '3:01:00 PM', 'Ewallet', 585.66, 4.761904762, 29.283, 9.9),

('232-11-3025', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 78.77, 10, 39.385, 827.085, '1/24/2019', '10:04:00 AM', 'Cash', 787.7, 4.761904762, 39.385, 6.4),

('382-03-4532', 'Alex', 'Yangon', 'Member', 'Female', 'Health and beauty', 18.33, 1, 0.9165, 19.2465, '2/2/2019', '6:50:00 PM', 'Cash', 18.33, 4.761904762, 0.9165, 4.3),

('393-65-2792', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 89.48, 10, 44.74, 939.54, '1/6/2019', '12:46:00 PM', 'Credit card', 894.8, 4.761904762, 44.74, 9.6),

('796-12-2025', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Fashion accessories', 62.12, 10, 31.06, 652.26, '2/11/2019', '4:19:00 PM', 'Cash', 621.2, 4.761904762, 31.06, 5.9),

('510-95-6347', 'Cairo', 'Mandalay', 'Member', 'Female', 'Food and beverages', 48.52, 3, 7.278, 152.838, '3/5/2019', '6:17:00 PM', 'Ewallet', 145.56, 4.761904762, 7.278, 4),

('841-35-6630', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 75.91, 6, 22.773, 478.233, '3/9/2019', '6:21:00 PM', 'Cash', 455.46, 4.761904762, 22.773, 8.7),

('287-21-9091', 'Alex', 'Yangon', 'Member', 'Female', 'Home and lifestyle', 74.67, 9, 33.6015, 705.6315, '1/22/2019', '10:55:00 AM', 'Ewallet', 672.03, 4.761904762, 33.6015, 9.4),

('732-94-0499', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 41.65, 10, 20.825, 437.325, '1/13/2019', '5:04:00 PM', 'Credit card', 416.5, 4.761904762, 20.825, 5.4),

('263-10-3913', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Fashion accessories', 49.04, 9, 22.068, 463.428, '1/9/2019', '2:20:00 PM', 'Credit card', 441.36, 4.761904762, 22.068, 8.6),

('381-20-0914', 'Alex', 'Yangon', 'Member', 'Female', 'Fashion accessories', 20.01, 9, 9.0045, 189.0945, '1/12/2019', '3:48:00 PM', 'Credit card', 180.09, 4.761904762, 9.0045, 5.7),

('829-49-1914', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 78.31, 10, 39.155, 822.255, '3/5/2019', '4:24:00 PM', 'Ewallet', 783.1, 4.761904762, 39.155, 6.6),

('756-01-7507', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Health and beauty', 20.38, 5, 5.095, 106.995, '1/22/2019', '6:56:00 PM', 'Cash', 101.9, 4.761904762, 5.095, 6),

('870-72-4431', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Health and beauty', 99.19, 6, 29.757, 624.897, '1/21/2019', '2:42:00 PM', 'Credit card', 595.14, 4.761904762, 29.757, 5.5),

('847-38-7188', 'Cairo', 'Mandalay', 'Member', 'Female', 'Food and beverages', 96.68, 3, 14.502, 304.542, '1/26/2019', '7:56:00 PM', 'Ewallet', 290.04, 4.761904762, 14.502, 6.4),

('480-63-2856', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 19.25, 8, 7.7, 161.7, '1/23/2019', '6:37:00 PM', 'Ewallet', 154, 4.761904762, 7.7, 6.6),

('787-56-0757', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Food and beverages', 80.36, 4, 16.072, 337.512, '2/23/2019', '6:45:00 PM', 'Credit card', 321.44, 4.761904762, 16.072, 8.3),

('360-39-5055', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Sports and travel', 48.91, 5, 12.2275, 256.7775, '3/9/2019', '10:17:00 AM', 'Cash', 244.55, 4.761904762, 12.2275, 6.6),

('730-50-9884', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Sports and travel', 83.06, 7, 29.071, 610.491, '3/5/2019', '2:31:00 PM', 'Ewallet', 581.42, 4.761904762, 29.071, 4),

('362-58-8315', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Fashion accessories', 76.52, 5, 19.13, 401.73, '3/25/2019', '10:23:00 AM', 'Cash', 382.6, 4.761904762, 19.13, 9.9),

('633-44-8566', 'Alex', 'Yangon', 'Member', 'Female', 'Food and beverages', 49.38, 7, 17.283, 362.943, '3/27/2019', '8:35:00 PM', 'Credit card', 345.66, 4.761904762, 17.283, 7.3),

('504-35-8843', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 42.47, 1, 2.1235, 44.5935, '1/2/2019', '4:57:00 PM', 'Cash', 42.47, 4.761904762, 2.1235, 5.7),

('318-68-5053', 'Cairo', 'Mandalay', 'Member', 'Female', 'Health and beauty', 76.99, 6, 23.097, 485.037, '2/27/2019', '5:55:00 PM', 'Cash', 461.94, 4.761904762, 23.097, 6.1),

('565-80-5980', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Home and lifestyle', 47.38, 4, 9.476, 198.996, '1/23/2019', '10:25:00 AM', 'Cash', 189.52, 4.761904762, 9.476, 7.1),

('225-32-0908', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Sports and travel', 44.86, 10, 22.43, 471.03, '1/26/2019', '7:54:00 PM', 'Ewallet', 448.6, 4.761904762, 22.43, 8.2),

('873-51-0671', 'Alex', 'Yangon', 'Member', 'Female', 'Sports and travel', 21.98, 7, 7.693, 161.553, '1/10/2019', '4:42:00 PM', 'Ewallet', 153.86, 4.761904762, 7.693, 5.1),

('152-08-9985', 'Cairo', 'Mandalay', 'Member', 'Female', 'Health and beauty', 64.36, 9, 28.962, 608.202, '3/12/2019', '12:09:00 PM', 'Credit card', 579.24, 4.761904762, 28.962, 8.6),

('512-91-0811', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Health and beauty', 89.75, 1, 4.4875, 94.2375, '2/6/2019', '8:05:00 PM', 'Credit card', 89.75, 4.761904762, 4.4875, 6.6),

('594-34-4444', 'Alex', 'Yangon', 'Member', 'Female', 'Electronic accessories', 97.16, 1, 4.858, 102.018, '3/8/2019', '8:38:00 PM', 'Ewallet', 97.16, 4.761904762, 4.858, 7.2),

('766-85-7061', 'Cairo', 'Mandalay', 'Member', 'Female', 'Health and beauty', 87.87, 10, 43.935, 922.635, '3/29/2019', '10:25:00 AM', 'Ewallet', 878.7, 4.761904762, 43.935, 5.1),

('871-39-9221', 'Giza', 'Naypyitaw', 'Member', 'Female', 'Electronic accessories', 12.45, 6, 3.735, 78.435, '2/9/2019', '1:11:00 PM', 'Cash', 74.7, 4.761904762, 3.735, 4.1),

('865-92-6136', 'Alex', 'Yangon', 'Member', 'Female', 'Food and beverages', 52.75, 3, 7.9125, 166.1625, '3/23/2019', '10:16:00 AM', 'Ewallet', 158.25, 4.761904762, 7.9125, 9.3),

('733-01-9107', 'Cairo', 'Mandalay', 'Member', 'Female', 'Home and lifestyle', 82.7, 6, 24.81, 521.01, '3/5/2019', '6:14:00 PM', 'Cash', 496.2, 4.761904762, 24.81, 7.4);

30 SQL - запросов для извлечения максимального количества инсайтов из базы данных

-- **1 Сколько пользователей зарегистрировались в определённый период?**

```
SELECT COUNT(DISTINCT Invoice_ID) AS Registered_Users
FROM sales_data
WHERE Date BETWEEN '2019-01-01' AND '2019-03-01';
```

-- **2 Какой товар/услуга наиболее популярны?**

```
SELECT Product_line, COUNT(*) AS Sales_Count
FROM sales_data
GROUP BY Product_line
ORDER BY Sales_Count DESC
LIMIT 1;
```

-- **3 Какие категории показывают рост/спад продаж по месяцам?**

```
SELECT
    DATE_FORMAT(Date, '%Y-%m') AS Month,
    Product_line,
    SUM(Sales) AS Total_Sales
FROM sales_data
GROUP BY Month, Product_line
ORDER BY Month;
```

-- **4 Каковы средние и медианные значения ключевых метрик (например, средняя сумма продажи)?**

```
-- Средняя сумма продажи
SELECT AVG(Sales) AS Avg_Sales
FROM sales_data;

-- Медианная сумма продажи
WITH Sales_Ordered AS (
    SELECT Sales, ROW_NUMBER() OVER (ORDER BY Sales) AS RowNum, COUNT(*) OVER () AS
TotalRows
    FROM sales_data
)
SELECT AVG(Sales) AS Median_Sales
FROM Sales_Ordered
WHERE RowNum IN (TotalRows / 2, (TotalRows / 2) + 1);
```

-- **5 Как распределяются покупки по времени суток или дням недели?**

```
-- По времени суток
SELECT HOUR(Time) AS Hour_of_Day, COUNT(*) AS Purchase_Count
FROM sales_data
GROUP BY Hour_of_Day
ORDER BY Hour_of_Day;
-- По дням недели
SELECT DAYOFWEEK(Date) AS Day_of_Week, COUNT(*) AS Purchase_Count
FROM sales_data
GROUP BY Day_of_Week
ORDER BY Day_of_Week;
```

-- 6 Есть ли сезонные закономерности?

```sql
SELECT
    MONTH(Date) AS Month,
    SUM(Sales) AS Total_Sales
FROM sales_data
GROUP BY Month
ORDER BY Month;
```

-- 7 Как изменяются метрики по сегментам клиентов (например, по возрасту или региону)?

```sql
-- Разделение по региону
SELECT City, AVG(Sales) AS Avg_Sales, COUNT(*) AS Purchase_Count
FROM sales_data
GROUP BY City
ORDER BY Avg_Sales DESC;
```

```sql
-- Разделение по типу клиента
SELECT Customer_type, AVG(Sales) AS Avg_Sales, COUNT(*) AS Purchase_Count
FROM sales_data
GROUP BY Customer_type
ORDER BY Avg_Sales DESC;
```

-- 8 Какое распределение по полам среди покупателей?

```sql
SELECT Gender, COUNT(*) AS Purchase_Count
FROM sales_data
GROUP BY Gender;
```

-- 9 Какое среднее значение рейтинга по продуктам?

```sql
SELECT Product_line, AVG(Rating) AS Avg_Rating
FROM sales_data
GROUP BY Product_line
ORDER BY Avg_Rating DESC;
```

-- 10 Какие товары имеют наибольшую маржу?

```sql
SELECT Product_line, MAX(Gross_margin_percentage) AS Max_Margin
FROM sales_data
GROUP BY Product_line
ORDER BY Max_Margin DESC
LIMIT 1;
```

-- 11 Как изменяется сумма продаж по месяцам для разных способов оплаты?

```sql
SELECT
    DATE_FORMAT(Date, '%Y-%m') AS Month,
    Payment,
    SUM(Sales) AS Total_Sales
FROM sales_data
GROUP BY Month, Payment
ORDER BY Month;
```

-- 12 Какое количество продаж произошло в выходные дни?

```sql
SELECT COUNT(*) AS Weekend_Sales
FROM sales_data
WHERE DAYOFWEEK(Date) IN (1, 7);  -- 1 - Воскресенье, 7 - Суббота
```

-- 13 Какова средняя стоимость товаров по каждой категории?

```sql
SELECT Product_line, AVG(Unit_price) AS Avg_Price
FROM sales_data
GROUP BY Product_line;
```

-- 14 Какие товары чаще всего покупаются вместе (по данным о продажах)?

```sql
SELECT a.Product_line AS Product_1, b.Product_line AS Product_2, COUNT(*) AS Pair_Count
FROM sales_data a
JOIN sales_data b ON a.Invoice_ID = b.Invoice_ID AND a.Product_line != b.Product_line
GROUP BY Product_1, Product_2
ORDER BY Pair_Count DESC
LIMIT 10;
```

-- 15 Как изменяется прибыль по месяцам?

```sql
SELECT
    DATE_FORMAT(Date, '%Y-%m') AS Month,
    SUM(Gross_income) AS Total_Profit
FROM sales_data
GROUP BY Month
ORDER BY Month;
```

-- 16 Сколько продаж было по каждому методу оплаты?

```sql
SELECT Payment, COUNT(*) AS Payment_Count
FROM sales_data
GROUP BY Payment;
```

-- 17 Какова средняя стоимость продажи по типу клиента?

```sql
SELECT Customer_type, AVG(Sales) AS Avg_Sales
FROM sales_data
GROUP BY Customer_type;
```

-- 18 Какое соотношение продаж по типу клиента?

```sql
SELECT Customer_type, COUNT(*) AS Sales_Count
FROM sales_data
GROUP BY Customer_type;
```

-- 19 Какие товары имеют наибольшие продажи по количеству?

```sql
SELECT Product_line, SUM(Quantity) AS Total_Quantity
FROM sales_data
GROUP BY Product_line
ORDER BY Total_Quantity DESC
LIMIT 1;
```

-- 20 Как изменяется количество покупок по дням недели?

```sql
SELECT DAYOFWEEK(Date) AS Day_of_Week, COUNT(*) AS Purchase_Count
FROM sales_data
GROUP BY Day_of_Week
ORDER BY Day_of_Week;
```

-- 21 Какое количество продаж было по каждому товару в определённый период времени?

```sql
SELECT Product_line, COUNT(*) AS Sales_Count
FROM sales_data
WHERE Date BETWEEN '2020-01-01' AND '2020-12-31'
GROUP BY Product_line
ORDER BY Sales_Count DESC;
```

-- 22 Какое соотношение продаж по полу?

```sql
SELECT Gender, COUNT(*) AS Sales_Count
FROM sales_data
GROUP BY Gender;
```

-- 23 Какие товары имеют наибольшую среднюю цену?

```sql
SELECT Product_line, AVG(Unit_price) AS Avg_Price
FROM sales_data
GROUP BY Product_line
ORDER BY Avg_Price DESC
LIMIT 1;
```

-- 24 Сколько продаж было в каждом месяце по каждому способу оплаты?

```sql
SELECT
    DATE_FORMAT(Date, '%Y-%m') AS Month,
    Payment,
    COUNT(*) AS Sales_Count
FROM sales_data
GROUP BY Month, Payment
ORDER BY Month, Payment;
```

-- 25 Как изменяется средняя сумма продажи по месяцам?

```sql
SELECT
    DATE_FORMAT(Date, '%Y-%m') AS Month,
    AVG(Sales) AS Avg_Sales
FROM sales_data
GROUP BY Month
ORDER BY Month;
```

-- 26 Какие товары чаще всего покупаются в выходные дни?

```
SELECT Product_line, COUNT(*) AS Sales_Count
FROM sales_data
WHERE DAYOFWEEK(Date) IN (1, 7)  -- 1 - Воскресенье, 7 - Суббота
GROUP BY Product_line
ORDER BY Sales_Count DESC
LIMIT 1;
```

-- 27 Какие категории товаров показывают наибольший рост продаж по сравнению с предыдущим месяцем?

```
WITH Monthly_Sales AS (
   SELECT
      DATE_FORMAT(Date, '%Y-%m') AS Month,
      Product_line,
      SUM(Sales) AS Total_Sales
   FROM sales_data
   GROUP BY Month, Product_line
)
SELECT
   Current.Month,
   Current.Product_line,
   Current.Total_Sales - COALESCE(Previous.Total_Sales, 0) AS Sales_Growth
FROM Monthly_Sales Current
LEFT JOIN Monthly_Sales Previous
   ON Current.Product_line = Previous.Product_line
   AND Current.Month = DATE_FORMAT(DATE_ADD(STR_TO_DATE(Current.Month, '%Y-%m'),
INTERVAL -1 MONTH), '%Y-%m')
ORDER BY Sales_Growth DESC;
```

-- 28 Какое среднее количество товаров покупает один клиент?

```
SELECT AVG(Quantity) AS Avg_Quantity_Per_Customer
FROM sales_data;
```

-- 29 Какие товары имеют наименьшие продажи по количеству?

```
SELECT Product_line, SUM(Quantity) AS Total_Quantity
FROM sales_data
GROUP BY Product_line
ORDER BY Total_Quantity ASC
LIMIT 1;
```

-- 30 Какое среднее количество товаров покупается по каждой категории?

```
SELECT Product_line, AVG(Quantity) AS Avg_Quantity
FROM sales_data
GROUP BY Product_line;
```