



DATA ANALYST CHALLENGE

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DETAILS

- We're providing you with a simplified csv file of transactions that merchants have made with REPAY over a certain period of time.

date	merchant	return_code
2019-01-01	3899978	1
2019-01-01	1005527	0
2019-01-01	3899978	0
2019-01-01	1005527	0

Possible transaction return codes are as follows:

- 0, transaction approved
- 1, transaction declined, insufficient funds
- 21, transaction declined, card reported stolen
- 36, transaction declined, improper format
- 40, transaction declined, unknown reason

There is a profit margin associated with each return code:

- 0, 10 cents
- 1, -5 cents
- 21, 0 cents
- 36, -7 cents
- 40, -2 cents

NUMBER OF TRANSACTIONS, APPROVALS, AND TOTAL DECLINES FOR EACH DAY

```
SELECT Cast(t.date AS date) Dates,  
       Count(T.return_code) AS  
Total_Transactions,  
       Count(CASE  
           WHEN T.return_code = 0 THEN 1  
       end)      AS Approvals,  
       Count(CASE  
           WHEN T.return_code > 1 THEN 1  
       end)      AS Declined  
FROM   transactions T  
GROUP BY Cast(t.date AS date)
```

Dates	Total_Transactions	Approvals	Declined
2019-01-01	1027	848	112
2019-01-02	1071	881	94
2019-01-03	1061	873	93
2019-01-04	1063	875	112
2019-01-05	1039	862	91
2019-01-06	1034	852	95
2019-01-07	993	829	79
2019-01-08	957	785	73
2019-01-09	996	825	81
2019-01-10	967	787	97
2019-01-11	1092	862	114
2019-01-12	1115	907	114
2019-01-13	1110	901	104
2019-01-14	1005	816	99
2019-01-15	1138	927	93
2019-01-16	1045	843	106
2019-01-17	1065	866	109
2019-01-18	1123	895	115
2019-01-19	1114	907	120
2019-01-20	1087	882	121
2019-01-21	1108	906	110
2019-01-22	1114	896	126
2019-01-23	1039	825	118
2019-01-24	1039	841	97
2019-01-25	976	797	89
2019-01-26	998	831	91

NUMBER OF APPROVAL CODES FOR EACH MERCHANT FOR EACH DAY

```
SELECT T.merchant      AS Merchants,  
       Cast(t.date AS date) Dates,  
       Count(CASE  
           WHEN T.return_code = 0 THEN 1  
           end)        AS Approvals  
FROM   transactions T  
GROUP BY Cast(t.date AS date)  
ORDER BY T.merchant,  
         Dates
```

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
	Merchants	Dates	Approvals			
▶	1002349	2019-01-08	785			
	1002349	2019-01-10	787			
	1002349	2019-02-03	979			
	1005527	2019-01-01	848			
	1005527	2019-01-02	881			
	1005527	2019-01-04	875			
	1005527	2019-01-05	862			
	1005527	2019-01-06	852			
	1005527	2019-01-07	829			
	1005527	2019-01-09	825			
	1005527	2019-01-11	862			
	1005527	2019-01-12	907			
	1005527	2019-01-13	901			
	1005527	2019-01-14	816			
	1005527	2019-01-15	927			
	1005527	2019-01-16	843			
	1005527	2019-01-18	895			
	1005527	2019-01-19	907			
	1005527	2019-01-28	808			
	1005527	2019-01-29	888			
	1005527	2019-01-31	793			
	1005527	2019-02-02	914			
	1005527	2019-02-05	942			
	1005527	2019-02-08	988			
	1005527	2019-02-09	1063			
	1005527	2019-02-10	12			

TOTAL PROFIT FOR EACH MERCHANT FOR EACH DAY

```
ALTER TABLE `repay_db`.`transactions`  
ADD COLUMN `profit_nums` DECIMAL(10,2) NULL AFTER `return_code`;
```

```
UPDATE transactions  
SET profit_nums =  
CASE return_code  
WHEN 0 THEN 0.10  
WHEN 1 THEN -0.05  
WHEN 21 THEN 0.00  
WHEN 36 THEN -0.07  
WHEN 40 THEN -0.02  
ELSE 0.00  
END;
```

```
SELECT merchant      AS  
Merchants,  
       Cast(date AS date) Dates,  
       Sum(profit_nums) AS  
Daily_Profit  
FROM transactions  
GROUP BY Cast(date AS date),  
merchant  
ORDER BY merchant,  
dates
```


TOTAL PROFIT FOR EACH MERCHANT FOR EACH DAY (CONT.)

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
	Merchants	Dates	Daily_Profit			
▶	1002349	2019-01-01	7.46			
	1002349	2019-01-02	7.84			
	1002349	2019-01-03	7.54			
	1002349	2019-01-04	7.82			
	1002349	2019-01-05	8.50			
	1002349	2019-01-06	7.61			
	1002349	2019-01-07	8.14			
	1002349	2019-01-08	7.34			
	1002349	2019-01-09	7.31			
	1002349	2019-01-10	8.51			
	1002349	2019-01-11	7.54			
	1002349	2019-01-12	8.35			
	1002349	2019-01-13	8.49			
	1002349	2019-01-14	6.71			
	1002349	2019-01-15	7.84			
	1002349	2019-01-16	8.37			
	1002349	2019-01-17	8.66			
	1002349	2019-01-18	7.79			
	1002349	2019-01-19	7.51			
	1002349	2019-01-20	8.75			
	1002349	2019-01-21	8.39			
	1002349	2019-01-22	6.79			
	1002349	2019-01-23	8.07			
	1002349	2019-01-24	7.47			
	1002349	2019-01-25	7.68			
	1002349	2019-01-26	8.51			