

Personal Finance Tracker

1. Create Schema: Users, Income, Expenses, Categories.

```
mysql> use finance;
Database changed
mysql> create table users(userid int primary key, name varchar(30), email varchar(40));
Query OK, 0 rows affected (0.426 sec)

mysql> create table categories(categoryid int primary key, name varchar(20));
Query OK, 0 rows affected (0.347 sec)

mysql> create table income(incomeid int primary key, userid int, amount decimal(10,2), source varchar(20), date date,foreign key (userid) references users(userid));
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'key (userid) references users(userid))' at line 1
mysql> create table income(incomeid int primary key, userid int, amount decimal(10,2), source varchar(20), date date,foreign key (userid) references users(userid));
Query OK, 0 rows affected (0.629 sec)
```

```
mysql> create table expences(expencesid int primary key, userid int, categoryid int, amount decimal(10,2), description varchar(50), date date, foreign key (userid) references users(userid), foreign key (categoryid) references categories(categoryid));
Query OK, 0 rows affected (0.858 sec)
```

```
mysql> describe users;
```

Field	Type	Null	Key	Default	Extra
userid	int	NO	PRI	NULL	
name	varchar(30)	YES		NULL	
email	varchar(40)	YES		NULL	

```
3 rows in set (0.204 sec)
```

```
mysql> describe income;
```

Field	Type	Null	Key	Default	Extra
incomeid	int	NO	PRI	NULL	
userid	int	YES	MUL	NULL	
amount	decimal(10,2)	YES		NULL	
source	varchar(20)	YES		NULL	
date	date	YES		NULL	

```
5 rows in set (0.039 sec)
```

```
mysql> describe categories;
```

Field	Type	Null	Key	Default	Extra
categoryid	int	NO	PRI	NULL	
name	varchar(20)	YES		NULL	

```
2 rows in set (0.030 sec)
```

```
mysql> describe expences;
```

Field	Type	Null	Key	Default	Extra
expencesid	int	NO	PRI	NULL	
userid	int	YES	MUL	NULL	
categoryid	int	YES	MUL	NULL	
amount	decimal(10,2)	YES		NULL	
description	varchar(50)	YES		NULL	
date	date	YES		NULL	

2. Insert dummy transactions and users data.

```
mysql> insert into users values(1,'Riya','riya@gmail.com'),(2,'Diya','diya4@gmail.com'),(3,'Priya','priya3@gmail.com');
Query OK, 3 rows affected (0.451 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql> insert into categories values(11,'Groceries'),(12,'Rent'),(13,'Utilities');
Query OK, 3 rows affected (0.437 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql> insert into income values(10,1,5000,'Salary','01-07-2025'),(20,2,6000,'Freelancing','03-07-2025'),(30,3,300,'Gift','05-07-2025');
ERROR 1292 (22007): Incorrect date value: '01-07-2025' for column 'date' at row 1
mysql> insert into income values(10,1,5000,'Salary','2025-07-01'),(20,2,6000,'Freelancing','2025-07-03'),(30,3,300,'Gift','2025-07-05');
Query OK, 3 rows affected (0.343 sec)
Records: 3 Duplicates: 0 Warnings: 0

mysql> insert into expenses values(101,3,10,200,'Weekly groceries','2025-07-09'),(102,1,30,1200,'Monthly rent','2025-07-02'),(103,3,30,200,'Electricity bill','2025-07-08');
ERROR 1136 (21S01): Column count doesn't match value count at row 3
mysql> insert into expenses values(101,3,10,200,'Weekly groceries','2025-07-09'),(102,1,30,1200,'Monthly rent','2025-07-02'),(103,3,30,200,'Electricity bill','2025-07-08');
ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails ('finance`.`expenses`, CONSTRAINT `expenses_ibfk_2` FOREIGN KEY (`categoryid`) REFERENCES `categories` (`categoryid`))
mysql> insert into expenses values(101,3,11,200,'Weekly groceries','2025-07-09'),(102,1,12,1200,'Monthly rent','2025-07-02'),(103,3,11,200,'Electricity bill','2025-07-08');
Query OK, 3 rows affected (0.086 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> select * from users;
+-----+-----+-----+
| userid | name  | email          |
+-----+-----+-----+
| 1      | Riya  | riya@gmail.com |
| 2      | Diya  | diya4@gmail.com |
| 3      | Priya | priya3@gmail.com |
+-----+-----+-----+
3 rows in set (0.021 sec)

mysql> select * from categories;
+-----+-----+
| categoryid | name      |
+-----+-----+
| 11          | Groceries |
| 12          | Rent      |
| 13          | Utilities |
+-----+-----+
3 rows in set (0.023 sec)

mysql> select * from income;
+-----+-----+-----+-----+-----+
| incomeid | userid | amount | source      | date      |
+-----+-----+-----+-----+-----+
| 10       | 1      | 5000.00 | Salary      | 2025-07-01 |
| 20       | 2      | 6000.00 | Freelancing | 2025-07-03 |
| 30       | 3      | 300.00  | Gift        | 2025-07-05 |
+-----+-----+-----+-----+-----+
3 rows in set (0.011 sec)
```

```
mysql> select * from expenses;
+-----+-----+-----+-----+-----+-----+
| expensesid | userid | categoryid | amount | description      | date      |
+-----+-----+-----+-----+-----+-----+
| 101        | 3      | 11         | 200.00 | Weekly groceries | 2025-07-09 |
| 102        | 1      | 12         | 1200.00 | Monthly rent     | 2025-07-02 |
| 103        | 3      | 11         | 200.00 | Electricity bill | 2025-07-08 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.009 sec)
```

3. Write a queries to summerize expenses monthly

```
mysql> select userid, date_format(date,'%Y-%m') as month, sum(amount) as total_expense from expenses group by userid, month;
+-----+-----+-----+
| userid | month  | total_expense |
+-----+-----+-----+
| 3      | 2025-07 | 400.00        |
| 1      | 2025-07 | 1200.00        |
+-----+-----+-----+
2 rows in set (0.043 sec)
```

4. Use GROUP BY for category-wise spending.

```
mysql> select u.name, c.name as category, sum(e.amount) as total_spent from expenses e join users u on e.userid= u.userid join categories c on e.categoryid= c.categoryid group by u.name, c.name;
```

name	category	total_spent
Priya	Groceries	400.00
Riya	Rent	1200.00

```
2 rows in set (0.034 sec)
```

5. Create views for balancing tracking.

```
mysql> CREATE VIEW usermonthlybalance AS
-> SELECT
->     u.userid,
->     u.name,
->     DATE_FORMAT(i.date, '%Y-%m') AS month,
->     COALESCE(SUM(i.amount), 0) AS total_income,
->     COALESCE(SUM(e.amount), 0) AS total_expenses,
->     COALESCE(SUM(i.amount), 0) - COALESCE(SUM(e.amount), 0) AS balance
-> FROM users u
-> LEFT JOIN income i ON u.userid = i.userid AND DATE_FORMAT(i.date, '%Y-%m') = DATE_FORMAT(CURDATE(), '%Y-%m')
-> LEFT JOIN expenses e ON u.userid = e.userid AND DATE_FORMAT(e.date, '%Y-%m') = DATE_FORMAT(CURDATE(), '%Y-%m')
-> GROUP BY u.userid, u.name, DATE_FORMAT(i.date, '%Y-%m');
```

query OK, 0 rows affected (0.184 sec)

6. Export monthly reports.

```
mysql> select * from usermonthlybalance;
```

userid	name	month	total_income	total_expenses	balance
1	Riya	2025-07	5000.00	1200.00	3800.00
2	Diya	2025-07	6000.00	0.00	6000.00
3	Priya	2025-07	600.00	400.00	200.00

```
3 rows in set (0.114 sec)
```