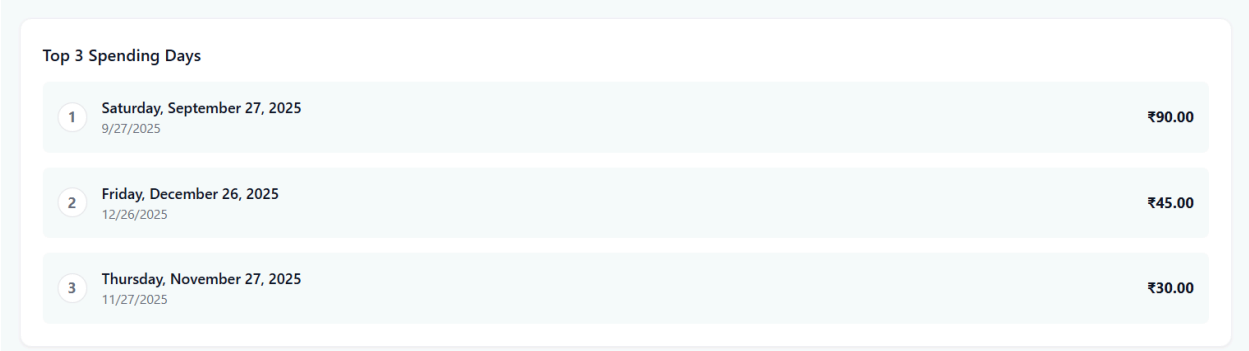
Statistics

Here,you can see Statistics of each user on UI , by navigating to /statistics - and selecting a user from dropdown.

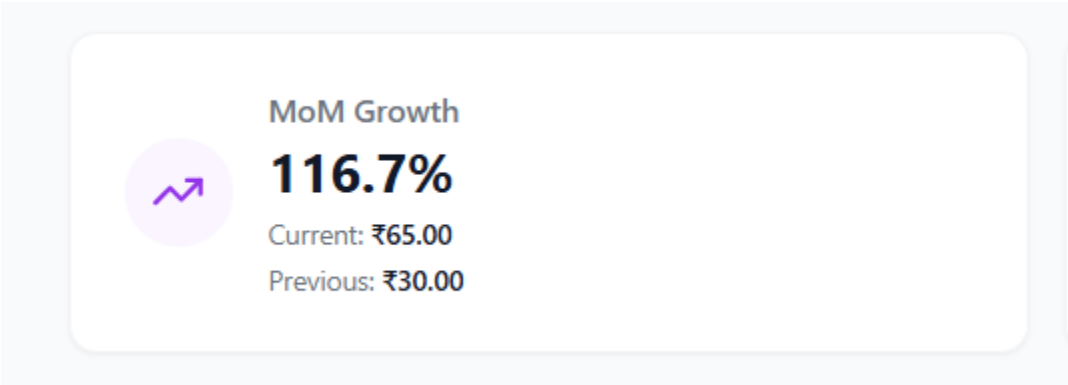
Stats 1 - Find each user's top 3 days (by total expenditure), ordered by the total amount spent.



Logic/Query :

```
SELECT date, SUM(amount) as total_amount
      FROM Expenses
      WHERE user_id = ?
      GROUP BY date
      ORDER BY total_amount DESC
      LIMIT 3
```

Stats 2 - Calculate the percentage change in total expenditure from the previous month for each user.

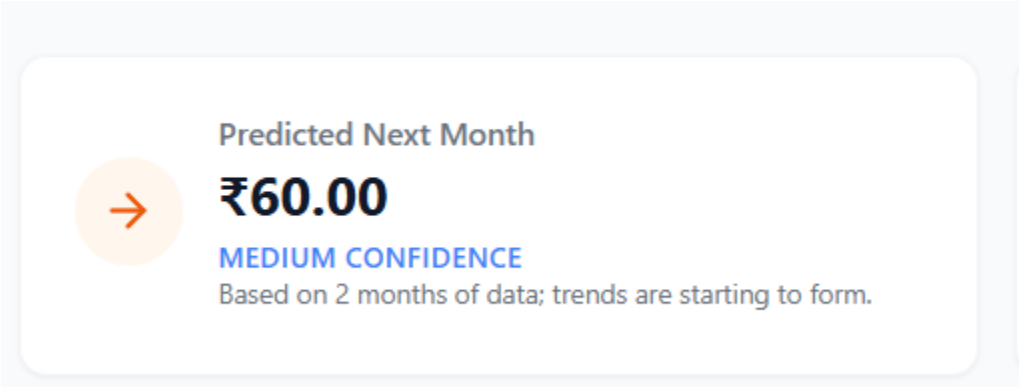


Logic/Query:

```
        const sqlCurrent = `
      SELECT SUM(amount) as total
      FROM Expenses
      WHERE user_id = ? AND MONTH(date) = ? AND YEAR(date) = ?
    `;

        const sqlPrevious = `
      SELECT SUM(amount) as total
      FROM Expenses
      WHERE user_id = ? AND MONTH(date) = ? AND YEAR(date) = ?
    `;

        const [currResult] = await db.query(sqlCurrent, [userId,
currentMonth, currentYear]);
        const [prevResult] = await db.query(sqlPrevious, [userId,
previousMonth, previousYear]);

        const currentTotal = currResult[0].total || 0;
        const previousTotal = prevResult[0].total || 0;

        if (previousTotal === 0) {
            return res.json({
                currentMonth: currentTotal,
```

```
                previousMonth: previousTotal,
                percentageChange: null,
                message: "Insufficient data to calculate month-over-month
change"
            });
        }

        const percentageChange = ((currentTotal - previousTotal) /
previousTotal) * 100;
```

Stats 3 - Predict the next month's total expenditure based on the average spending of the last 3 months.



Logic/Query :

```
  SELECT
        YEAR(date) AS year,
        MONTH(date) AS month,
        SUM(amount) AS total
      FROM Expenses
      WHERE user_id = ?
        AND date >= DATE_SUB(DATE_FORMAT(CURDATE(), '%Y-%m-01'), INTERVAL
3 MONTH)
        AND date < DATE_FORMAT(CURDATE(), '%Y-%m-01')
      GROUP BY year, month
      ORDER BY year DESC, month DESC
```