

Bellabet Case studies

(Link: [Documents](#))

Ask

Sršen asks you to analyse smart device usage data in order to gain insight into how consumers use non-Bellabet smart devices. She then wants you to select one Bellabet product to apply these insights to in your presentation.

1. What are some trends in smart device usage?
2. How could these trends apply to Bellabet customers?
3. How could these trends help influence Bellabet marketing strategy?

Prepare

I used Fitbit Fitness Tracker Data (CC0: Public Domain, dataset made available through Kaggle): This Kaggle data set contains personal fitness tracker from thirty-three Fitbit users. Thirty-three eligible Fitbit users consented to the submission of personal tracker data, including minute-level output for physical activity, heart rate, and sleep monitoring. It includes information about daily activity, steps, and heart rate that can be used to explore users' habits.

I extracted this data and saved it in the folder in the "*.csv" format.

I used Excel "filter" function and established that the heart rate and the weight log data is only for the 8 individuals. It helped me to conclude that the heart rate and weight log data is biased and incomplete, and I have skipped these data set from further analysis.

The 'Daily activity merged' data set was found to be complete, and I used it for my analysis. The 'Total steps' data of the thirty-three users, totalling to 941 rows data is available for a period of 12th April 2016 to 12th May 2016.

I prepared an Excel "spreadsheet table" containing columns as the user Id, Activity Date, and Total steps. I named the spreadsheet as "Total steps".

Process

I have used "remove duplicate" excel function to remove the duplicate data entry.

Further, I used the "filter" function to find any blank field. There was one blank row with no Id and Activity Date information, and it was removed.

I used "Text to Column" function to cleaned up 'Activity Dates' those were not in consistent format.

I ensured that the cleaned and consistent "Total steps" data for the period 12th April 2016 to 12th May 2016 is available for each customer.

Analyse

To undertake further analysis of the data, I have exported the "Total steps" *.csv file to **SQL** and counted the number of customers using SQL query:

```
SELECT COUNT (DISTINCT Id) AS Total customers
```

```
FROM `bellabet-393909.Steps_analysis.Steps_data`
```

From the result I could establish that the data is for 33 customers and not 30.

By using following query, I obtained the average steps of each customer for the data set covering period of 4th April 2016 to 4th May 2016.

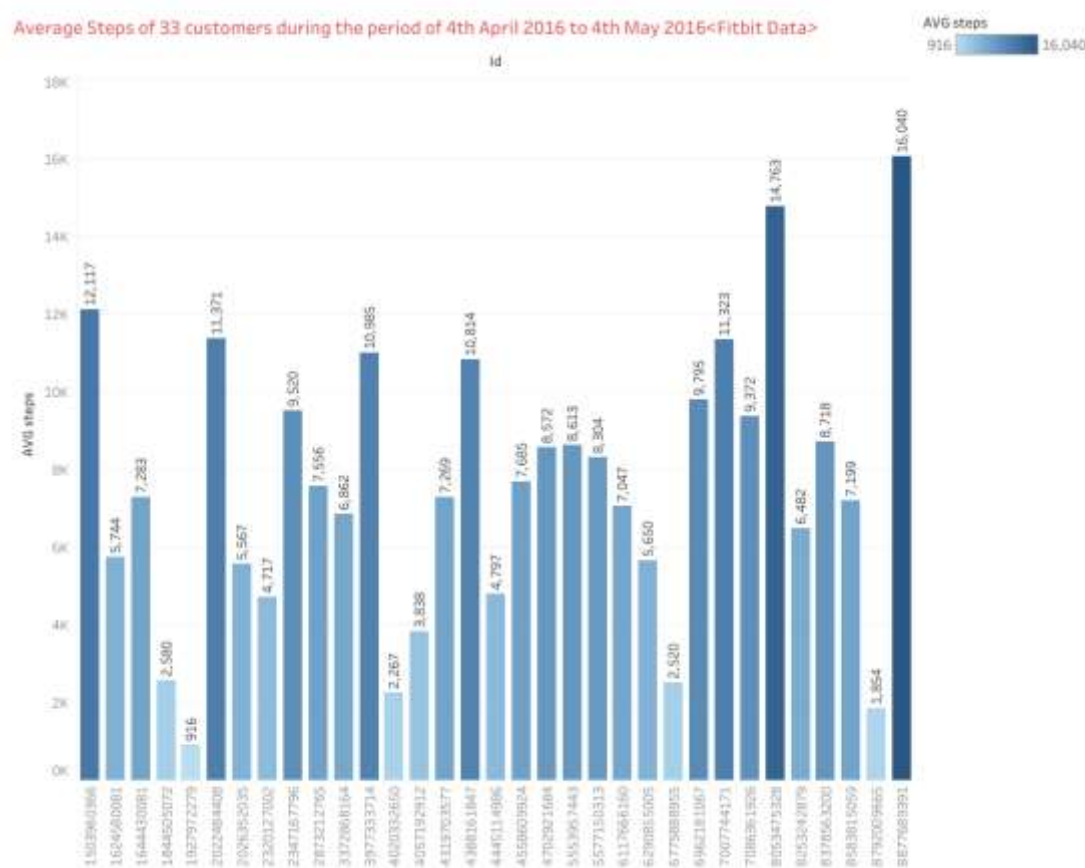
```
SELECT  
Id,  
ROUND(AVG(StepTotal)) AS AVG_steps  
FROM `bellabet-393909.Fitbit.Daily_steps`  
GROUP BY  
Id
```

I saved the result in *.csv format with file name "Average steps".

Share

I uploaded the "Average steps.csv" file in **Tableau** for visualisation of average number of steps done by 33 Fitbit customers during the period of 4th April 2016 to 4th May 2016.

I chose column (also referred to as bar chart) chart to show the result.



Further, I composed the **SQL** query and used average steps data to find out how many users do average 5000 or more steps per day.

```
SELECT Id,  
FROM `bellabet-393909.Steps_analysis.Average_steps_result`  
WHERE
```

AVG_steps>5000

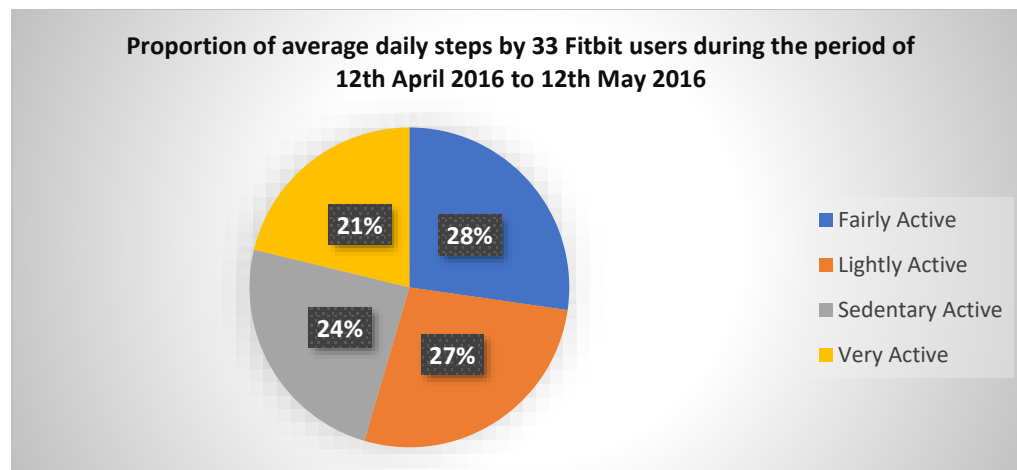
The result showed that 25 Fitbit users out of 33 did more than 5000 average steps per day. To determine the proportion of Average daily steps, I ran the following SQL query:

```
SELECT
AVG_steps,
(CASE
WHEN AVG_steps<5000 THEN "Sedentary"
WHEN AVG_steps>=5000 AND AVG_steps<7499 THEN "Lightly_active"
WHEN AVG_steps>=7500 AND AVG_steps<9999 THEN "Fairly_active"
WHEN AVG_steps>=10000 THEN "Very_active"
END) AS Users_activity
FROM
`bellabet-393909.Steps_analysis.Average_steps_result`
```

I saved the result as a *.csv file and calculated the percentage.

Activity	Total users	percentage
Sedentary Active, steps < 5000	8	24.24
Lightly Active, steps 5000 to 7499	9	27.27
Fairly Active, steps 7500 to 9999	9	27.27
Very Active, steps > 10000	7	21.21
Total	33	100

Using this information, I created a Pie chart using Excel function that graphically represents distribution of the activeness.



To determine the days of the week when users are most or least active, I extracted the days from the Activity dates by using Excel formula =TEXT(B2," DDDD"). Further, I exported this file to SQL and ran following Query:

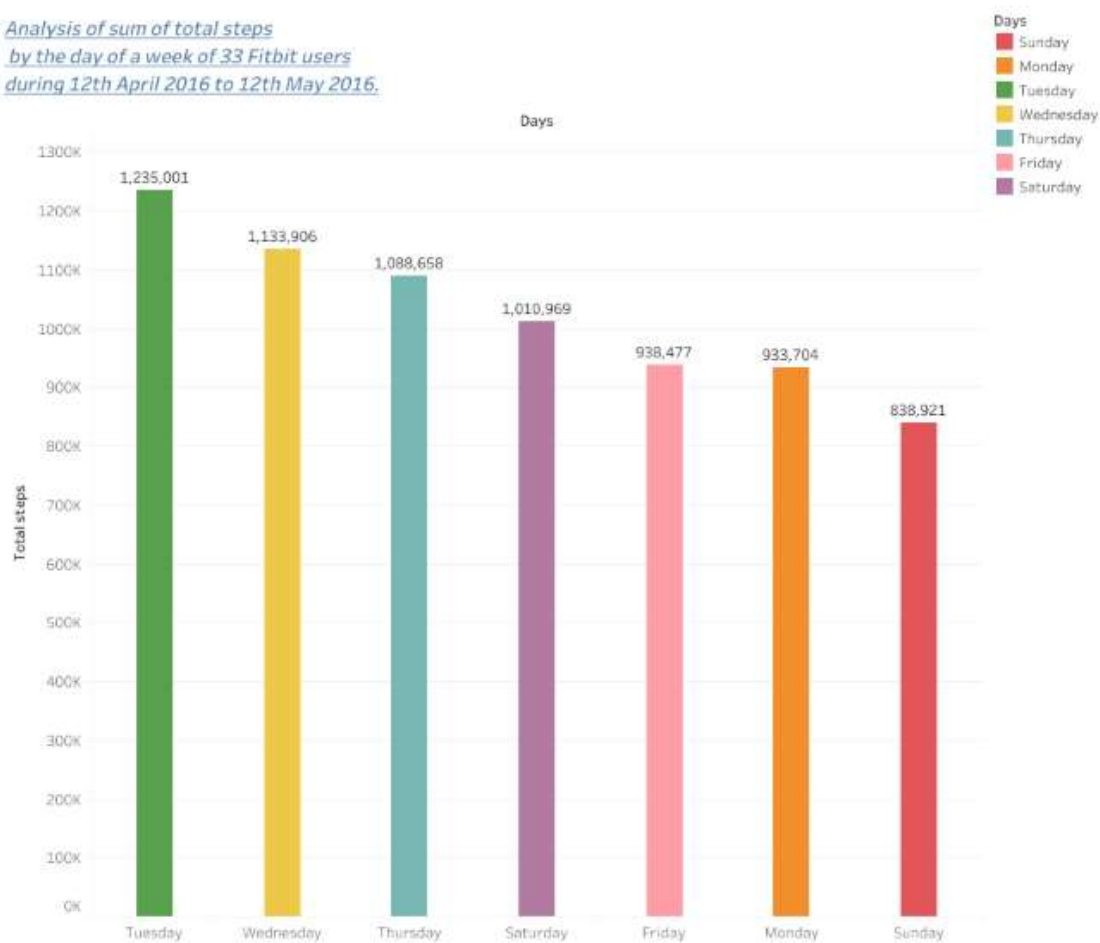
```
SELECT
DAYS,
ROUND(sum(TotalSteps),2) AS Total_steps
FROM `bellabet-393909.Steps_analysis.Days_analysis`
group by
DAYS
```

Mrs Kavita Shinde
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DAYS	Total steps
Sunday	838921
Monday	933704
Friday	938477
Saturday	1010969
Thursday	1088658
Wednesday	1133906
Tuesday	1235001

By using this result I have made the **Tableau visualization** showing Sum Total steps by Fitbit users on days of the weeks from 12th April 2016 to 12th May 2016.

*Analysis of sum of total steps
by the day of a week of 33 Fitbit users
during 12th April 2016 to 12th May 2016.*



Conclusion and Act

My analysis on Total steps per day by 33 Fitbit users shows that out of 33 Fitbit users, 25 users do average 5000 or more steps per day but according to The Medicine and Science in sports and exercise study found that for general fitness most adults should aim for at least 5000 steps per day.

By analysing the data about Activity Dates, I found out that users made less steps on Sundays, that means they are less active on Sundays.

My advice to Bellabet to add features in their app which could motive customer to:

1. Motivate the users to accomplish 5000 or more steps a day, and
2. Motivate users to improve their activeness on Sundays.