Imporving marketing strategies for Bellabeat products

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To analyze trends in Bellabeat data to improve marketing strategies

Bellabeat is a high-tech manufacturer of health-focused products for women. Our goal is to analyze smart device usage data in order to gain insight into how people are already using their smart devices.Then we will provide high-level recommendations for how these trends can improve Bellabeat marketing strategy. We will be using the dataset [!link] (https://www.kaggle.com/arashnic/fitbit)

Installing packages needed

```
install.packages("tidyverse")
```

```
## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.1'
## (as 'lib' is unspecified)
```

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.6     v dplyr   1.0.8
## v tidyr   1.2.0     v stringr 1.4.0
## v readr   2.1.2     v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

Creating data frames for CSV files

```
dailyactivity_df <- read.csv("dailyActivity_merged.csv")
dailysteps_df <- read.csv("dailySteps_merged.csv")
weight_df <- read.csv("weightLogInfo_merged.csv")
```

Viewing col names

```
colnames(weight_df)
```

```
## [1] "Id"             "Date"           "WeightKg"       "WeightPounds"
## [5] "Fat"            "BMI"            "IsManualReport" "LogId"
```

```
colnames(dailysteps_df)
```

```
## [1] "Id"          "ActivityDay" "StepTotal"
```

```
colnames(dailyactivity_df)
```

```
##  [1] "Id"                       "ActivityDate"
##  [3] "TotalSteps"               "TotalDistance"
```

```
##  [5] "TrackerDistance"          "LoggedActivitiesDistance"
##  [7] "VeryActiveDistance"       "ModeratelyActiveDistance"
##  [9] "LightActiveDistance"      "SedentaryActiveDistance"
## [11] "VeryActiveMinutes"        "FairlyActiveMinutes"
## [13] "LightlyActiveMinutes"     "SedentaryMinutes"
## [15] "Calories"
```

Viewing summary

```
dailyactivity_df %>%
  select(TotalSteps,
         SedentaryMinutes) %>%
  summary()
```

```
##    TotalSteps    SedentaryMinutes
##  Min.   :    0   Min.   :   0.0
##  1st Qu.: 3790   1st Qu.: 729.8
##  Median : 7406   Median :1057.5
##  Mean   : 7638   Mean   : 991.2
##  3rd Qu.:10727   3rd Qu.:1229.5
##  Max.   :36019   Max.   :1440.0
```

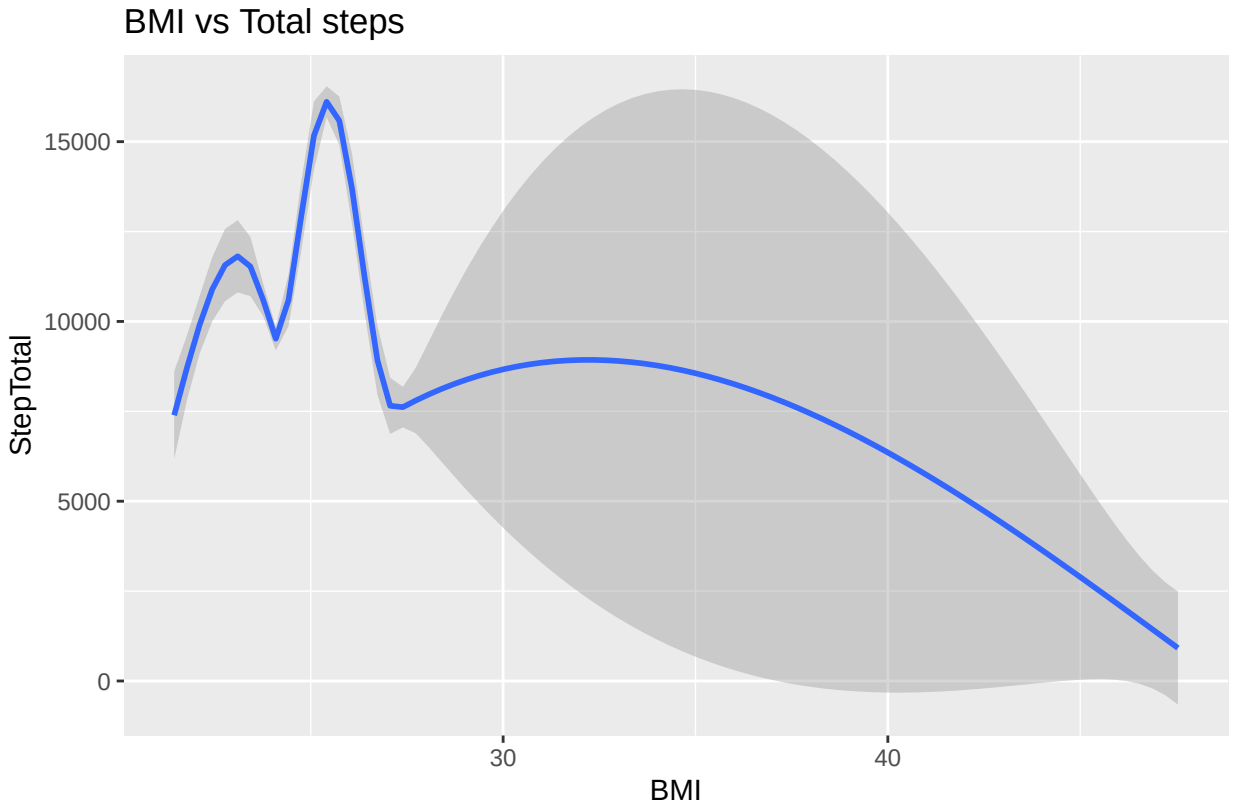
Joining data frames dailysteps and weight to identify patterns

```
results_bmi_df<-merge(x=weight_df,y=dailysteps_df,by="Id",all.x=FALSE, all.y=FALSE)
```

Visualisation to identify trends between BMI and total no.of steps

```
ggplot(data = results_bmi_df,aes(x = BMI,y = StepTotal))+ geom_smooth(aes(color = BMI))+labs(title="BMI
```

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```



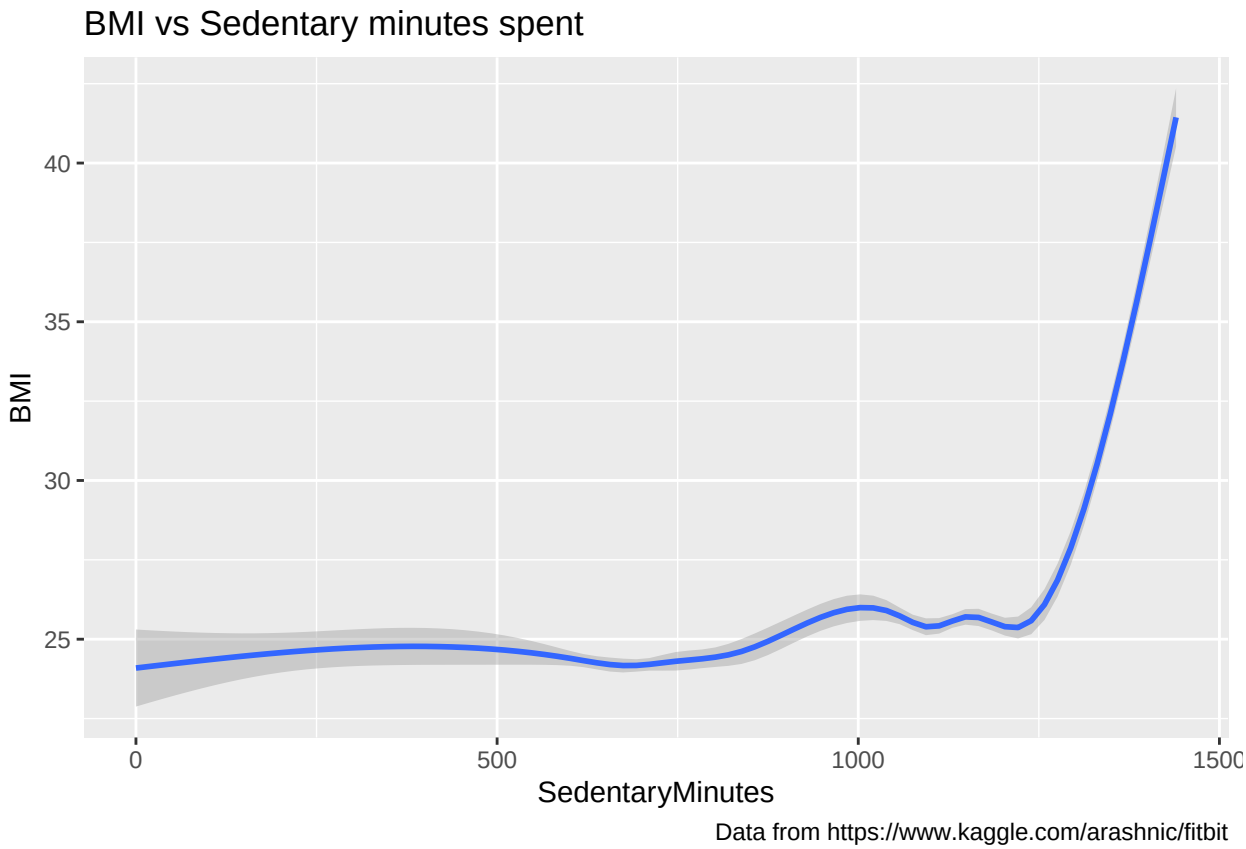
Joining data frames weight and dailyactivity to check any patterns

```
results_steps_df <- merge(x=dailyactivity_df,y=weight_df,by="Id",all.x=FALSE,all.y=FALSE)
```

Visualisation to identify trends between BMI and sedentary minutes

```
ggplot(data = results_steps_df)+geom_smooth(mapping =aes(x = SedentaryMinutes,y = BMI))+labs(title ="BM
```

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```



Analysis

By observing above two visualizations, it is clear that people with higher BMI (more than 25) tend to walk less number of steps and their sedentary minutes are also more compared to people with lesser BMI.

Conclusion

BMI definitely plays a major role in staying fit and leading a healthy life. Suggestion would be to create a target goal (no. of steps, increasing active minutes) for people according to their BMI to achieve good results for them. This personalized target will be different for each individual and monitoring, tracking this is really essential so that the users can benefit from Bellabeat products as much as possible.This will inturn create a good customer feedback and increase number of people using Bellabeat for guaranteed and accurate goal achievement.