

PREPINSTA
SUMMER INTERNSHIP

CAPSTONE PROJECT
FITNESS Dataset EDA & Dashboard
Using Google Colab & Tableau

Report & Analysis by
TUSHAR GUPTA

Acknowledgement

Under the mentorship of *Sir Rishikesh Konapure*, I analyzed *FitBit Fitness Tracker* App data. Extracting insights from minute-level data of 30 Fitbit users, I used Python and Pandas for cleaning, transformation, and analysis. The diverse dataset, generated via Amazon Mechanical Turk, provided trends on user behavior. Deliverables included a concise summary, data source descriptions, cleaning documentations, visualizations, key findings, and high-level content insights.

DATASETS

1. Uncleaned Data: -

- Daily Activity, Daily Calories, Daily Steps, Daily Intensities, Heart Rate, Hourly Calories, Hourly Steps, Hourly Intensities, Minute MET, Minute Sleep, Minute Steps, Sleep Day, Weight Log

2. Cleaned & Merged Data: -

- latest_merged_DailyStats

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	
1	Id	Activity	Da	TotalSteps	TotalDista	TrackerDit	LoggedAct	VeryActive	Moderate	Light	Active	Sedentary	VeryActive	FairlyActi	LightlyAct	Sedentary	Calories	DailyAver	TotalSlees	TotalMinu	TotalTime	Weight	BMI										
2	1.5E+09	#####		13162	8.5	8.5	0	1.88	0.55	6.06	0	25	13	328	728	1985			1	327	346												
3	1.5E+09	#####		10735	6.97	6.97	0	1.57	0.69	4.71	0	21	19	217	776	1797			2	384	407												
4	1.5E+09	#####		10460	6.74	6.74	0	2.44	0.4	3.91	0	30	11	181	1218	1776																	
5	1.5E+09	#####		9762	6.28	6.28	0	2.14	1.26	2.83	0	29	34	209	726	1745			1	412	442												
6	1.5E+09	#####		12669	8.16	8.16	0	2.71	0.41	5.04	0	36	10	221	773	1863			2	340	367												
7	1.5E+09	#####		9705	6.48	6.48	0	3.19	0.78	2.51	0	38	20	164	539	1728			1	700	712												
8	1.5E+09	#####		13019	8.59	8.59	0	3.25	0.64	4.71	0	42	16	233	1149	1921																	
9	1.5E+09	#####		15506	9.88	9.88	0	3.53	1.32	5.03	0	50	31	264	775	2035			1	304	320												
10	1.5E+09	#####		10544	6.68	6.68	0	1.96	0.48	4.24	0	28	12	205	818	1786			1	360	377												
11	1.5E+09	#####		9819	6.34	6.34	0	1.34	0.35	4.65	0	19	8	211	838	1775			1	325	364												
12	1.5E+09	#####		12764	8.13	8.13	0	4.76	1.12	2.24	0	66	27	130	1217	1827																	
13	1.5E+09	#####		14371	9.04	9.04	0	2.81	0.87	5.36	0	41	21	262	732	1949			1	361	384												
14	1.5E+09	#####		10039	6.41	6.41	0	2.92	0.21	3.28	0	39	5	238	709	1788			1	430	449												
15	1.5E+09	#####		15355	9.8	9.8	0	5.29	0.57	3.94	0	73	14	216	814	2013			1	277	323												
16	1.5E+09	#####		13755	8.79	8.79	0	2.33	0.92	5.54	0	31	23	279	833	1970			1	245	274												
17	1.5E+09	#####		18134	12.21	12.21	0	6.4	0.41	5.41	0	78	11	243	1108	2159																	
18	1.5E+09	#####		13154	8.53	8.53	0	3.54	1.16	3.79	0	48	28	189	782	1898			1	366	393												
19	1.5E+09	#####		11181	7.15	7.15	0	1.06	0.5	5.58	0	16	12	243	815	1837			1	341	354												
20	1.5E+09	#####		14673	9.25	9.25	0	3.56	1.42	4.27	0	52	34	217	712	1947			1	404	425												

- merged_hourlyStats

[illegible]

- merged_minutes_latest

[illegible]

EXPLORATORY DATA ANALYSIS

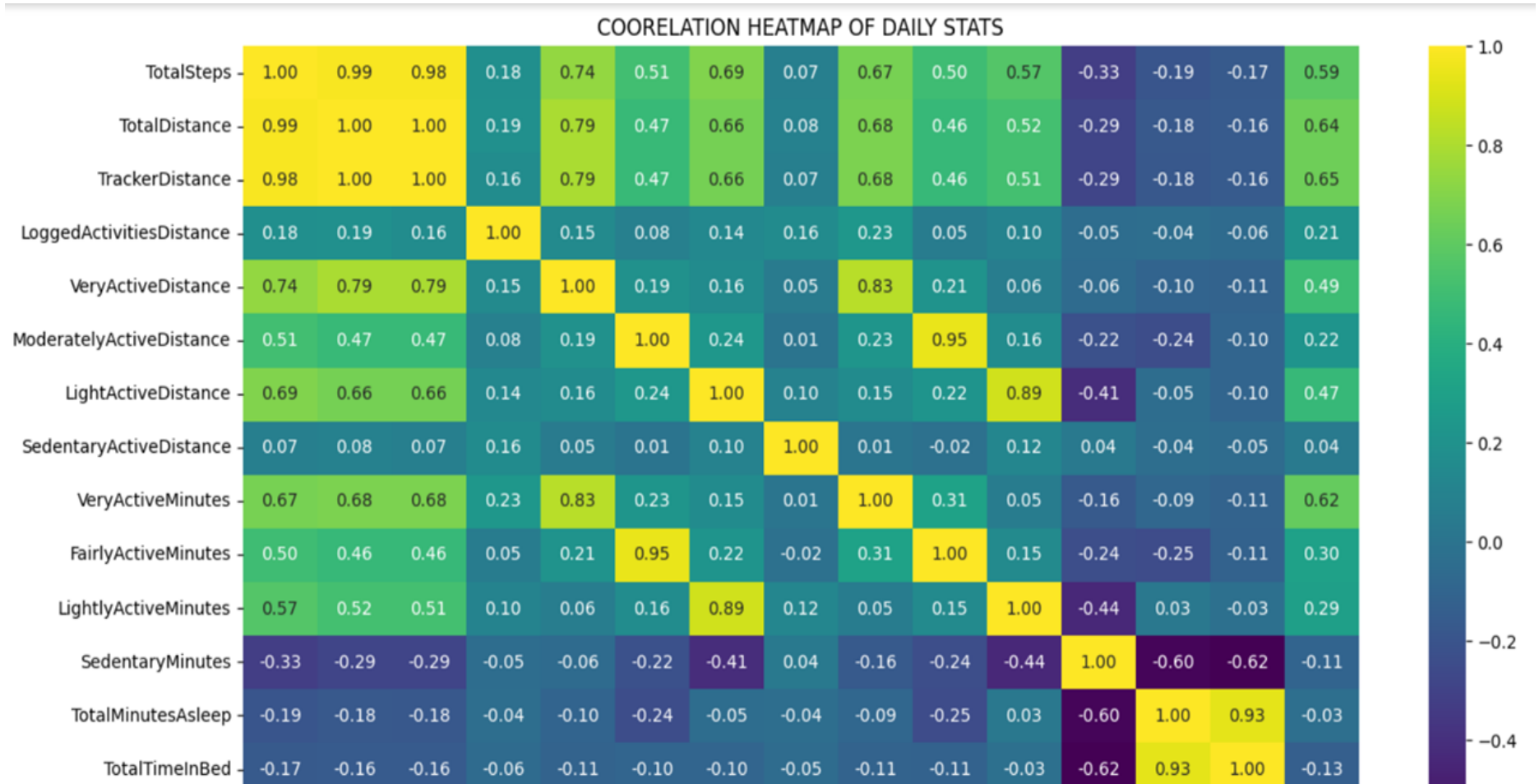
USING GOOGLE COLAB

1. DAILY STATS: -

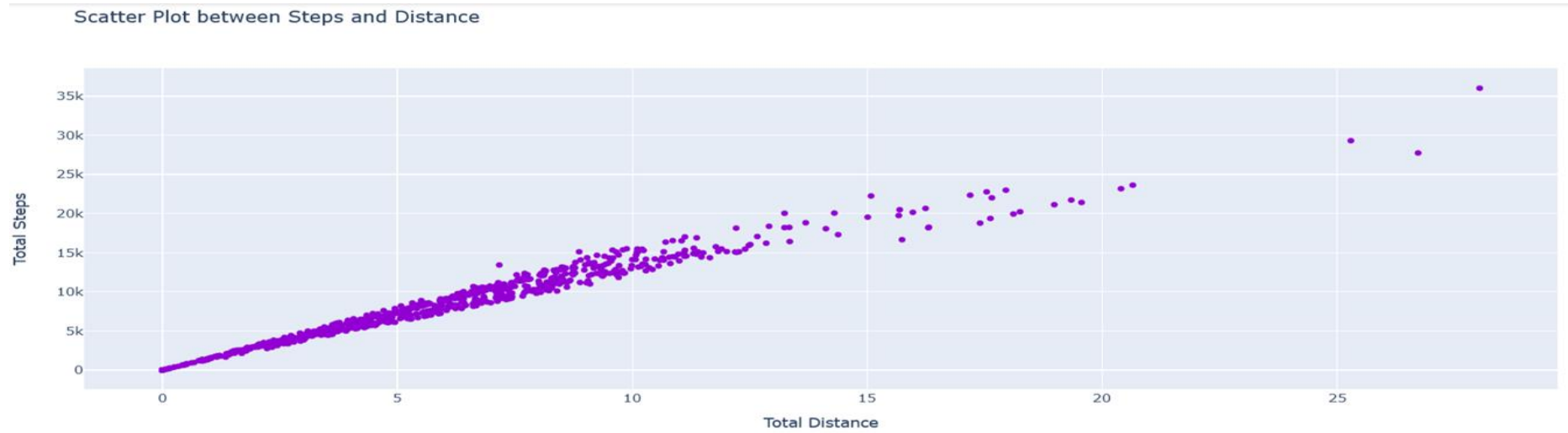
➤ Correlation Analysis-

	Id	TotalSteps	TotalDistance	TrackerDistance	LoggedActivitiesDistance	VeryActiveDistance	ModeratelyActiveDistance	LightActiveDistance
Id	1.000000	0.185721	0.241000	0.238816	0.187965	0.308691	0.026665	0.019629
TotalSteps	0.185721	1.000000	0.985369	0.984822	0.181850	0.740115	0.507105	0.692208
TotalDistance	0.241000	0.985369	1.000000	0.999505	0.188323	0.794582	0.470758	0.662002
TrackerDistance	0.238816	0.984822	0.999505	1.000000	0.162572	0.794338	0.470277	0.661365
LoggedActivitiesDistance	0.187965	0.181850	0.188323	0.162572	1.000000	0.150843	0.076539	0.138291
VeryActiveDistance	0.308691	0.740115	0.794582	0.794338	0.150843	1.000000	0.192986	0.157669
ModeratelyActiveDistance	0.026665	0.507105	0.470758	0.470277	0.076539	0.192986	1.000000	0.237847
LightActiveDistance	0.019629	0.692208	0.662002	0.661365	0.138291	0.157669	0.237847	1.000000

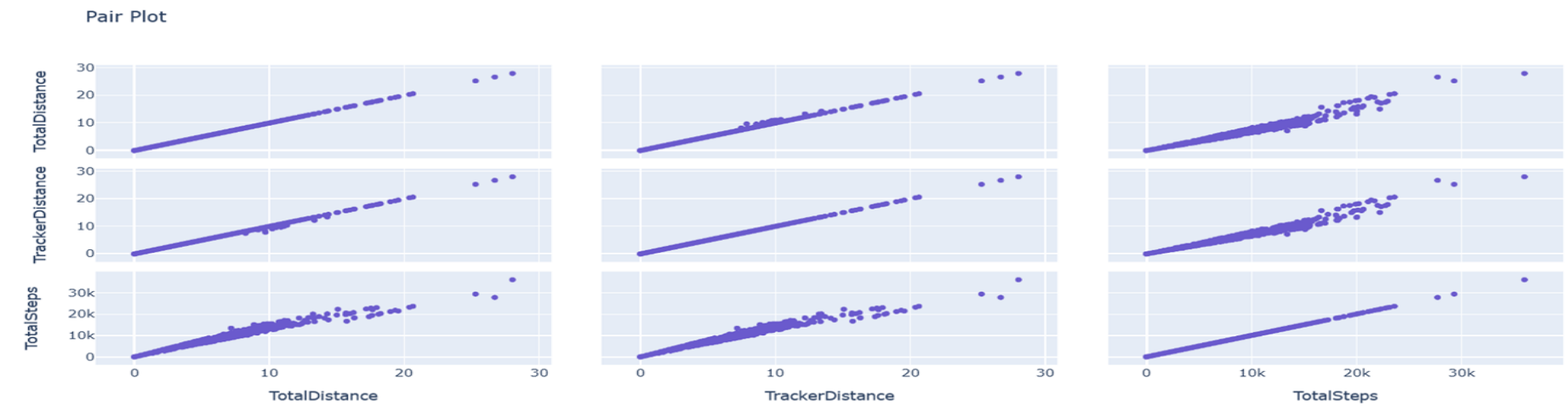
➤ HEAT MAP



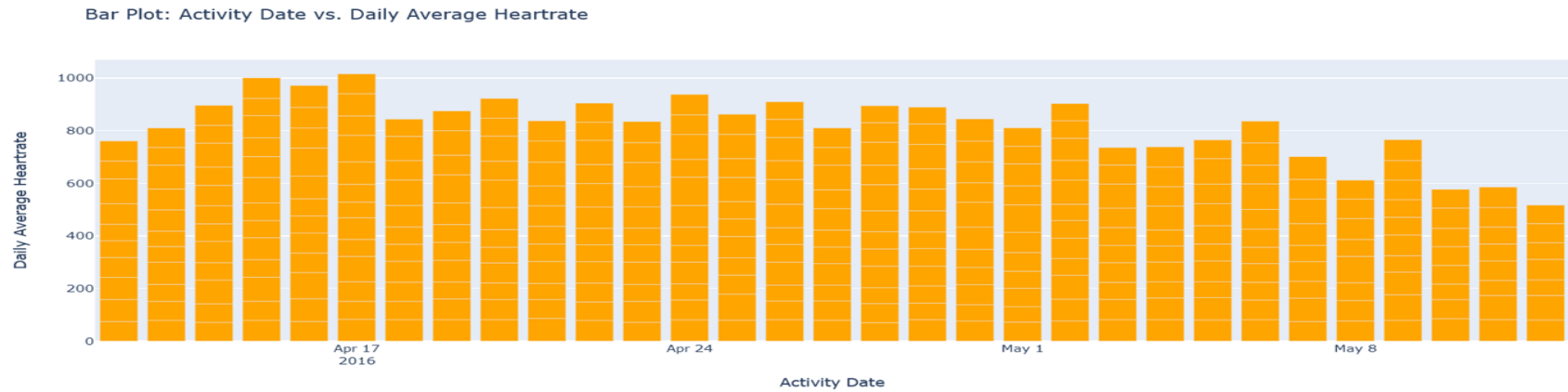
➤ SCATTER PLOT



➤ PAIR PLOT

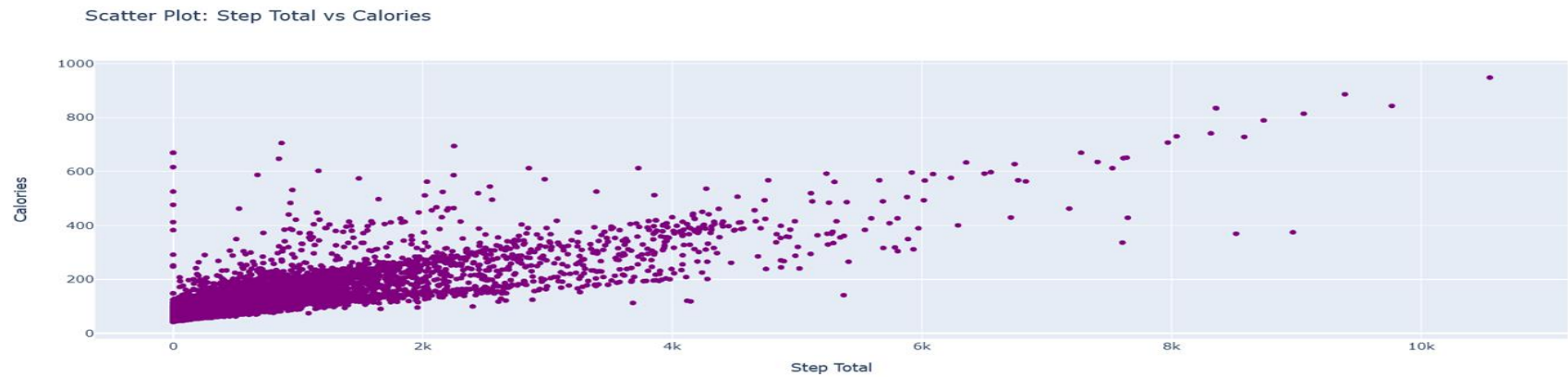


➤ BAR CHART

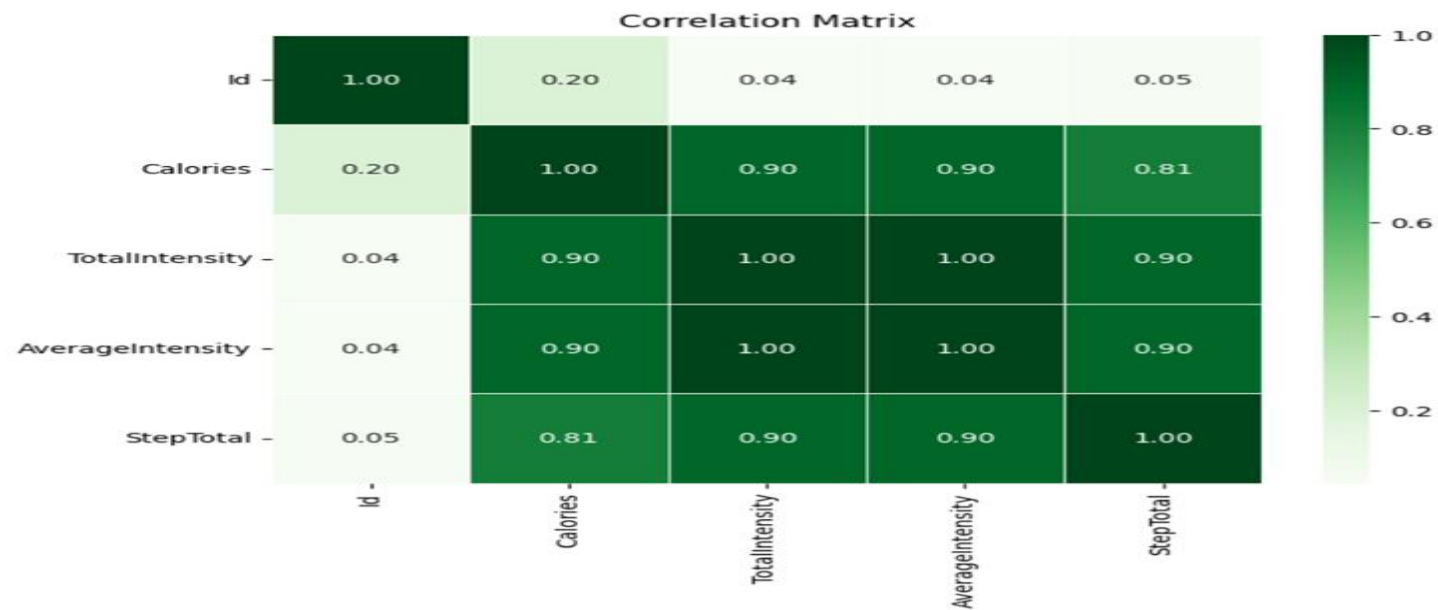


2. HOURLY STATS: -

➤ SCATTER PLOT

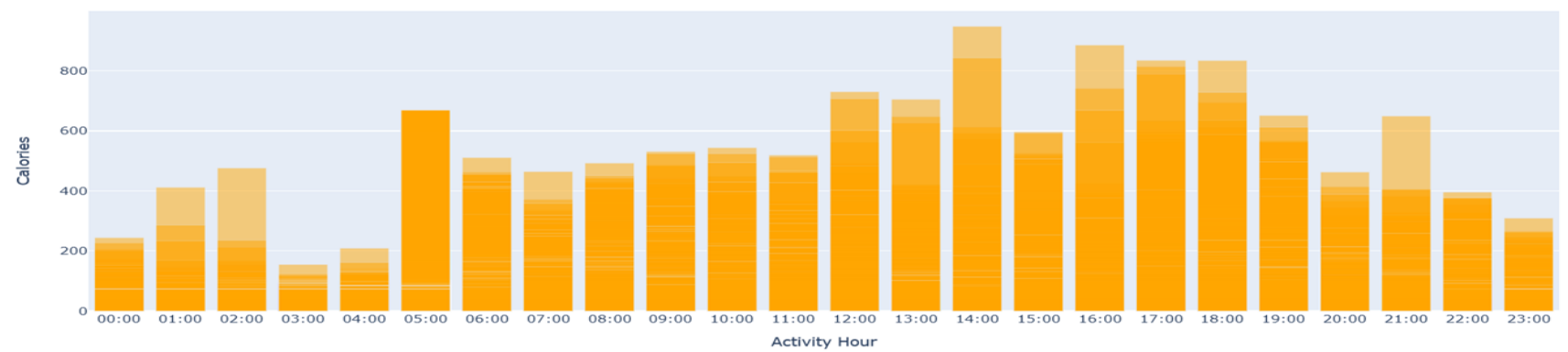


➤ HEAT MAP



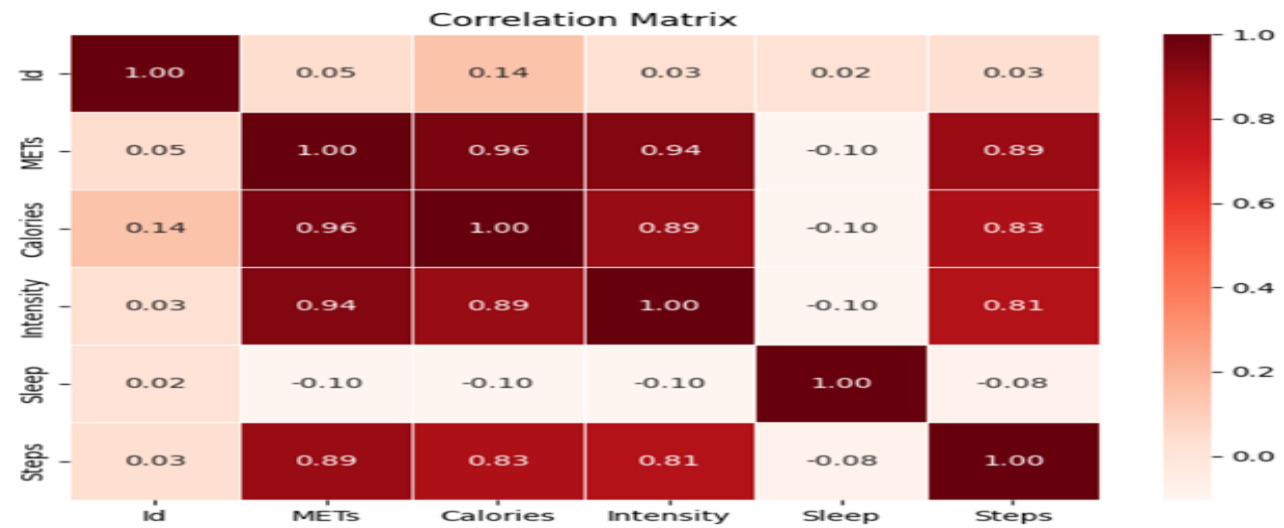
➤ BAR CHART

Calories per Hour

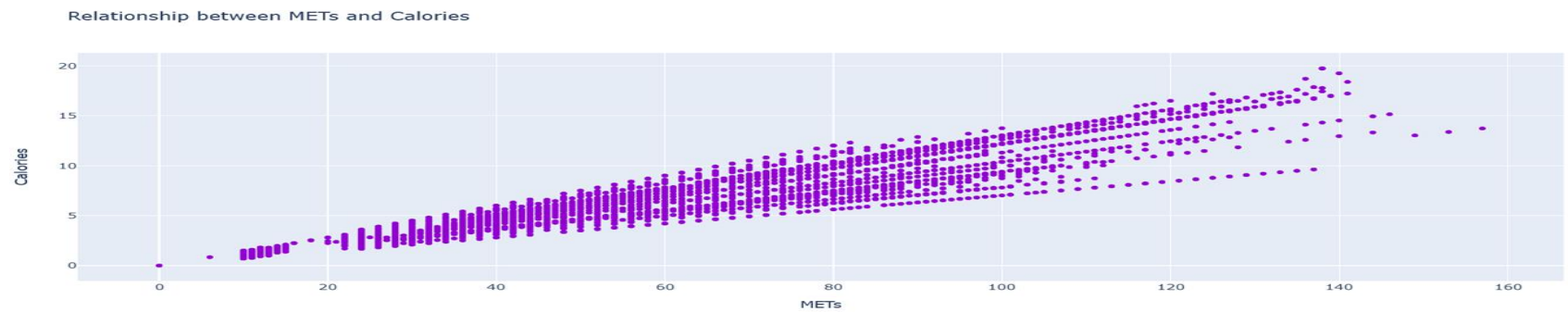


3. MINUTE STATS: -

➤ HEAT MAP

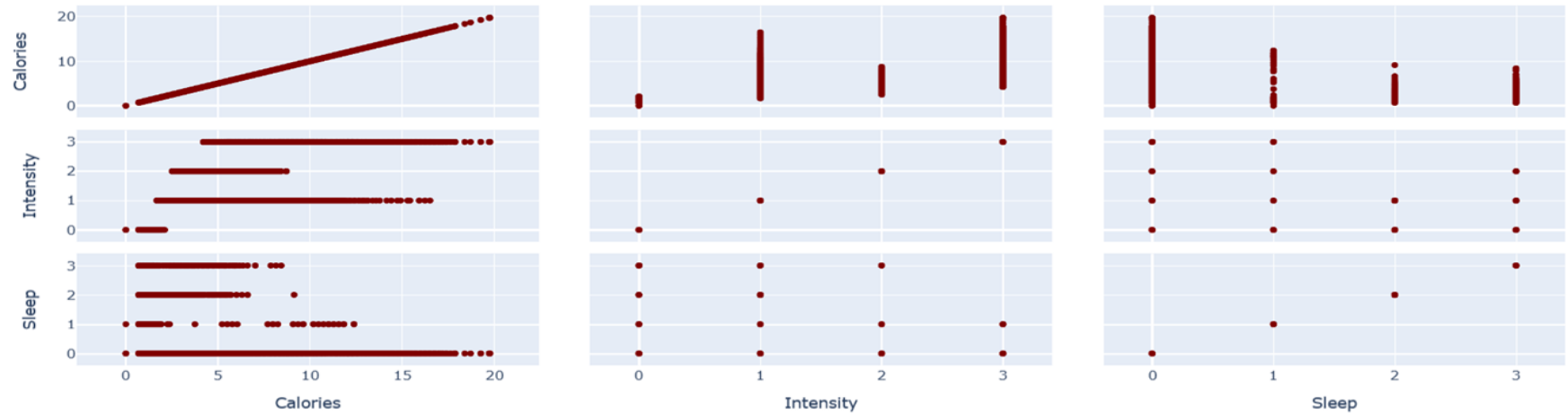


➤ SCATTER PLOT



➤ PAIR PLOT

PAIR PLOT BETWEEN CALORIES, INTENSITY & SLEEP



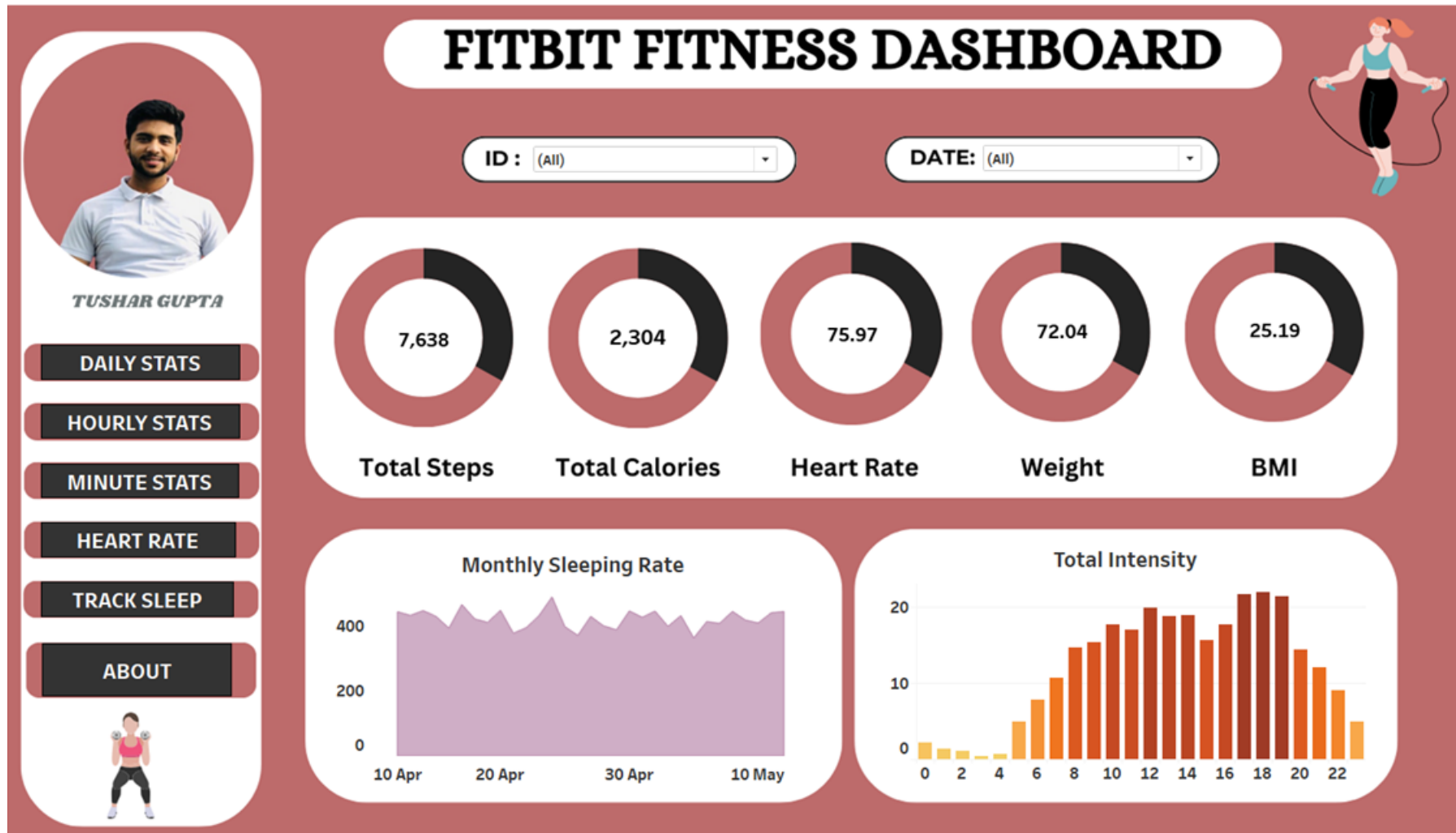
FITBIT FITNESS DASHBOARD

➤ IMPORTING DATASETS IN TABLEAU-

The screenshot displays the Tableau Public Desktop interface. On the left, the 'Connections' pane lists several text files: clean_hourlystats, merged_hourlyStats, merged_minutes_latest, latest_merged_DailyStats, and clean_heartRate. Below this, the 'Files' section shows a list of CSV files including clean_hourlyCalories.csv, clean_hourlyIntensity.csv, clean_hourlystats.csv, clean_hourlySteps.csv, merged_hourlyStats.csv, and merged_minutes_latest.csv. The central workspace, titled 'clean_hourlystats', shows a diagram where 'latest_merged_DailyStats...' is connected to 'merged_hourlyStats.csv' and 'merged_minutes_latest...'. The bottom pane shows the 'latest_merged_DailyStats.csv' dataset with fields: Id1, Activity Date, Total Steps, Total Distance, Tracker Distance, and Log. The 'Fields' section at the bottom left shows a table with columns: Type, Field Name, Physical Activity, and Remaining Time. The table contains two rows: one for 'Id1' (Physical Activity: latest_m..., Remaining Time: Id) and one for 'Activity Date' (Physical Activity: latest_m..., Remaining Time: Activit...). On the right, there are buttons for 'Update Now' and 'Update Automatically'.

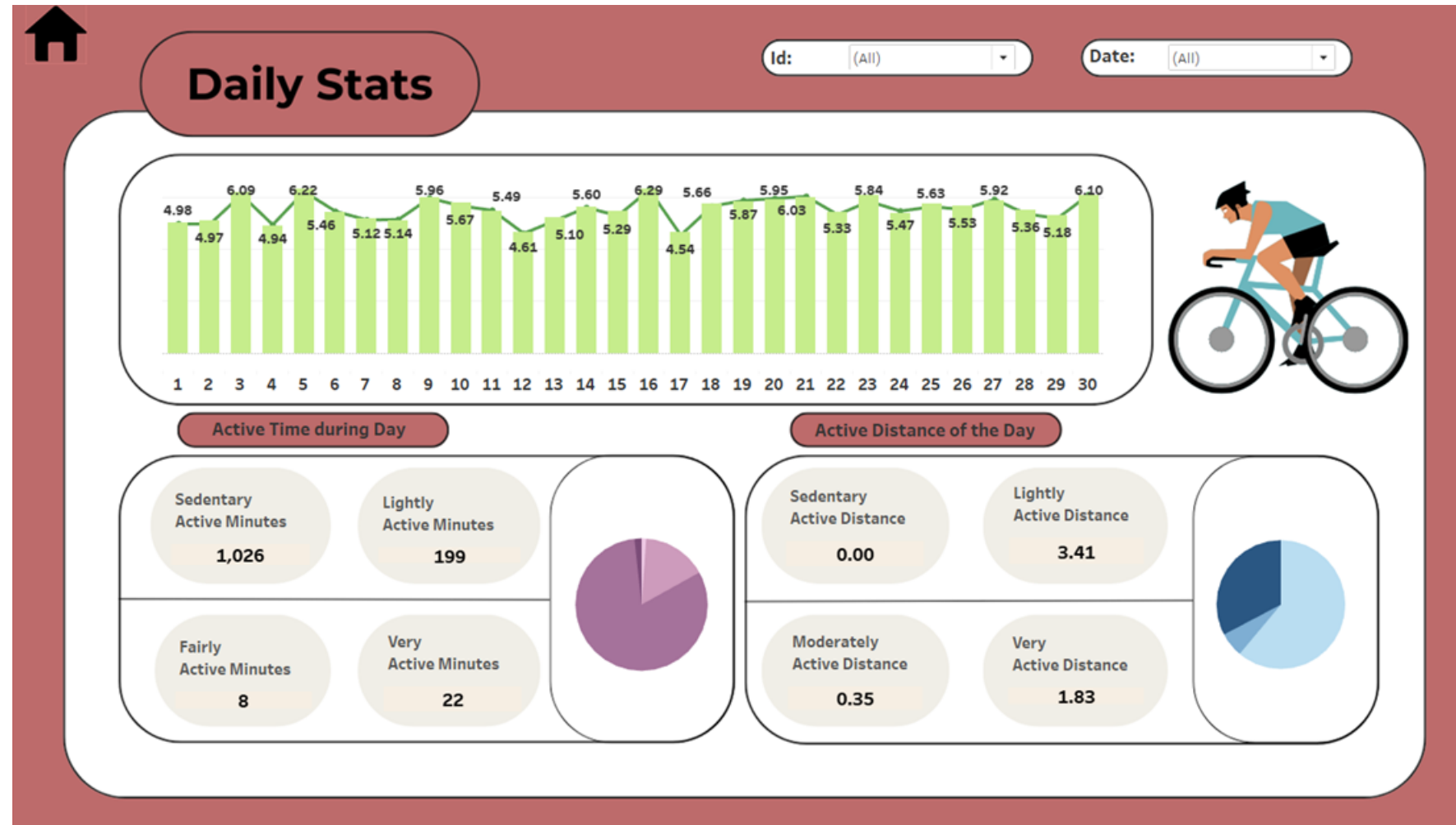
Type	Field Name	Physical Activity	Remaining Time
#	Id1	latest_m...	Id
📅	Activity Date	latest_m...	Activit...

➤ HOME PAGE –





DAILY STATS –





HOURLY STATS -



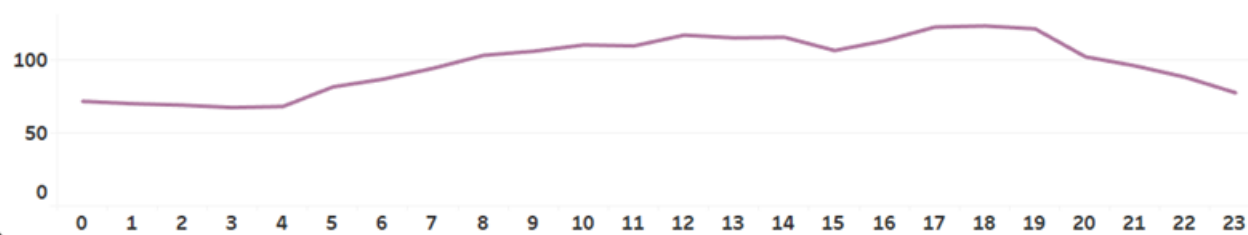
Hourly Stats

Date: (All) ▾

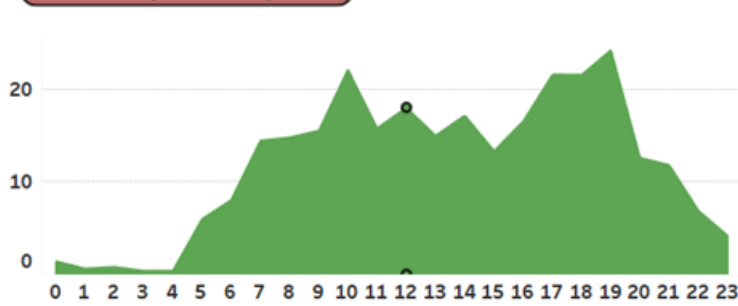
Id: (All) ▾

Hour: (All) ▾

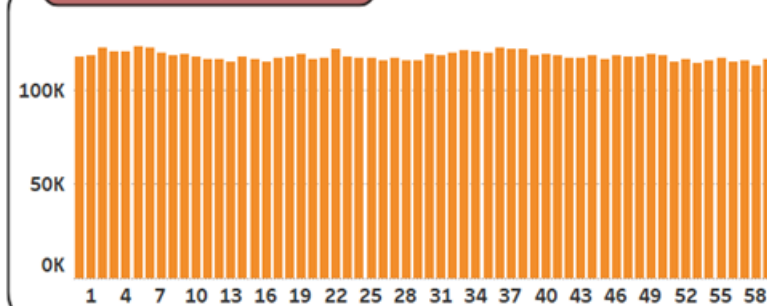
Hourly Calories



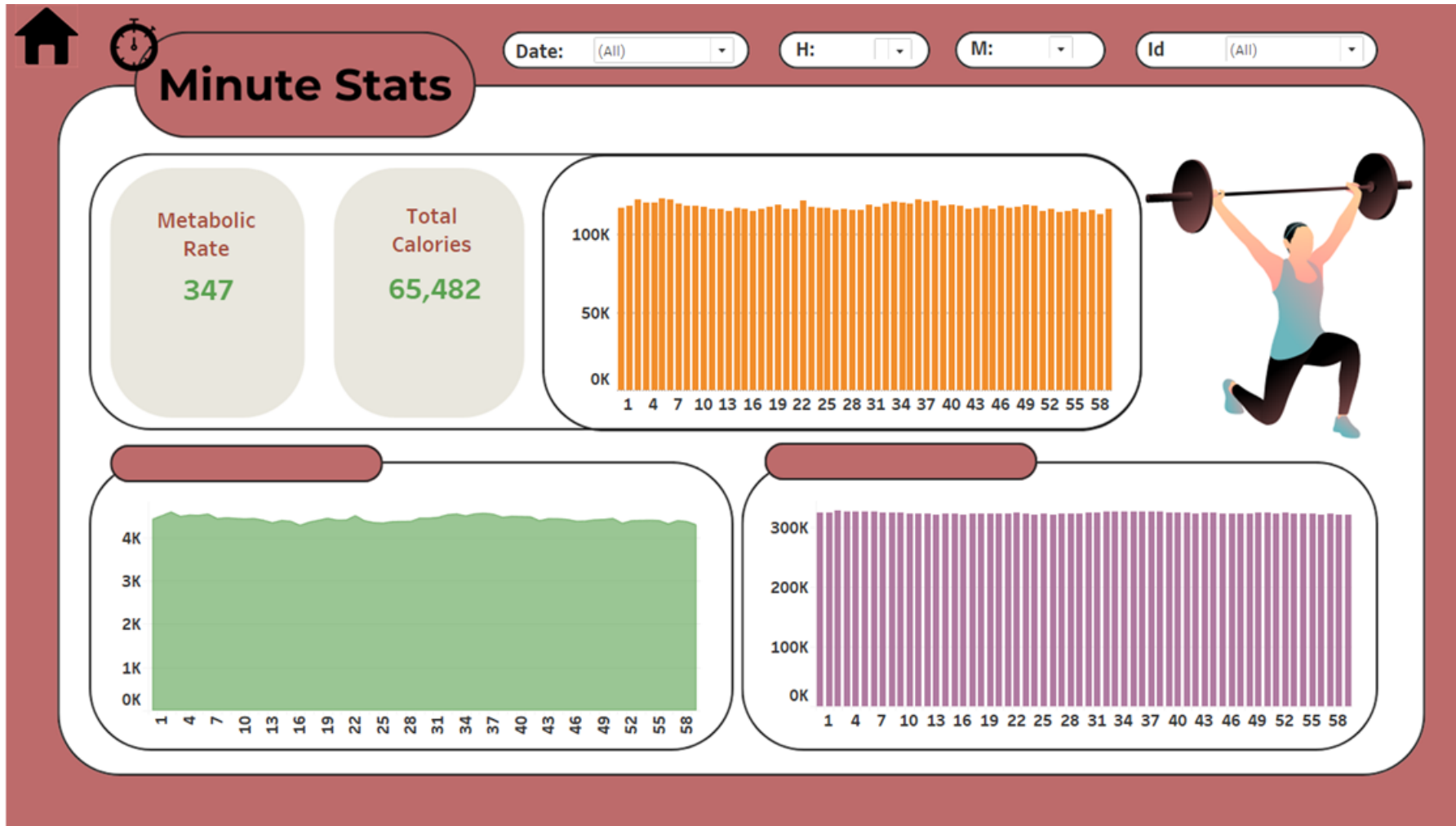
Hourly Intensity



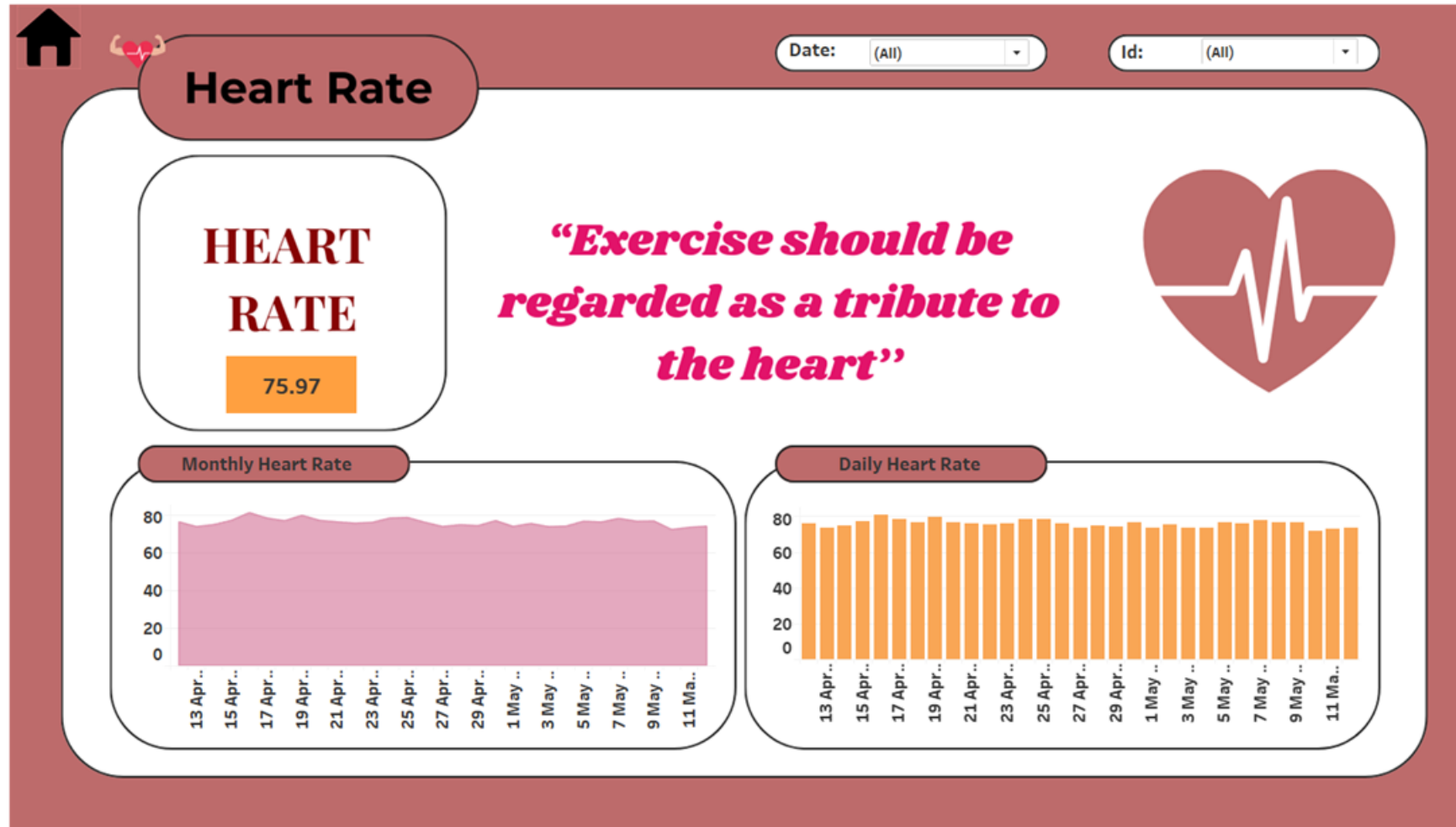
Hourly Steps Trend



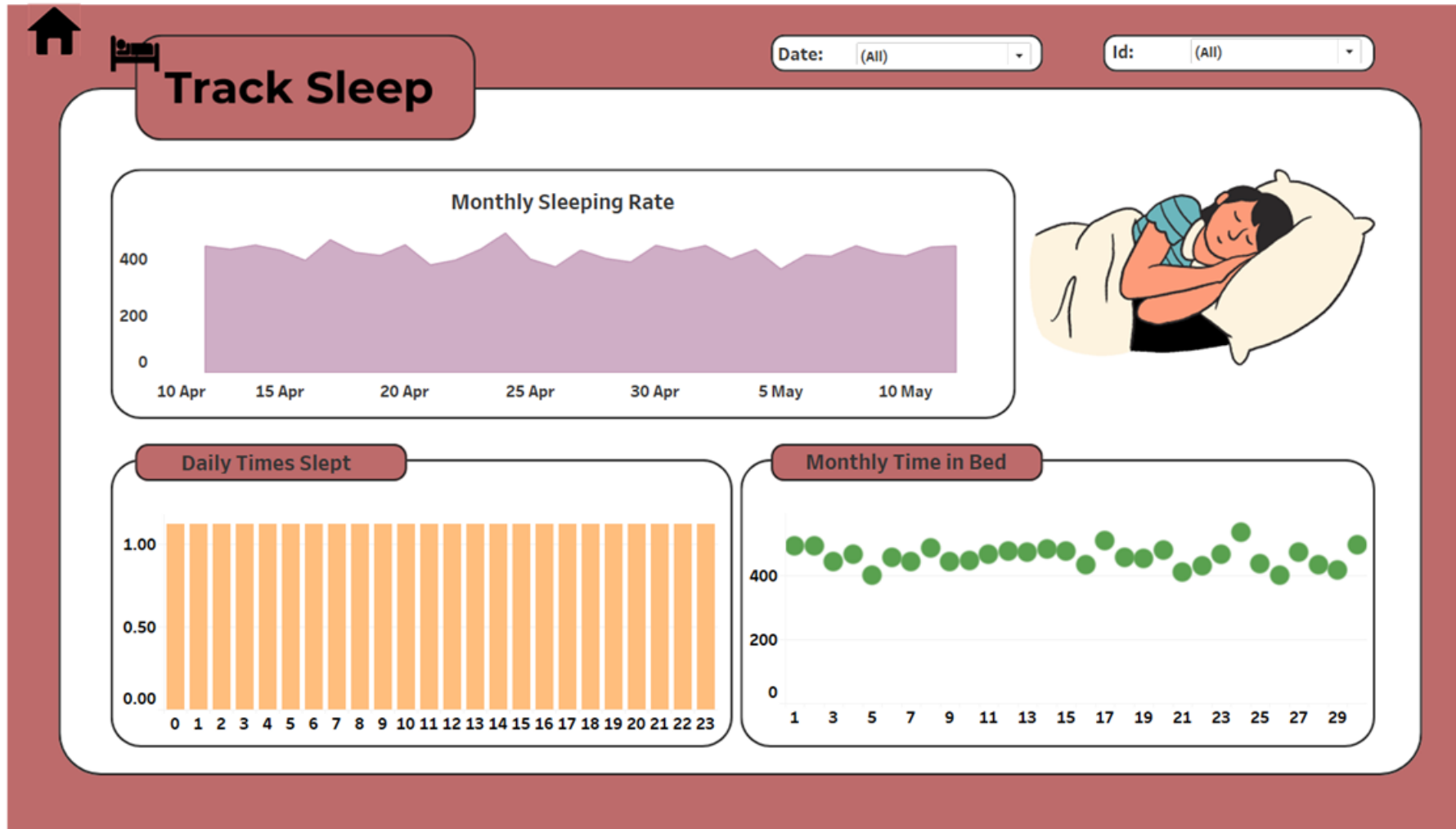
➤ MINUTE STATS –



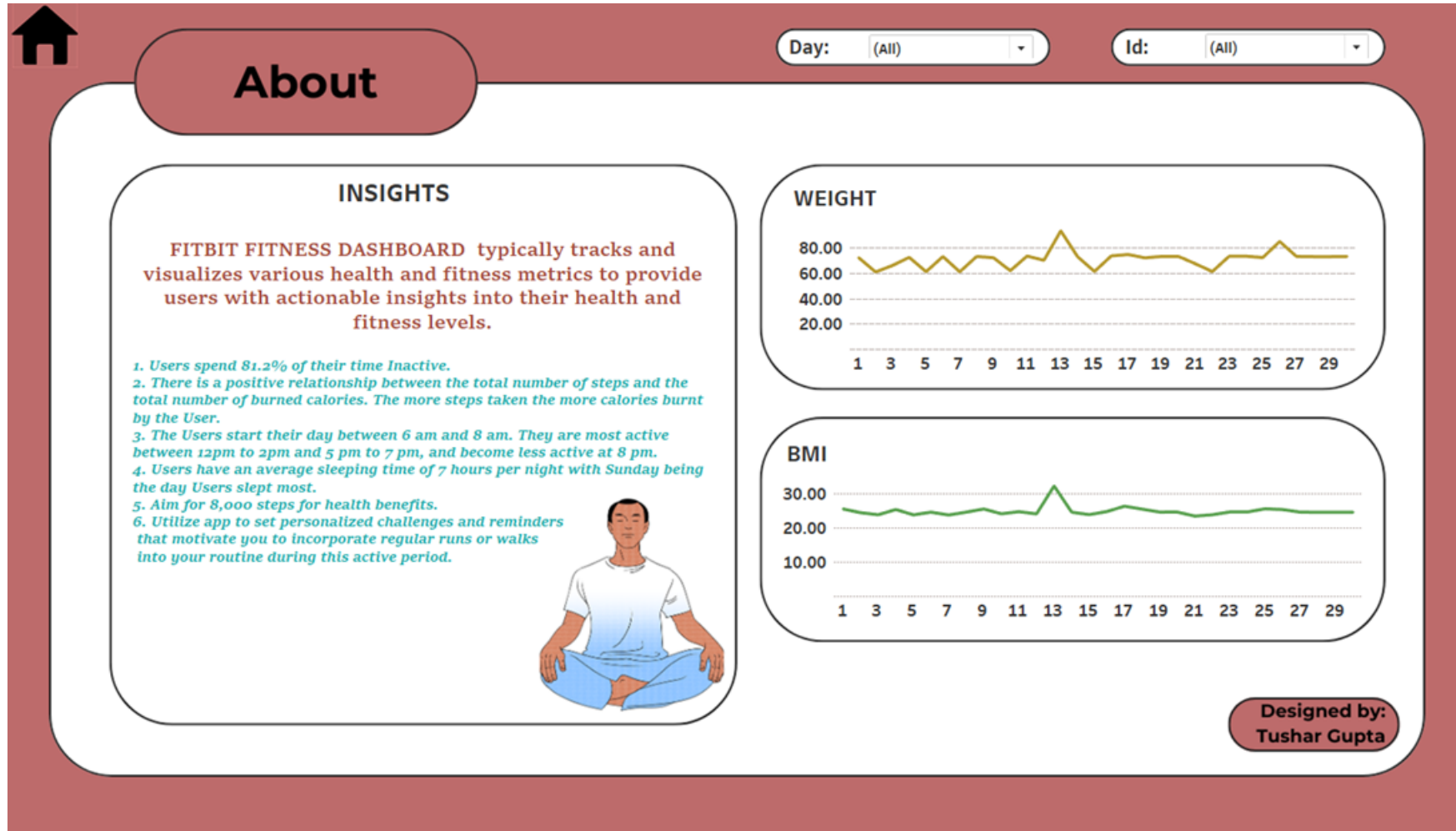
➤ HEART RATE –



➤ TRACK SLEEP –



➤ ABOUT –



CONCLUSION

The dashboard's intuitive design ensures that complex data is presented in an accessible manner, empowering user to make informed decisions about their fitness routines. Additionally, the ability to drill down into specific metrics helps users set realistic goals, monitor progress, and adjust their activities accordingly. Overall, this Fitness Dashboard serves as a powerful tool for both fitness enthusiasts and professionals, providing actionable insights that drive healthier lifestyles.