Analyzing smartwatch data metrics Darius Alexandru Cocirta 2022-02-14 Introduction The Fitbit dataset consists of data recorded by Fitbit devices – wearable fitness trackers that monitor health and activity. These trackers capture details like steps, distance, calories, heart rate, and sleep patterns. The dataset includes diverse measurements collected from users over time, revealing insights into daily routines, activity levels, sleep quality, and general health. About dataset The original data set has been taken from https://www.kaggle.com/arashnic/fitbit from Möbius. It contains personal fitness tracker from thirty fitbit Assessment • exploring potential correlations between different metrics, such as the relationship between active minutes and heart rate, to uncover possible associations • Identifying daily and weekly trends in active minutes, sleep duration, and other key metrics to understand how individuals' behaviors change • Investigate sleep-related data to determine average sleep duration, sleep consistency, and any potential connections with other factor Steps Steps Vs Very Active Steps Vs Ligthly Active Steps Vs Fairly Active 150 ligthly actvie minutes Fairly actvie minutes very actvie minutes 5000 100001500020000 5000 100001500020000 5000100001500020000 total steps total steps total steps Steps Vs Sedentary N Steps Vs Calories Steps Vs Total Activity 5000 sedentary minutes 4000 total activity 1000 5000 100001500020000 5000 100001500020000 5000 100001500020000 total steps total steps total steps Calories 120 -80 mean_calories 40 -Time Fairly active m Very active mi Ligthly active r Sedentary minu 5000 -5000 -5000 -4000 4000 2000 calories 2000 calories 2000 calories 2000 -1000 -1000 1000 1000 0 100200300400500 0 50 100 150 200 50 100 150 500 1000 very active minutes fairly active minute: Ligthly active minute sedentary minutes 120 mean_calories 72:00:00 13:00:00 1,50,76,01,1 1,00,00,00 1.0 18.0 10 10 1.00 1.00 Time Sleep **User Activity Distribution** as.factor(user_activity_day) 100 Active 75 count Low active 50 25 Sedentary Somewhat active Active Low active Very active Very active user_activity_day User's activity vs Sleep Quality Low active Sedentary omewhat active Very active user_activity_day sleepquality Insufficient Oversleeping Sufficient sleepque Sufficient - Sufficient -Oversleeping Insufficient Sufficient Oversleeping 9 mean_sleep_hours mean_sleep_hours ര 10.0 7.5 5.0 2.5 3 as:cparacter 4319703577 - 4388161847 - 4445114986 - 4558609924 - 4702921684 - 5553957443 -6117666160 -6775888955 -7086361926 -2320127002 -2347167796 -3977333714 -4020332650 -5577150313-6962181067 -7007744171 -2026352035 5000 -20000 -4000 400 -15000 totalsteps 0000 totalactivity calories 2000 5000 1000 -10 10 sleep_hours sleep_hours sleep_hours Weekly User's activity vs Weekday Tuesday Wednesday Thursday Friday Sunday user_activity_day Saturday Active weekday Low active Sedentary Somewhat active Very active Active Low active Sedentary what active Very active ່ອ້ຽ user_activity_day Fig. 7: User activity by weekday Dercentage of nsers 0.75 - 0.50 - 0.25 - 0.00 - 0.00 -...by level of activity user_activity_day Active Low active Sedentary Somewhat active Tuesday Wednesday Thursday Friday Very active Saturday Sunday Day of week 10000 -2500 -400 -2000 -7500 -300 mean_sleep mean_calories mean_steeps 5000 -## Daily 2500 -100 500 weekday weekday weekday 20 -15 mean_intensity Time 120 mean_calories mean_steps Time Time mean_intensity 10 -Time Users Fig. 4: Distribution of users... ...by Total Hours of Sleep 30 count Count of users 20 average = 6.96 h 10 10 -10 Total Hours of Sleep Mean 3rd Qu. Min. 1st Qu. Median 1.000 6.000 7.200 6.987 8.200 13.300 Fig. 5: Distribution of users... ...by Total Daily Steps = 8515 steps 40 count Count of users average 30 20 10 10 -15000 20000 5000 10000 Total Steps per day Min. 1st Qu. Median Mean 3rd Qu. Max. ## 17 5189 8913 8515 11370 22770 Fig. 6: Distribution of users... ...by Calories burned daily = 2389 kcal average 90 count Count of users 50 30 20 10 30 -2000 3000 4000 Total Calories per day Min. 1st Qu. Median Mean 3rd Qu. Max. 257 1841 2207 2389 2920 4900