A Mobile application that applies a Self-Management Approach to Reduce Sedentary Behaviour

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Sedentary Behavior as a threat to our physical wellbeing

Leads to the following diseases:

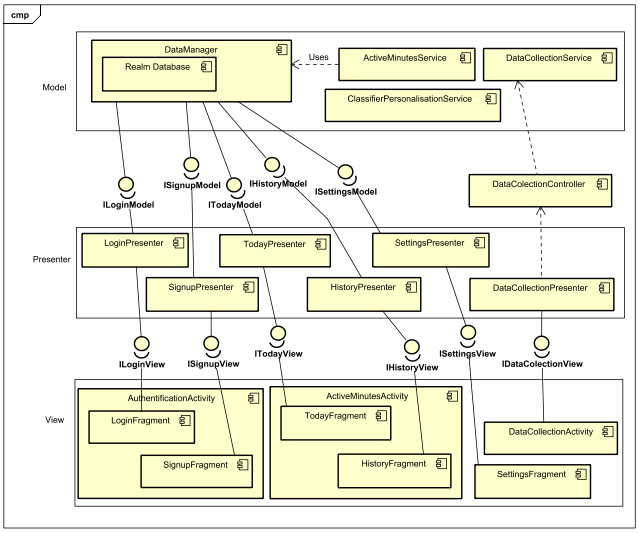
- Back pain
- Diabetes
- Cardiovascular disease
- Cancer
- All-cause mortality
- Also leading cause of absence from work and estimated to cost in the order of 1% GDP across EU

Project aim

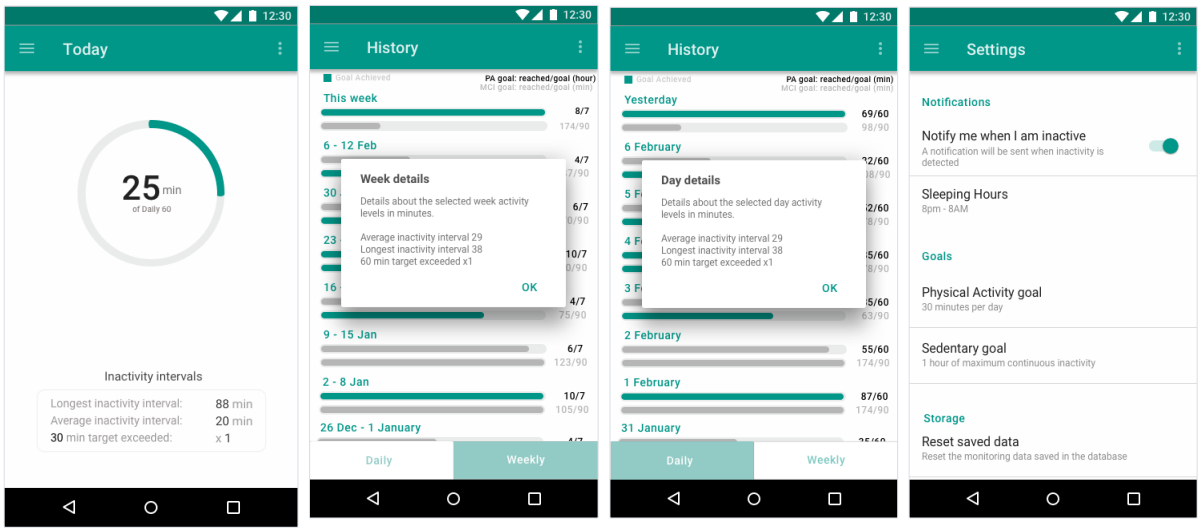
Objectives Achieved

- Research Sedentary Behaviour (SB) and behaviour change
- Investigate how to implement Human Activity Recognition (HAR) on wearable devices
- Develop a fully working HAR system
- Incorporate the above within a SB self-management system
- Design and Implement the mobile application
- System evaluation
- Release app to application to the Application Store

System Architecture



System UI



System demo

Demo the system using a Android Studio Virtual Device – show the process of a new user registering and showcase all of the system screens

Survey responses

No	Question	Response
1	What is your age	18 to 24 (100%)
2	Were you more active then usual (e.g. walking, running) as a result of using ActiveMinutes?	Yes (33.33%) No (33.33%) Not sure (33.33%)
3	When notified for prolonged inactivity (e.g. 30 minutes of inactivity), did you try to do at least 5 minutes of physical activity?	Yes (66. 67%) No (0%) Sometimes (33.33%)
4	Does seeing past days goal-performance (e.g. in the History screen) motivate you to achieve a goal?	Yes (100%) No (0%) Not sure (0%)
5	Does the visual feedback (i.e. the green progress bar) encourage you to achieve your goal?	Yes (100%) No (0%) Not sure (0%)

Survey responses (Continued)

No	Question	Response
6	Do you think the application was accurate when measuring your activity levels?	Yes (66. 67%) No (0%) Somewhat (33.33%)
7	How easy to understand was the user interface of the application? (0 being very difficult and 100 being very easy)	Response 1 – 100 Response 2 – 80 Response 3 - 75 **Average - 85**
8	Was the mobile application battery-friendly?	Yes (66. 67%) No (0%) Somewhat (33.33%)

Survey responses (Continued)

1. "Great application, I like the feature that notifies you when you have been inactive for a certain amount of time. The application could maybe have a feature to alert you when you should go to bed to achieve the best amount of sleep. For future development, the application could maybe sync with a watch."

2. "Slightly wider ranges in terms of sleep time and active and inactive minutes and perhaps a more obvious "Key" informing the users as to what each bar in the history means. Otherwise really easy to use."

3. "The application could be improved in the future by optimising it to be more battery-friendly."

Future work

- Implement a personalisation of classifier logic
- Incorporate for social media sharing support
- Integrate Smartwatch sync support
- Improve the feedback process by adding a “End of the week goal-performance” reports
- Implemented the user feedback gathered via the project survey