

Assignment 1

Team number: 26

Team members

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Introduction

Authors: Philip & Sarthak

GPX_manager is an application that helps the user keep track of their physical activities and gives the user a detailed report on it. On top of this, the application calculates the body mass index and also gives the user a dietary recommendation concerning the daily amount of calories they should take in. These features help the user to achieve their respective goals in terms of overall fitness/health. The user can choose from the vast variety of sports and can also add sports into the list.

The main type of user for this application is people who are interested in tracking and managing their daily physical activities, this can be for fitness/health reasons, pure curiosity or other reasons .

The first time users open the app , they will be asked to add their personal data. Here they will be asked to enter their personal information such as age, height and weight which will be used to give them personalised recommendations in terms of exercises and calorie-intake, helping them with achieving their fitness/health goal.

The main components of the application will be:

1. **User interface:** The window where the user can see the analysis and also interact with the application.
2. **Backend:** It converts the data and does all the necessary calculations such as calculating average pace, distance covered and visualising of the gpx file
3. **Data:** it stores the user data such as their past activities , name , daily goal ,etc.

The app work as follows:

1. Users are asked to create their profile by entering basic personal data.
2. Users upload their physical activity in the app which is then converted and used to analyse their record. They can choose the type of sports while importing the data into the app.
3. They get a detailed analysis which includes stats such as average pace , max speed, duration and their timeline.
4. The user can set their daily goals and the app will notify when the user completes their daily goal.
5. The user get their diet recommendation according to the goal they set
6. The user also gets a map of their locations during the exercise
7. The User will know their BMI which helps them figure out if they are following the right track

Features

Author(s): Vilen

Functional features

ID	Description	Detailed Description \ Features	Champion
F1	Personalisation	The user may add their details such as name, age, height, weight and daily goals to personalise the application and to get the recommendations according to the data provided	Harsh
F2	Expandability	A user can add different sports with ease by specifying some basic characteristics about the specific sports.	Sarthak
F3	Interface	<p>A user can upload a gpx file and choose the corresponding sports and click on the upload button to get the analysis and report of the gpx file. The user will be able to see their name and also a cross sign at the top corner of the screen.</p> <p>While choosing the sport the user will see a dropdown list with all the sports available and also an option to add another sport</p> <p>While adding a sport, the user will be asked to enter the sports name and select some characteristics about the sports from the list which will be shown on the screen. After this the user can press the ADD button to finally add the sport into the list.</p>	Philip

		The user will be able to see different things such as their average speed and distance covered after pressing the upload button which will initiate the computation of the gpx file.	
F4	Select Sports Activity	<p>Select what type of sports activity the user will do: (football, cycling, running, etc.)</p> <ul style="list-style-type: none"> • Football • Running • Cycling • Swimming • Hockey • Basketball • Tennis/Badminton 	Vilen
F5	Toggle between map views	User can swap between roadmap and satellite view which	Harsh
F6	Analysis	<p>Users can see various analyses which can be selected after selecting the sport activity and uploading the gpx file.</p> <ul style="list-style-type: none"> • Max Speed per session • Average Speed. • Total Covered Distance • Burnt Calories. • Time Duration of the activity • Distance covered • Their location timeline during the exercise 	Sarthak and Harsh
F7	Theme	The user can toggle between dark and light theme by clicking on a toggle button to activate or deactivate dark theme	Philip and Vilen

Quality requirements

Author(s): Harsh

ID	Short name	Quality attribute	Description
QR1	Analyzation of the data	Reliability	The user gets a detailed analysis of their stats. All these calculations are done by solid or verified formulas or algorithms to compute the results.
QR2	Organised structure of the tool	Maintainability	The application has a very organised code structure with

			different classes to divide different functional features, which make it easy to add or update the classes/features.
QR3	Access to the tool	Availability	The user can use the application anytime they want as it is working 24/7.
QR4	Integrity of the data	Security	The application only needs the user's GPX data and it will show the visualisation of it in the tool. It does not store the data into any server and saves data locally. User has an option to skip filling in their personal details
QR5	Personalization	Usability	The user can choose a theme and layers of map easily from the main screen.
QR6	Computing results	Responsiveness	All functions on the tool are responsive and it directly takes on the data and begins computing the result after applying the respective formulas and algorithms. The calculations would not take more than 500ms.

Java libraries

Author(s): Harsh & Vilen

[JFoenix](#)

Used for styling the user interface of the system. We chose it among others because it is simple and easy to use and will help us build the software in an interactive way

[GmapsFX](#)

Used for using google maps API to visualise the timeline of the user. It provides us the flexibility to work with different kinds of maps and add different features to the same. Which is needed to convert the gpx file and analyse the results.

[JavaFx](#)

Used for designing user interfaces of java applications. This has extensions and libraries that helps users build dynamic applications with ease. For example, [Hansolo](#) is a library that will help build charts which is better for visualisation of the data.

Time logs

1	Member	Activity	Week number	Hours
2	Group	brainstorm functional requirements	1	2
3	Sarthak and Philip	search Java libraries	1	1.5
4	Vilen	Write functional requirements	1	1.5
5	Harsh	Write Quality requirements	1	2
6	Sarthak and Philip	Write introduction	2	1
7	Group	Update and discussion	2	1
8	Harsh and Vilen	Write java libraries	2	0.5
9	Sarthak and Philip	Write introduction	2	1
10	Vilen	Write functional requirements	2	2
11	Harsh	Write Quality requirements	2	1
12	Sarthak and Philip	Write introduction	2	0.5
13				
14				
15				
16				
17				
18				
19				
20				
21			TOTAL	14
22				