Problem Statement 4
Title - *PTM: Personalized Travel Monitor

Project Abstract

More and more applications are available, provided for example by transport operators such as railway companies, metropolitan or regional transportation authorities, that provide real-time information to users when disruptions occur in their networks. Typically, however, these applications provide generic information, in a "one size fits all" approach, where every user receives the same notifications.

The goal of the project is to develop a system that allows users to receive targeted, personalized information only when their routes of interest are affected by the disruptions, and only at the right time (for example, a disruption that occurs in a metro line when the user is out of town is of no interest to the user). The students are expected to identify one or more transport operators of interest, identify the available sources of information concerning disruptions (which might also be user-generated information spread through social networks, possibly through functions available on the application itself), and to create a system that provides users with information that is as accurate, timely and personalized as possible. Students are encouraged to research and/or interact with transport operators and potential users of the system to gather their expectations and needs concerning such a system.

Project Description

The advent of mobile devices, which allow users to receive services while on the move, has naturally led providers of transport services and mobility-related companies to create applications that allow travelers to stay informed about events, especially disruptive ones, that occur along transport networks. However, these applications are typically restricted to monitoring a single network (or the services of a single operator), and/or deliver notifications that are not user- and context-specific. As a consequence, a user of local transportation services (metro/bus/tram lines) will typically receive notifications even when she is not in town, whereas a user of a long-distance service can monitor the situation of a specific service (e.g., a specific long-distance train, or an airplane), but it is not often that she is able to receive real-time "push" notifications when her trip is disrupted.

*This project specification is taken (and updated) from the Student Contest on Software Engineering Projects (http://score-contest.org/2018/projects.php) at the 40th International Conference on Software Engineering.

The goals of the project are the following:

- To design a system that allows travelers to indicate services to be monitored, and to define the kinds of events and disruptions that should be monitored.
- To develop mechanisms that allow users to receive notifications when events of interest occur for the monitored services, according to the preferences and the context of the user (e.g., only if the event is relevant given the current situation of the user, such as her position).

To achieve the goals of the project, an analysis of available sources of information concerning the status of the transport services of interest may be carried out.