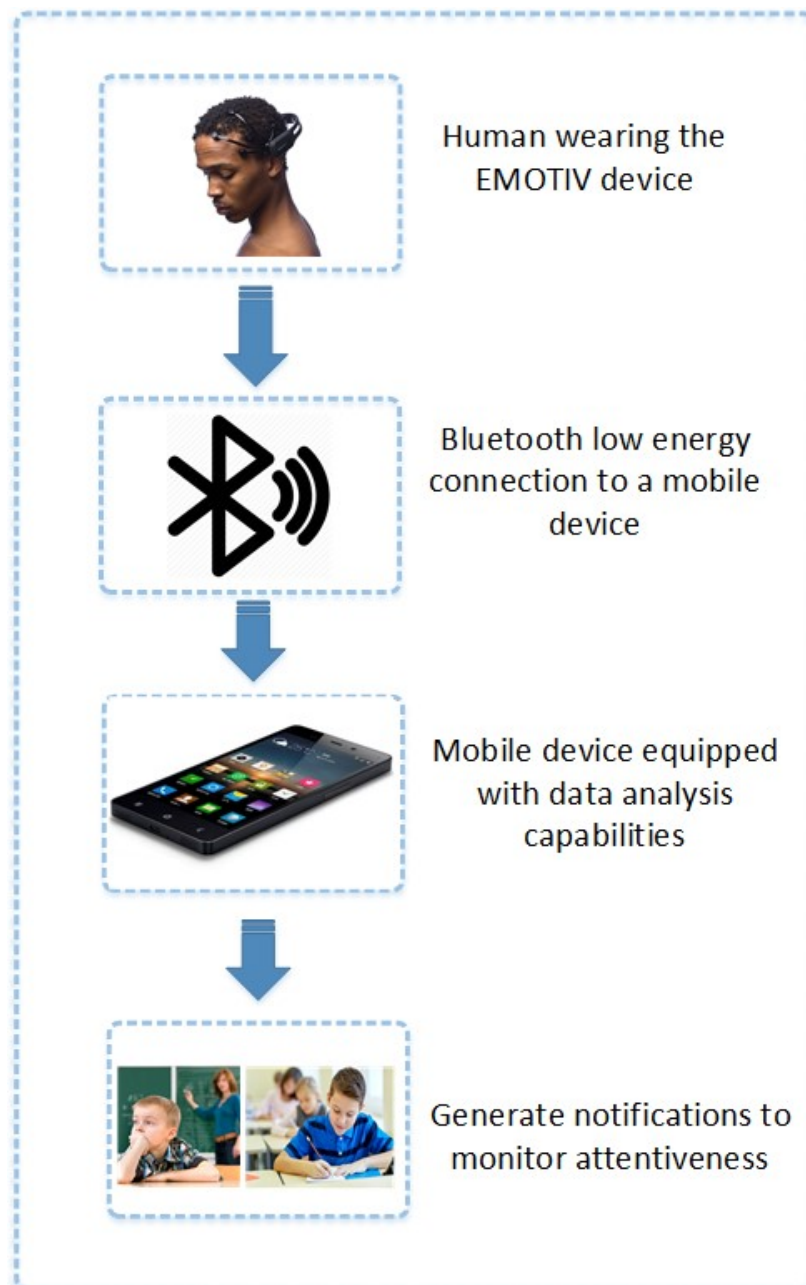


**Project Title:** Attention or in Tension! – A brain computer interface application to detect mental attention states of a person.

**Advisor:** Prof. Mohammad Al Faruque

**Group Size:** 2 to 3 students (minimum 2)

**Requirements:** This is a HW/SW design project. You already have the required knowledge from the class. The specific device is already selected. You do not need to look for HW or SW platform.



## Figure 1: Overall Architecture

### Project Objectives:

A wearable sensing system collecting brain signal through EMOTIV EPOC+ 14 channel mobile EEG. The device will be able to track the brain signal reflecting various human mental state in different situations (e.g. attentive/inattentive/drowsy) and generate notifications accordingly to meet user requirements (e.g. May be useful for ADHD patients).

### Functional Specification:

#### Inputs:

- Time-series data from the EMOTIV EPOC+ 14 channel mobile EEG.

#### Functionalities:

- Performing data analytics on the input data.
- It will focus mostly on the following two functionalities of the brain computer interface applications:
  - ✓ Detection of human attention state in different context (attentive/inattentive/drowsy).
  - ✓ Generate notifications to meet the user requirements (Alert when getting inattentive).

#### Outputs:

- The system will be able to monitor brain signals on various situations and generate commands accordingly to help user. Such a system will be very useful for ADHD patients to monitor their attention disorder.