Microcontroller : Arduino UNO  
  
The microcontroller unit acts one of the processing units for the system. It controls the turning lights, counts the revolutions made by the wheel and communicates to PC or Android application via Bluetooth.   
  
Turning Lights: The user presses a push button that triggers an interrupt service routine which then triggers a blinking method for the LEFT and RIGHT LEDs.  
  
Hall Effect Sensor: The hall effect sensor is placed on the back wheel of the bike and a magnet is attached to one of the spokes. Every time the magnet crosses the hall effect sensor, it triggers an interrupt service routine which increments a counter. The value stored in this counter is the number of revolutions made by the rear wheel which is then used to calculate various performance matrices.   
  
Bluetooth: The communication to PC or Android Application is maintained via a Bluetooth connection by the Arduino. A Bluetooth module is attached as a peripheral to the board which waits for a request from the connected device and sends the counts i.e the number of revolutions made by the rear tire.