# <<*My Bikes>>*

***My Bikes s***tore sells different types ofbicycles.

A bicycle is identified by a serial number, brand, model, speed, color and made date (this list is not exhaustive, you have to add 2 other features).

***My Bikes*** store sells **mountain bikes** and **road bikes**.

A *mountain bike* has its specific features for example the suspension. It has 3 types of suspension (front, rear, front and rear). You need to know what the measurement of the height from ground is.

When you check for a *road bike*, you need to know what the seat height is.

You have been assigned the job to design (Analysis part) and implement(Programming part) a Windows application called <<MyBikes>> using Visual Studio 2015/2017.

You have to create three Layers

1. Business Layer: bus
2. Data layer: data
3. Client Layer: client

TO DO:

1. **Building the domain (Business Layer):** **(40%)**
   1. Design the **Class Diagram.**
   2. Create the necessary enumerations
   3. Create the business classes

For each class, create the required private fields, public properties, constructors and public operations.

**1.4** Create the interfaces with the necessary services (operations)

such as : start, stop, accelerate, brake…..

1. **Building the Data Layer (20%)**
   1. Create the file handler to save data to permanent storage and to read data from the permanent storage(write/read binary file: bikes.bin)
2. **Build the Client Layer: (40%)**

## Build a friendly GUI interface

Create the *following Windows Forms*

* Create a session with login to give hand to the manager to connect to the application. (User identification and password for the 2 users are stored in a text file: login.txt)
* In the Main Form, you have to give hand to the manager to :
  + Add a bike ( mountain bike, road bike)
  + Search for a specific bike
  + Update bike information
  + Remove a bike
  + Save bikes into the file: : bikes.xml
  + Load bikes from the file : bikes.xml
  + Display all bikes, Display mountain bikes, Display road bikes