**HW 1. AUBG Vehicles' Spare Parts Supermarket**

The assignment is to develop a program in C++ to maintain vehicles' spare parts selling by AUBG VSP Supermarket.

The spare parts are described by the hierarchy:

Hierarchy 1:

Base class

"***Spare\_Part***" : {string name, double price, string description}

            "***On\_hand***" inherits Spare\_Part:S

                        {int quantity, string location}

            "***Contracted\_supplies***" inherits Spare\_Part:

                        {string vendor, string contact\_person, string phone, int delivery\_time,   
                                    string unit (hours, days)}

                        "***New***" inherits On\_hand:

                                    {int warranty, string unit (kilometres, months, etc.), string producer}

                        "***Recycled***" inherits On\_hand:

                                    {int Restored\_resource (%), boolean warrYN ('Y/N'), int warranty,   
                                                string unit (see above)

Hierarchy 2:

Base Class

"***Vehicle***": {string producer (e.g. "Opel", "Ford",...)}

            "***Mod*el**" inherits Vehicles: {string Name, Spare\_Part\*List}

Your program must do the following:

1. Maintain two vectors:
   1. Vehicles for which one can find (or order) a spare part in the AUBG VSP
   2. AvailableSP - list of spare parts available in the AUBG VSP warehouse
2. Functions (polymorphic):
   1. Add a new vehicle
   2. Add a new spare part
   3. Add new quantity of given (already available) spare part
   4. Sell a spare part (reduce On\_hand.quantity; and if quantity become zero, remove from  AvailableSP)

Tip: Include in all classes' definitions virtual functions to insert and remove data for the object of given type.

**Delivery:**

**Electronic version: all program files, including executable. Store all files in an archive and upload to elearn.**

**Hard copy: the source code of all program components**