**Inlämninguppgift 2+Projekt:**
**Publishing 2022-10-13**
**Due-Date 2022-11-05 kl 11:59**
**Total points 200.**

# Read this information and answer all questions:

User story:

Your customer is a transportation company that runs all procedures in paper-based form. Now they like to have a *Logistics System* with following basic functionality:

➕ The system can take an order from users who work for customers or *any individual registered user* , to deliver it to a given destination.

➕ The order will be a group of items and maybe there is a different cost of each item/order to process.

➕ Users should register themselves to use this system.

➕ Users can track their order(s).

➕ Orders will be shipped by bikes, trucks, or ships.

➕ Customers are the ones who will be charged to get their items delivered.

The main classes will be and suggested attributes:

1. **User**: A class to represent system's Users: *(5points)*
   a. (ID (unique) like personal number,
   b. full name [First name, Last name],
   c. address [Street, building number, Zip code 5 numbers, City],
   d. Mobile Number [country code with +sign, number],
   e. Email address like xxxxxx@yyyy.xcv,
   f. Password (min 8 and must have one number at least and one special character).

g. Path to csv file that has all user as user DB.

2. **customer**: to organize corporate customer: *(5points)*
   a. (ID (unique) like Organizational number or VAT number in skatteverket ,
   b. Company Name,
   c. Company address [Street, building number, Zip code 5 numbers, City]
   d. Reference person full name [First name, Last name],
   e. Reference person [country code with +sign, number],
   f. Reference person Email address Email address like xxxxxx@yyyy.xcv
   g. Company invoices Email address like xxxxxx@yyyy.xcv.
   h. Related Users that hold the IDs for registered users in the system.
   i. Path to csv file that has all customers.

3. **Item**: (price per kg, volume, weight, type [fragile, solid]). *(5points)*

4. **Vehicle**: The Vehicle represents transportation method which will be used to ship/deliver an order.  It will be of 3 types: 1. Bike and 2. Truck 3. Ship/boat in the sea. *(10points)*
   o **The bike** can carry max 2 items of capacity, and max 10kg.
   o **The truck** can carry max 100 items of capacity, and max 3000kg.
   o **The Ship/Boat** can carry max 10 000 Items and max 100 000Kg.

   suggested attributes and methods: (

   o Id or vehicle No,
   o Max_capacity(KG,Item),
   o Left Capacity per KG.

- Left Capacity per item.
- Current position.
- Current status [Free, busy, loading , Not_working].
- Path to csv file that has all Vehicles.

5. **Location**: to decide location of the vehicles: *(5points)*
   a. Longitude,
   b. Latitude,
   c. country.

6. **payment details:** to manage payments: *(5points)*
   a. payment method: [ Net_banking, Credit_card, Debit_card] ,
   b. transaction Id,
   c. Amount in € or SEK,
   d. Payment status [paid, unpaid],
   e. In case of card payment save card Number 16 numbers and card holder info in the system.
   f. Path to csv file that has all payments details.

7. **Order:** to organize all shipment's orders: *(20points)*
   a. id,
   b. Order priority [Low, Medium, high],
   c. Sender/Customer,
   d. To location,
   e. Payment details,
   f. items into the shipment,
   g. total weight,
   h. orders status [Delivered, processing, Canceled] ,
   i. order place date and time,
   j. order delivery date and time,
   k. Vehicle.
   l. Path to csv file that has all orders.

To program and deliver the project, the customer would like a **demo for** these operations:

8. **Logistics System(main)**: requested operations in main control panel of the system:
    1) Add/remove/update:  user to the system. *(15points)*
    2) Add/remove/update:   corporate customer. *(15points)*
    3) Add/remove/update:   private customer. *(15points)*
    4) Add bike to the system. *(5points)*
    5) Add Truck to the system. *(5points)*
    6) Add Ship to the system. *(5points)*
    7) Create shipment/order of items. *(25points)*
    8) Add Items to a shipment. *(5points)*
    9) Update status of order. *(5points)*
    10)     Get updated status of order. *(10points)*
    11)     Function that help users to Choose right and available vehicle to a shipment and then  test on: *(40points)*
        i. Shipment_1 = 1 item and ttl 5kg.
        ii. Shipment_2 = 12 items and ttl 3kg.
        iii. Shipment_3 = 60 items and ttl 4500kg.
        iv. Shipment_4 = 120 items and ttl 2500kg.

Betyg:
- Total points <85 IG
- Total points >90 G
- Total points >170 VG