Semester project 1

Main assignment: Service system for pizza restaurant
The assignment accounts for **80%** of the total grade for the course
A grade of 5.0 out of 10 in this assignment is necessary to pass the course

The pizza system:

The main project of the three week course is a service system for pizza restaurants.

- The system is written in C++
- The system stores information in files that lie next to the executable files of the system
- The system uses C++ file streams to read from and write to these files
- The user interface of the system is a console application (text interface)
- The system uses a three layer design where specialized classes take care of:
    - User interface operations (UI layer)
    - Processing and unification of data (Control/processing layer)
    - Reading and writing of files (Data layer)
    - Simple data classes that the other layers use for communication
- The system offers functionality for:
    - administrators that enter products and prices
    - sales staff that registers orders
    - pizzaiolos who prepare the pizzas
    - staff that receives the payment and delivers the orders
- Students use the *git* version control system to keep track of their program code

Students are have quite a lot of freedom regarding their implementation, but following are descriptions of what we expect the system to offer and they are good guidelines for the extent of functionality expected when evaluating.
First there's a description of what the system should be capable of in order to even evaluate it for a passing grade.
Next there's a description of the system we expect most groups to implement before they begin thinking about a lot of extra functionality.
Finally there's a lit of common extra functionality that could be implemented for a system like this, things that can raise the grade of a group if done well. Students are also encouraged to visualize some of their own additions or extra functionality to make their system stand out in some way.

- **Base system (Bare base requirements for 4 to 5)**
  - A single menu listing the possible operations
  - Register a price for a base pizza
  - Register toppings and a price for each
  - Register an ordered pizza (show total price)
  - Flag a pizza as paid for
  - View an ordered pizza
  - Flag as processing
  - Flag as ready
  - Flag as delivered
  - ***All information must stay correct even when the system is shut off***

- **Divided system (Fully implemented for 7,5 to 8)**
  - Administration
    - Register different types of pizza (size/crust)
    - Register toppings
    - Register specific combinations by name (menu)
    - Register other products, e.g. soda & bread sticks
    - Register prices
    - Register locations / pick-up points
  - Sales
    - Register an order
    - Add pizzas (and other stuff) to order
      - Size/crust per pizza
      - Toppings per pizza
      - See total price per pizza
    - View total price for order
    - Register pick-up or delivery
    - Flag order as paid for
    - Flag pizza for specific location
    - Register comments
  - Pizzaiolos
    - User picks their location
    - View list of ordered pizza, only for this location
    - View an ordered pizza
    - Flag as processing
    - Flag as ready
  - Pick-up and delivery
    - User picks their location
    - View list of orders, only for this location
    - View list of ready orders only for this location
    - View a specific order
    - Flag order as paid for
    - Flag order as delivered

- **Additions and extra functionality**
  - *Students' initiative frist and foremost*
  - Binary files
    - Reading records from binary files
  - Easy and clear user interface
    - Fast to use
    - Shorthand syntax to make orders
      - Type a single line of characters and codes
      - System translates into pizza or even whole order
      - Good to show the order for confirmation
  - Optimization of files and processing time
    - Special file for active orders only
    - Another file or other files for finished orders (legacy)
    - Other things that make good use of time and prioritize active/newest data
  - Analysis of sales
    - Needs to read a batch of sales data on a format procided by us
  - Register special offers
    - Possible to pick an offer, e.g. two pizzas plus soda
      - Fixed price
      - Cheaper pizza free
      - Other implementations?
    - Next the user fills in the offer
      - Which menu item or
      - Which toppings
      - Which type of soda etc.
    - Can the system automatically recognize the offers when the order is being made?
      - Very cool programming :)
  - Flag an order after a certain amount of time
    - Hurry
    - Late
    - Ruined