PART 8: Architectural Design (Rohit)

Our project requires the user to enter the ingredients they have in their house one by one and it will provide a list of meals the user can make after each ingredient is entered (so the list will get shorter as the ingredients are updated). In a pipe and filter system, the data in a system is organized so that each processing component (filter) is discrete and carries out one type of data transformation. The data flows (as in a pipe) from one component to another for processing, which is exactly how the data in our system will flow. The input data goes through a pipe and our database is filtered to find the matching recipes. The normal problems of agreeing upon standards for data transfer and parsing aren't too disadvantageous in this project because the parsing and data transfer is pretty simple.

Furthermore, the general use case for pipe and filter system is for data processing applications (both batch- and transaction-based) where inputs are processed in separate stages to generate related outputs. This workflow style matches the structure of many business processes, which is what our project would eventually be - a business that provides meal recommendations. Finally, the evolution by adding transformations is also straightforward, which would help us as we'll constantly need to evolve the database.