#Programming assignment: General

**Q1. Network programming and Object-Oriented Design**

Consider a RESTful Web API that returns a representation of a User in JSON. Write a program which, given a user ID (integer) as input, will output a list of the names of the user's friends and friends-of-friends.

Write your solution as a program with an object oriented design. Your program will be evaluated on both it's design and correctness.

**Web API Specification**

**Request Endpoint**

<http://fg-69c8cbcd.herokuapp.com/user/:user_id>

* Example: <http://fg-69c8cbcd.herokuapp.com/user/1> for the user id 1

**Response Format**

The response will be in JSON with the following attributes:

* id: user ID
* name: user's name
* friends: array of user IDs representing the user's friendships

**Sample Response**

{ "id": 1,

"name": "Austin",

"friends": [2, 5] }

# Q2. Database Design

Consider a system for storing recipes that uses a relational database. This database needs to store menus consisting of recipes, and the ingredients and instructions for each recipe. Menus are composed of many recipes. Recipes are composed of many ingredients and instructions.

Define the necessary tables and columns for storing this data in a relational database using SQL statements. Document the purpose of the columns you define as SQL comments.