**COMP-3400 Advanced Object-Oriented System Design Using C++**

**Hospital Management System Project**

**Group #1**

**Members:**

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**GENERAL DESCRIPTION OF THE PROJECT**

We developed a terminal-based C++ application designed to efficiently manage a network of hospitals, doctors, nurses, patients and pharmacy purchases. We used modern C++ features including smart pointers, inheritance, polymorphism, and STL containers, and tested it to ensure it meets the requirements.

**Project Requirements:**

There are five (5) different hospital locations (just like Windsor Regional Hospital). A patient can be admitted to any of the hospital locations or can be relocated to any other location for ‘some’ medical condition. Each hospital location can be identified independently of others.

We assume that at any given point in time, each hospital can handle 20 admissions (a total of 100 patients altogether). There are also pharmacies, and each pharmacy has its individual identification or name. Any of the hospitals can reach any of the 20 pharmacies for delivery of prescription drugs. The pharmacy will bill directly to the hospital and will get paid directly by the hospital.

Each patient, on his/her admission, is allocated a unique Patient ID. Full description of the patient's personal details and phone number, and then the disease and what treatment is going on. Patients will be billed on the number of days they are admitted. A patient will remain admitted until a doctor discharges the patient from the hospital.

There are multiple doctors – we limit them to a total of 50 doctors such that each doctor has a unique ID and there is a minimum of 3 doctors in each of the five hospitals. Each doctor will treat more than one patient, and depending on the type of patient, a patient can have more than one attending doctor, but ONLY one of them will be the patient’s primary doctor during admission to the hospital.

There are multiple nurses – we limit them to a total of 60 nurses such that each nurse has a unique ID and there is a minimum of 5 nurses in each of the three hospitals. Each nurse will be responsible for taking care of at most two patients.