Pseudocode and Algorithms:

* **Class Person**: a Parent class that store the information of the residents in a community

This class has attributes such as name, severity, and the health status f they are sick or not.

* **Class Doctor:** a class that contains the doctor information and has attributes that says if they are busy or not. It also has a worktime and a cure Person attribute which cures the patient based on the severity
* **Class Nurse :** a class that contains the nurse information and has attributes that says if the nurse is busy or not, has worktime and allows to treat patient with severity less than 10
* **Abstract class:** an abstract class will have the virtual void function of how to cure a patient. The nurse and doctor class are based on this
* **Emergency Room:** a class that represent an Emergency room. This has attributes that are associative containers like maps and priority queues. They have following functions:
* addPatient (adds patient based on severity)
* addDoctor(checks and sees if the doctor is busy and assign a patient if the severity
* addNurse : check and see if the nurse is busy and assign a patient if severity is less than 10
* treatPatients: cures the patient
* **Main function:**
* **Set up an emergency room:** for this an emergency room is set up, an object Emergency room is created and then a pointer pointing to that emergency room is created. The doctors and nurses are randomly chosen from a number 1 to 20 and the patients visiting the ER are also randomly selected.
* **OpenText:**  a function that reads the name of residents of 273ville. In this every name is pushed back to a vector named residents.
* **The emergency room updates every hour so a loop is created to refresh the emergency room every hour and since there are 168 hours in a week the ER is updated accordingly**
* **Randomly severity Is selected, where the severity lies between 1 and 20.**
* **addPatient function from Emergency Room is called which creates a new patient from the list of names that we had in the vector called residents**
* **take Patients : doctors or nurses are assigned patient based on the severity and if they are busy**
* **treatpatient : patients are cured based on the severity by the doctors or the nurses**
* **displayRecord : if the user wants to see the old patients**

UML Diagram

