



Exercise 17

While Loops

Tasks:

1. Write a C++ program that manages the patient lines for a welfare walk-in clinic. The clinic has 4 different specialties, namely; 1) Pediatrics, 2) Gynae & Obs, 3) Dentistry and 4) General. Your program should keep allowing walk-in patients to register for an appointment with their respective specialty clinic between 8 am and 3 pm. A token number is printed if a patient is registered successfully. If a patient comes during the lunch hour i.e., 12 pm to 1 pm, print a message that the doctor is on lunch break and will be back by 't' minutes, where 't' is computed by the system. Your system should also estimate if the lines are getting too long for the doctors to be able to end their shift on time i.e., by 4 pm. This is done by using the average time taken per patient to get served along with the number of patients left in line (details of average service times given below). If the line is full, then a message is printed to tell the patient to come the next day.

Details: Average patient service time per specialty:

- Pediatrics – 10 mins
- Gynae & Obs – 15 mins
- Dentistry – 20 mins
- General – 5 mins

Simplifying assumption: Assume that there is a long line of patients waiting each day, so there are never any empty time slots to be managed.