1 Part I

1. **What is the relationship between logical and physical models?**

   Logical models show what the system must do, whereas physical models demonstrate how the system will be constructed. A logical model is less specific in nature and doesn't show how things will actually be implemented. A physical model does just that.

2. **What is the function of the DFD in the SLDC?**

   The DFD presents a visual representation of the system. The nature of breaking DFDs into lower levels is much like the idea of breaking systems/programs down into small functions until everything is modular. DFDs can also be used to more easily communicate and explain with people a little outside of the IT realm.

3. **Draw examples of 4 basic DFD symbols.**
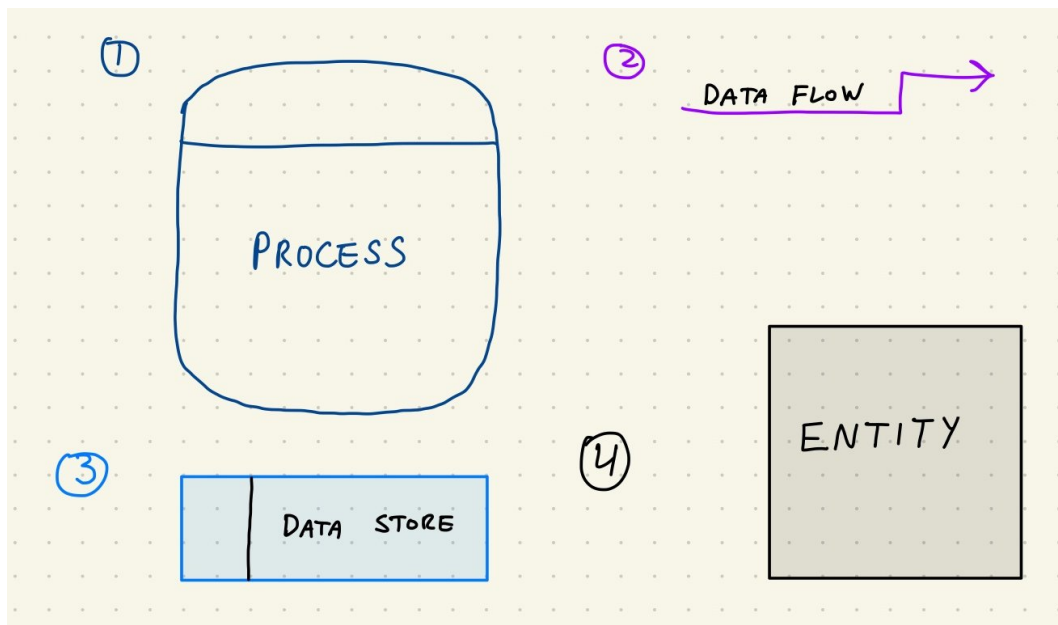

Figure 1: DFD symbols

4. **Six guidelines to follow when drawing DFDs?**

   (a) Make sure it fits on a single page.
   (b) Label the main process with the system's name.
   (c) Use distinct names for each symbol type.
   (d) Avoid overlapping data flow lines. (Would make it hard to follow)
   (e) Provide a unique name and reference number for each process.
   (f) Incorporate user feedback.

5. **What is the difference between a context diagram and a DFD?**

   The context diagram represents the system's scope and its external connections. (Low level detail) DFDs begin to piece together the system's processes and as they go deeper, break them down to their most basic behavior. (Show how data moves, eventually presenting high-level detail).

2   Part II

2.1   Library Information System
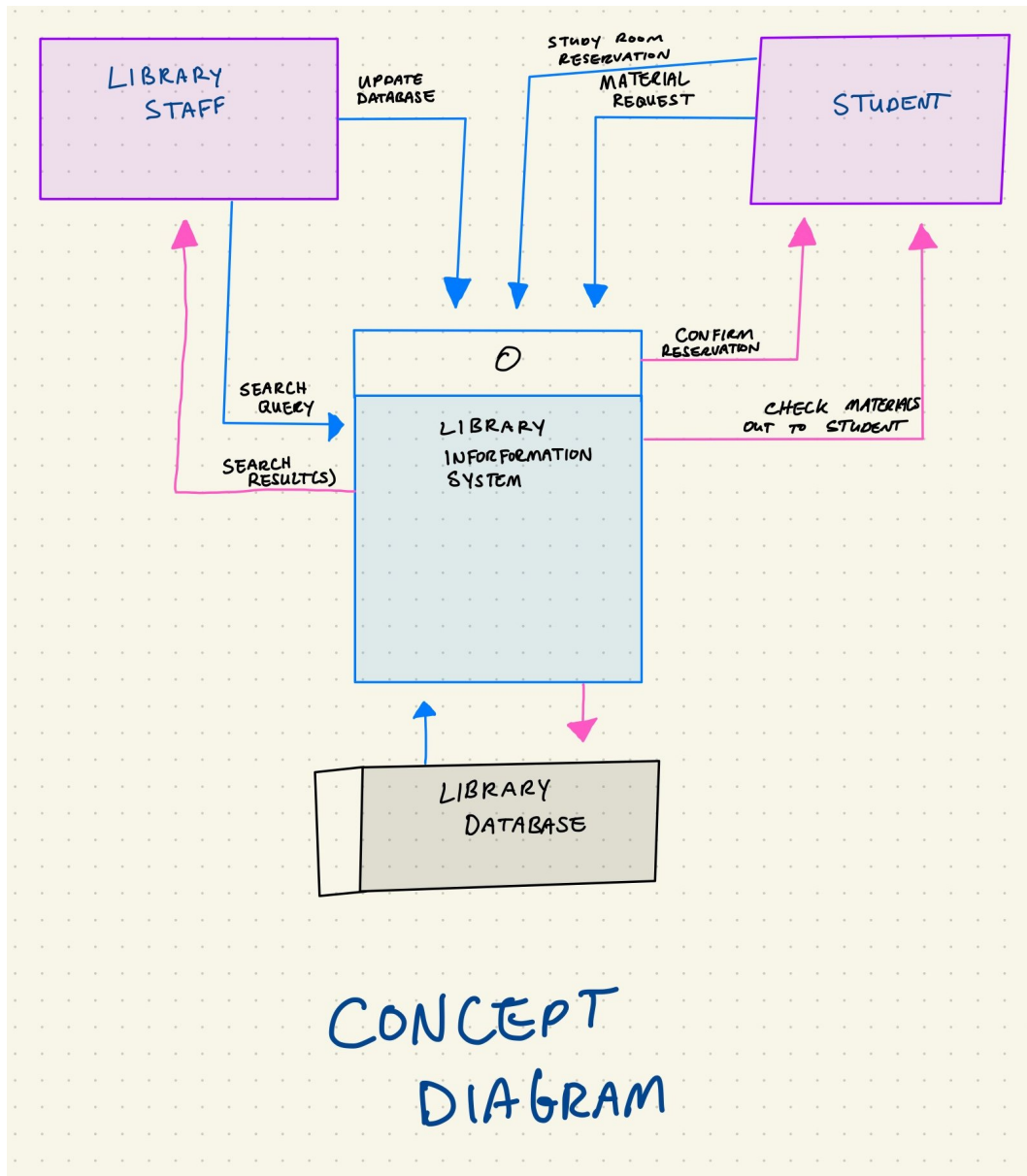
Concept Diagram for *Library Information System.*

Figure 2: Concept Diagram for Library Information System
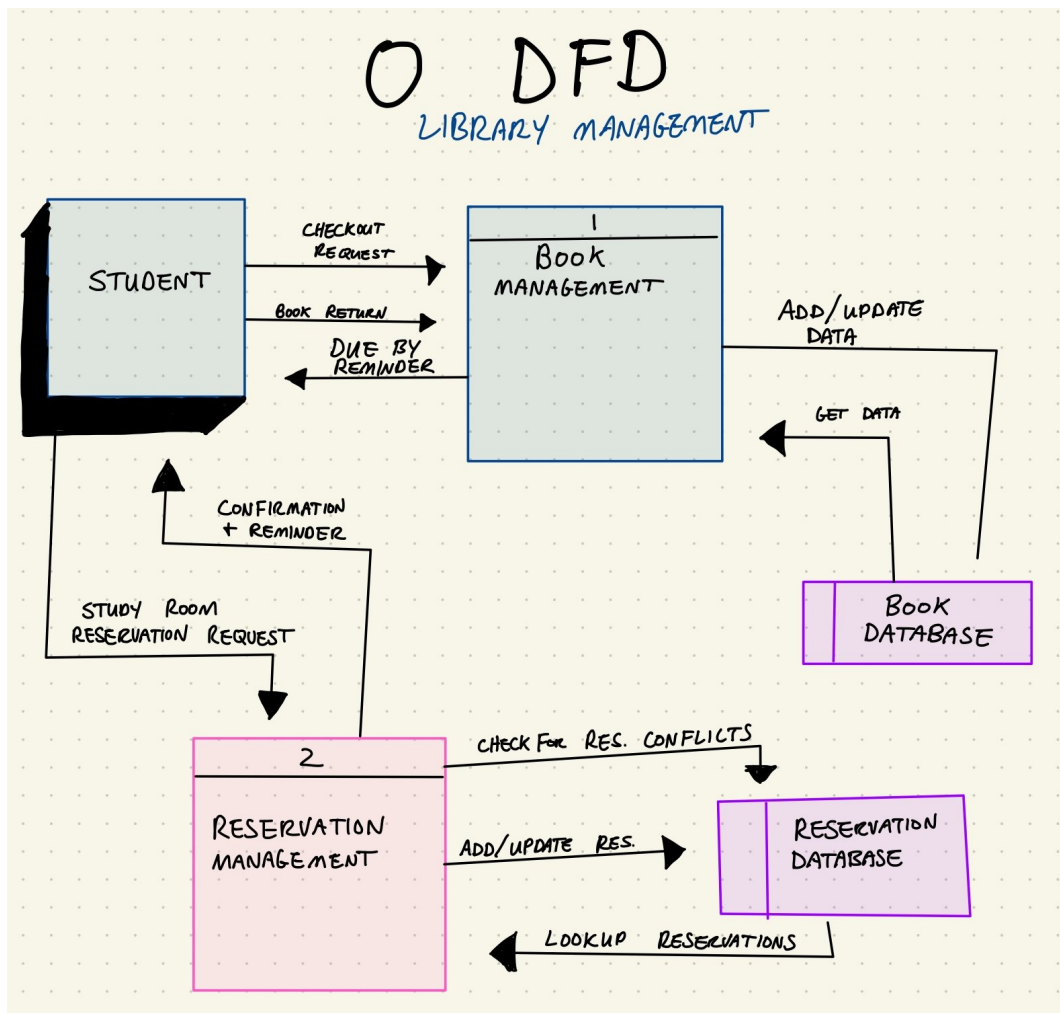
0 DFD for *Book Management Process*.

Figure 3: Level 0 DFD for Book Management Process

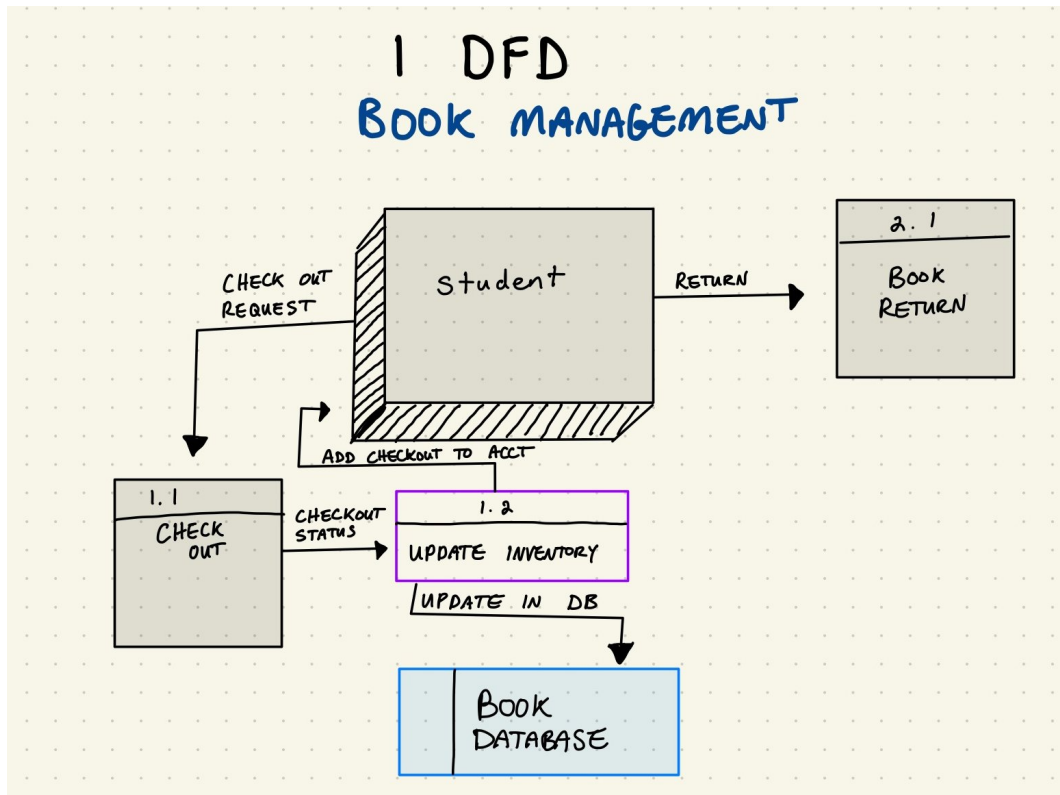Level 1 DFD for *Book Management Process.*

Figure 4: Level 1 DFD for Book Management Process

2.2 Primary Care Provider Information System

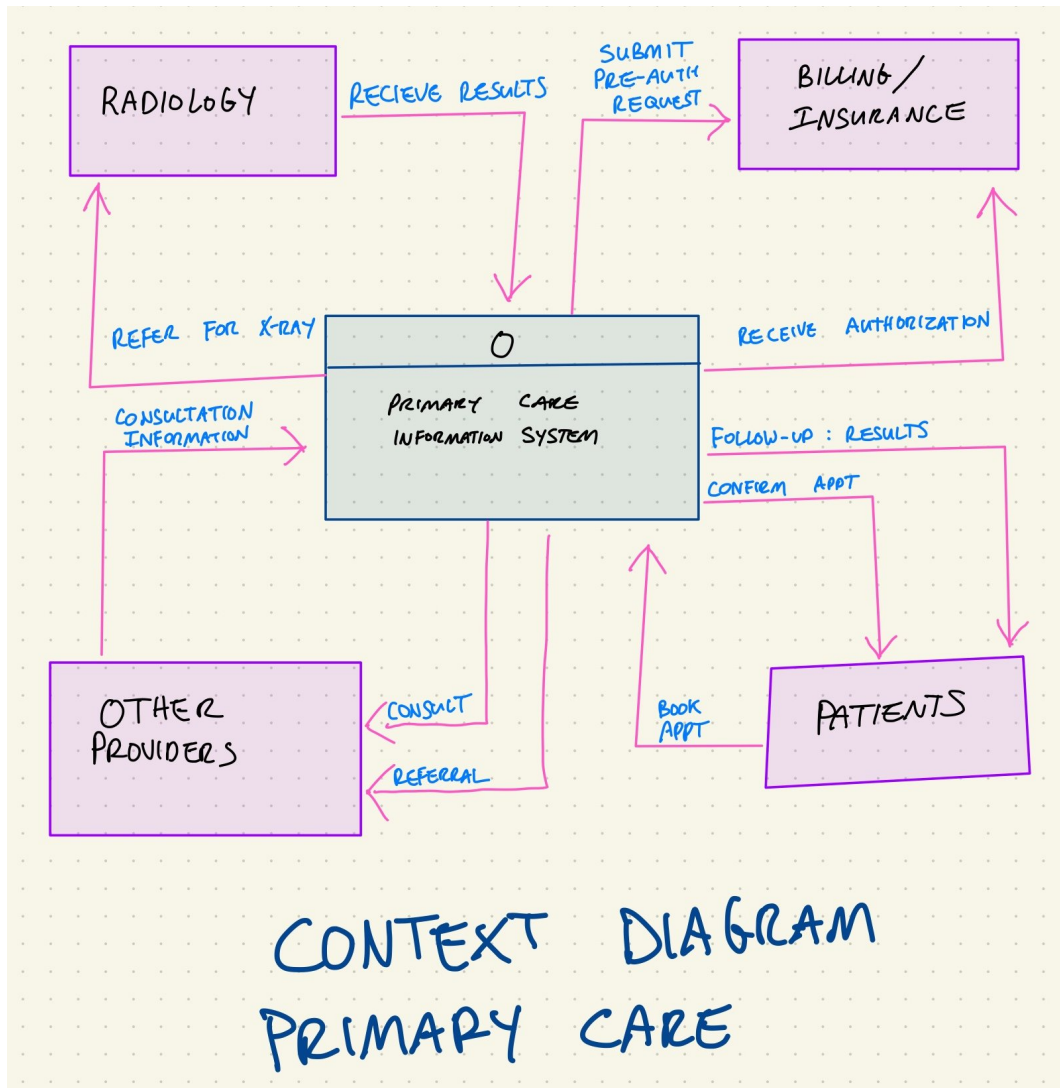This is the Context Diagram for the *Primary Care Provider Information System.*

Figure 5: Context Diagram: Primary Care Provider Information System

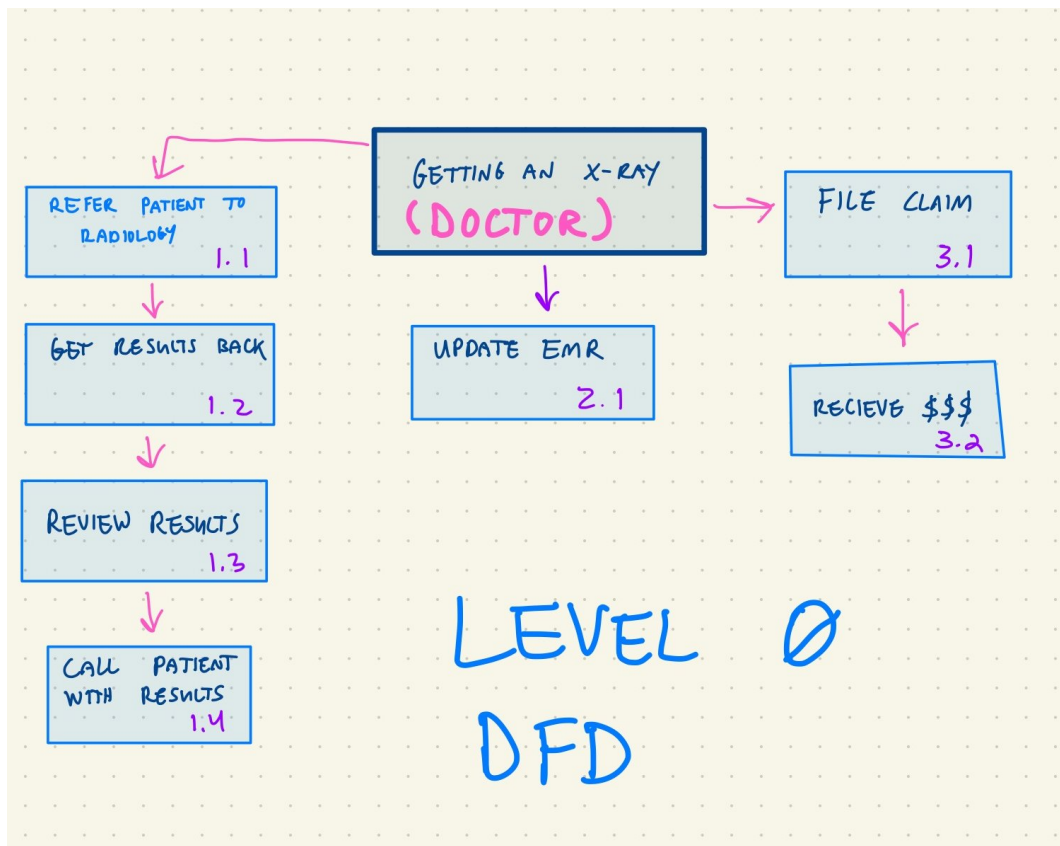This is the 0 DFD for *Primary Care Provider Information System.*

Figure 6: DFD 0: Data Flow Diagram for Primary Care Provider Information System