Bottom Up Development-[Project Name]

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# File name: Bottom Up Development-Project Name, Location: Phase 4 Box Folder

# Description:

**Bottom-up Development:** One of the differences between the functional decomposition and specifications development tasks and the design and implementation of the actual system is that with the previous steps, you start from the overall system and gradually get more specific; with the design and implementation, you start from the specific and build up to the entire system. This is necessary since for most projects, the system does not exist without the components. Software development can be different in that the structure of the main program can be set up, but it still will not function until each of its subcomponents is developed. One aspect that is critical to developing a functioning system, and often needs to be decided on early in the design, is determining how each subcomponent of the system will communicate with each other. This is called “freezing the interfaces.” This ensures that as each subcomponent is developed separately, when they are finally brought together, they will be able to function together.

Below are some examples of what types of considerations need to be taken into account during this step:

### Mechanical:

* How will different physical parts connect?
* What types and where will fasteners be used?
* What forces does each component need to be able to handle from other components?

### Electrical:

* How much voltage or current will be supplied/received?
* What type of signals will be sent (digital, analog)?
* How many inputs/outputs?

### Software:

* How will each element or subroutine in the program communicate with the main program?
* What format will the input/output information be in?
* How many inputs/outputs?

# Instructions

1. List all sub components/sub-systems of deliverable
2. Identify inputs/outputs for each subsystem
3. Write abstract for Bottom Up Development document

# Abstract:

# Graphic:

Create in MS Visio

# Sub Components:

|  |  |  |  |
| --- | --- | --- | --- |
| Sub-components | Connects with | Inputs | Output |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Example: Coffee Maker

# Abstract:

Bottom up development allows the team to view how the coffee maker sub components interact with one another. The team identified the inputs and outputs of each sub component. This allows each subcomponent to be designed independently from each other and still come together for assembly

# Diagram:



# Sub Components:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sub-components** | **Connects with** | **Inputs** | **Output** |
| Water Storage | Water Heater | Water | Hot Water |
| Water Heater | Coffee Grinds | Water | Coffee |
| Water Heater | Control Board | Analog signal | Heat |
| Coffee Grind Storage | Water Heater | Hot Water | Coffee |
| Coffee Grind Storage | Coffee Pot | Coffee | - |
| Heat Plate | Coffee Pot | Heat | Hot Coffee |
| Power adapter | Control Board | 120V | Electrical Signal |
| Control Board | Power Supply | Electrical Signal | Power |
| Control Board | Water Heater | Electrical Signal | Heat |
| Control Board | Heat Plate | Electrical Signal | Heat |