**Compare and contrast the pros achievable through vertical structural partitioning and horizontal structural partitioning.**

Partitioning is a process that results in the elaboration of data function, or behavior. It can be performed either horizontally or vertically.

Partitioning decomposes a problem into its constituent parts. Conceptually, we establish a hierarchical representation of function or information and then partition the uppermost element by:

(i) Exposing increasing detail by moving vertically in the hierarchy or

(ii) Functionally decomposing the problem by moving horizontally in the hierarchy.

Vertical partitioning often called factoring suggests that the control and work should be distributed top-down in program structure. Also, it defines control (decision-making) at the top and work at the bottom.

Advantages:

These are easy to maintain changes.

They reduce the change impact and error propagation.

Horizontal Partitioning: Horizontal partitioning defines separate branches for each major program function - input, process, and output.

Advantages:

Software that is easy to test.

Software that is easier to maintain.

Propagation of fewer side effects.

Software that is easier to extend.

**Contrast between Vertical and Horizontal Partitioning.**

Horizontal partitioning would be preferred over vertical partitioning in the long run and for long term software, since software based on horizontal partitioning is easier to extend.

Vertical partitioning has more levels of detail, and thus requires more attention, which makes it time consuming.

Because of the