Proteins and Enzymes: What is the difference between motifs and domains?

A motif is similar 3-D structure conserved among different proteins that serves a similar function. An example from the textbook shows a helix-turn-helix motif. This is a structure that is seen in unrelated proteins that bind DNA, so the presence of a helix-turn-helix motif is an indication of a protein's function. Domains, on the other hand, are regions of a protein that has a specific function and can (usually) function independently of the rest of the protein. A protein that my lab studies has multiple domains. It has a DNA binding domain located towards the N terminus of the protein, and a catalytic domain that is located closer to the C-terminus. Theoretically you can separate the domains from each other and the DNA binding domain will still bind DNA and the catalytic domain will still perform catalysis. There is some overlap with the definitions of domain and motif. Some motifs are also considered domains, and vice versa.

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