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CA Assignment-3

1 Ans) Yes, there is a limit to the number of recursive calls that we make. For each recursive call we have to make an activation block. For finite number of recursive calls we need infinite activation blocks which require Infinite stack memory which is not possible. So, no. of recursive calls you can make is equal to stack memory divided by the size of the block.

2 Ans) No. of registers that are available in a processor is limited. When we need variables more than the no. of registers we may use registers as twice (or) thrice depending upon the no. of variables. When we go for a function that uses the same register uses that which is already in use. We solve those values of registers in activation block in stack. When the function finishes it restore register to earlier values.

There are 2 types of register spilling.

i) Caller saved. → Saves the content of the register
ii) Callee saved. → Saves the registers & later restores.

3Ans) No, I think.

Because we require Conditional branches, call and return, unconditional branches is redundant.

When we go for if-else condition we require conditional branches (or) to end a loop so many uses. Whenever we want to use a function many times we define that function and call it by using call function.

We use return function to for all the above branches. So above are compulsory required instructions unconditional branches are redundant because we use a conditional statement which is true always to make it an unconditional statement.