Tutorial 2

Instruction: Make a single PDF file for the following questions. The name of file must be your admission number. The submitted file should contain the code and the screenshot of the generated output.

1. **For a given C code and mentioned scenarios, what will be the output with respect to the memory layout in C? Explain with reason. (**Note: Use **size** command)
   - When variable "number" is declared as a Global variable
   - When variable "number" is declared as a Static variable
   - When variable "number" is declared as an Extern variable (Define constant in sperate header file)
   - When variable "number" is declared as a Constant variable
   - When variable "number" is declared as an Auto variable
   - When variable "number" is declared as a Register variable
   - When variable "p" is declared as an Auto variable
   - When variable "p" is declared as a Static variable

C Code: Sum of Natural Numbers Using Recursion

```
#include <stdio.h>
int sum(int n);
int main() {
   int number, result;
   printf("Enter a positive integer: ");
   scanf("%d", &number);
   result = sum(number);
   printf("sum = %d", result);
   return 0;
}
int sum(int n) {
int p=n;
   if (n != 0)
      // sum() function calls itself
      return n + sum(n-1);
   else
      return n;
}
```