1. In the function old_sum(int n) is calculating the sum total of all the digits from 0 to n. To calculate the sum, the numberes are being added sequentially, i.e., sum = 0+1+2+...+n.
In the other case of function sum (int n), it also calculates the sum of all digits from 0 to n. But in this case, to calculate the total sum, it uses the formula for finding the sum of the firsts n natural numbeers. It first finds the product between n and (n+1).However, if the number n is very large, it may result in memory overflow

2. In the first function old_max2 (int n,const int a[n]) and in case of the second function int max2(int n, const int a[n]) both the functions essentially perform the same function, i.e., they return the index of second highest number in an array assuming there are no repetitive numbers. But if the largest number occurs both the functions will give a wrong answer and would return the larger of the two index but in either case answer will be same. An exception occurs if there are only 2 inputs and the inputs are repeated in which case the two functions will return different indexes.