Problem7: InnerProduct

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Introduction

In this excersise, we will write a code to culculate inner product. If you have vectors, $A = (a_0, a_1, ..., a_n)$ and $B = (a_0, a_1, ..., a_n)$, a inner product of A and B is $A \cdot B = \sum_{i=0}^{n} a_i b_i$.

Question

- write a function to culculate a inner product of one dimention vectors A and B
- in this excersise, let `A <- c(6,4,6,8,9,1)` and `B <- c(1,2,3,4,5,6)`

Sample Answer

```
InnerProduct_of <- function(A,B){
      N <- length(A)
      if(N != length(B)){
        return('error: two vectors do not have the same length')
      }
      S <- 0
      for (i in 1:N){
        S = S + A[i]*B[i]
      }
      return(S)
  }

A <- c(6,4,6,8,9,1)
B <- c(1,2,3,4,5,6)
InnerProduct_of(A,B)
```

```
## [1] 115
```