



Data Structure in Mathematics

Assignment 1

HW1 → R1.4 Write a short Python function that takes a positive integer n and returns the sum of the squares of all the positive integers smaller than n .

Procedural Method

```
def f(n, false='Out of range'):  
    if n > 0:  
        sum = 0  
        for i in range(0, n):  
            sum += i**2  
        return sum  
    else:  
        return false
```

HW2 → R1.5 Give a single command that computes the sum from Exercise 1.4, relying on Python's comprehension syntax and the built-in sum function.

Procedural Method

```
print(sum([i ** 2 for i in range(int(input('Enter Number here: '))])))
```

HW3 → OOP Method of R1.4

```
class Sum:
    def __init__(self, n):
        self.n = n

    def p(self, false='Out of Range'):
        if self.n > 0:
            sum = 0
            for i in range(0, n):
                sum += i**2
            return sum
        else:
            return false

if __name__ == '__main__':
    n = int(input('Enter the number here: '))
    Ans = Sum(n)
    print(Ans.p())
```