2.1 Prove squared min is n^2

```
for (i=0 ; i<n-1 ; i++)          n
    for (j=i+1 , j<n ; j++)      n-1
        do things (this is constant time for comparison)
    }
}
```

To prove it:

$$\sum_{i=1}^{n-1} n-i = \sum_{i=1}^{n-1} k = \frac{n(n-1)}{2} \in \Theta(n^2)$$

Therefore it runs in $O(n^2)$ time.
Additionally, if we think about it the outer loop runs from 0 to n-2 this means it iterates n-1 times. The inner loop runs from i+1 to n-1 so $n-(i+1)$ times. The simple comparison inside is just linear time.

For the number of comparisons at worst case it is $(n-1)\cdot(n-1+1)/2 = \frac{n\cdot(n-1)}{2}$ which is $O(n^2)$