Assignment#1 Question#2 Andrew Plum

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$$2)\ \sum_{i=0}^{n-1}\sum_{j=i+1}^{n-1} 1 = \sum_{i=0}^{n-1}(n-1)-(i+1)+1 =$$

$$= \sum_{i=0}^{n-1}[n-1-i-1+1] = \sum_{i=0}^{n-1}[n-i-1] =$$

$$= (n-1)\sum_{i=0}^{n-1} 1 - \sum_{i=0}^{n-1} i = n-1[n-1-0+1] - \frac{(n-1)n}{2} =$$

$$= \frac{2(n-1)n-(n-1)n}{2} = \frac{n^2-n}{2} \approx \boxed{\Theta(n^2)}$$