This is the kind of thing to calculate :

$$W(i,j,l) = X(i) + \sum_{j,k}^{j,k \in R} Y(i,j) Z(k,l) \delta_{jk}$$

The $W(i,j,l)$ takes three integers, i, j, l, as inputs, and returns a number, e.g.,

$$W(1,2,3) = 7$$

It is a better to think of, $W(i,j,l)$, as a function, not an array. It is to described by an instance of the term class, which contains this function.

$$W(i,j,l) = X(i) + \sum_{j,k}^{j,k \in R} Y(i,j)Z(k,l)\delta_{jk}$$

The $\sum$ sums over all indices, j , k, in the range R. E.g., if $R = \{0,1\}$

$$\sum_{j,k}^{j,k \in R} Y(i,j)Z(k,l)\delta_{jk} =$$

$$Y(i,0)Z(0,l)\delta_{00} + Y(i,0)Z(1,l)\delta_{01} + Y(i,1)Z(0,l)\delta_{10} + Y(i,1)Z(1,l)\delta_{11}$$

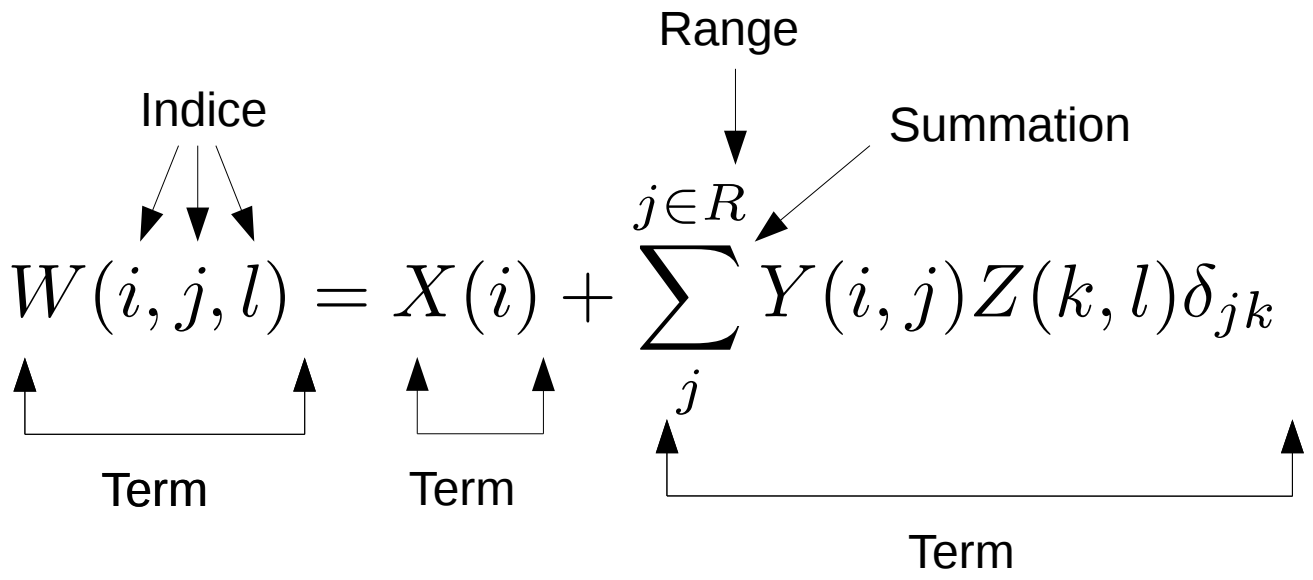
The δ_{jk} constrains the indices according to

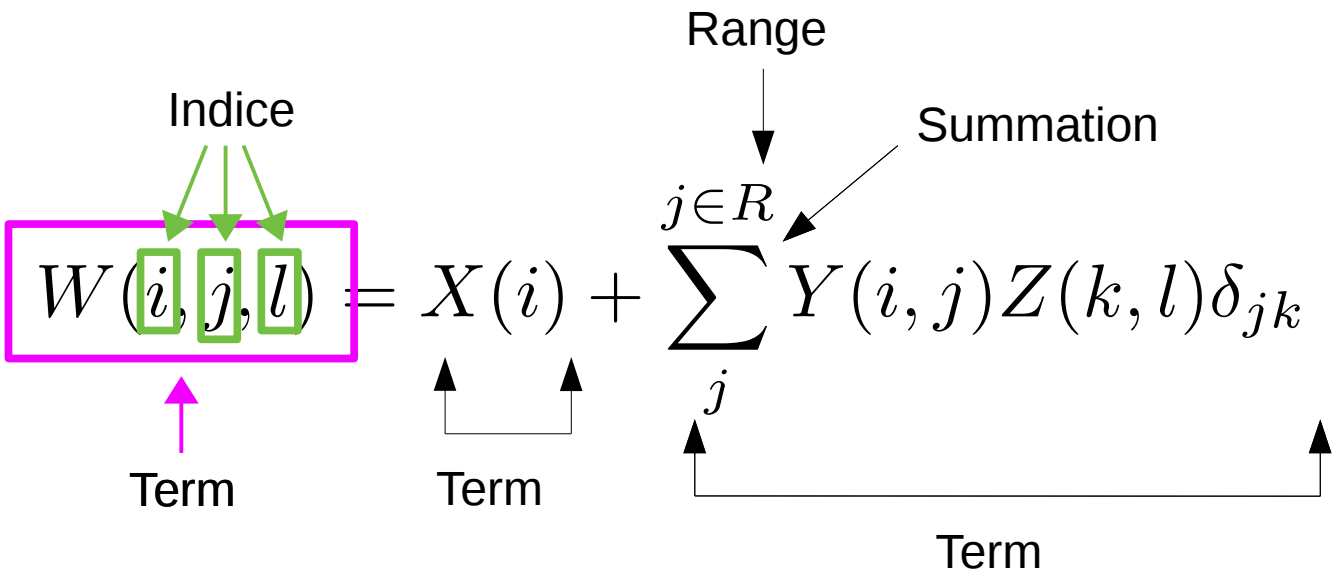
$$\delta_{jk} = \begin{cases} 1 & \text{if} \quad j == k \\ 0 & \text{otherwise} \end{cases}$$

So

$$\sum_{j,k}^{j,k \in R} Y(i,j)Z(k,l)\delta_{jk} =$$

$$Y(i,0)Z(0,l) + Y(i,1)Z(1,l)$$


Range
Indice
Summation
$j \in R$
$W(i,j,l) = X(i) + \sum_{j} Y(i,j)Z(k,l)\delta_{jk}$
Term
Term
Term


Range
Indice
Summation
$W(i,j,l) = X(i) + \sum_{j \in R} Y(i,j)Z(k,l)\delta_{jk}$
Term
Term
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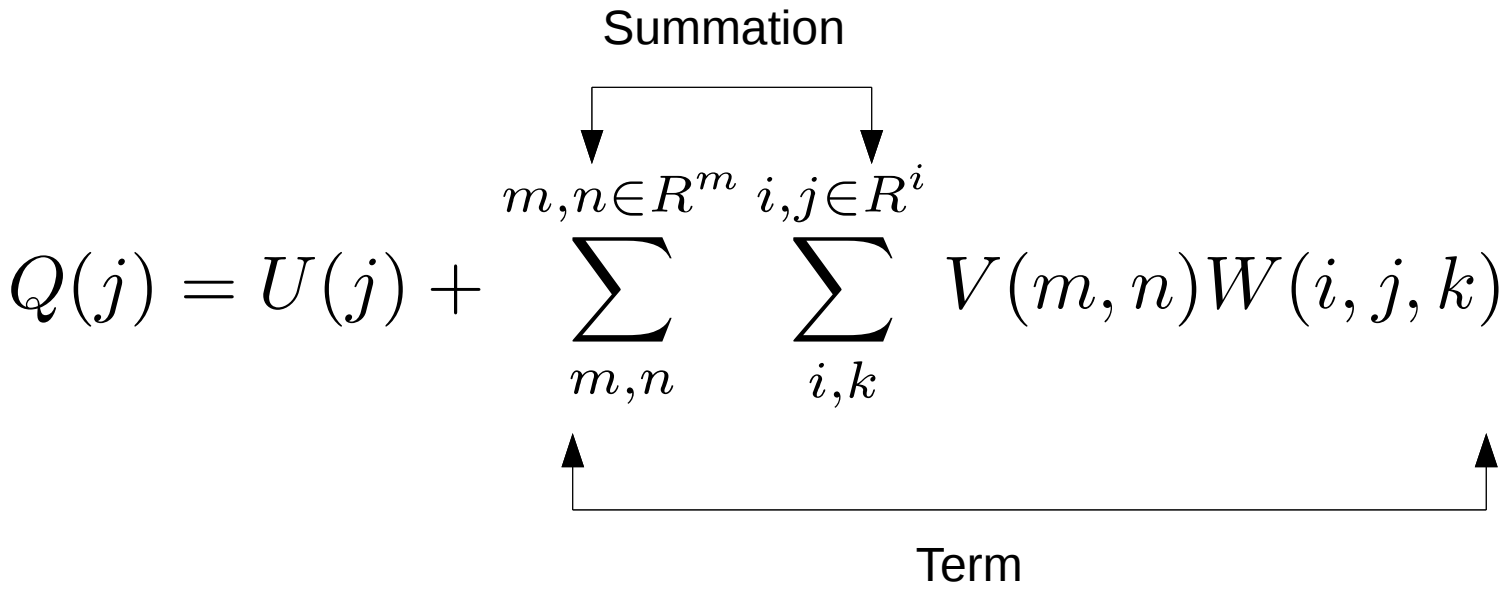
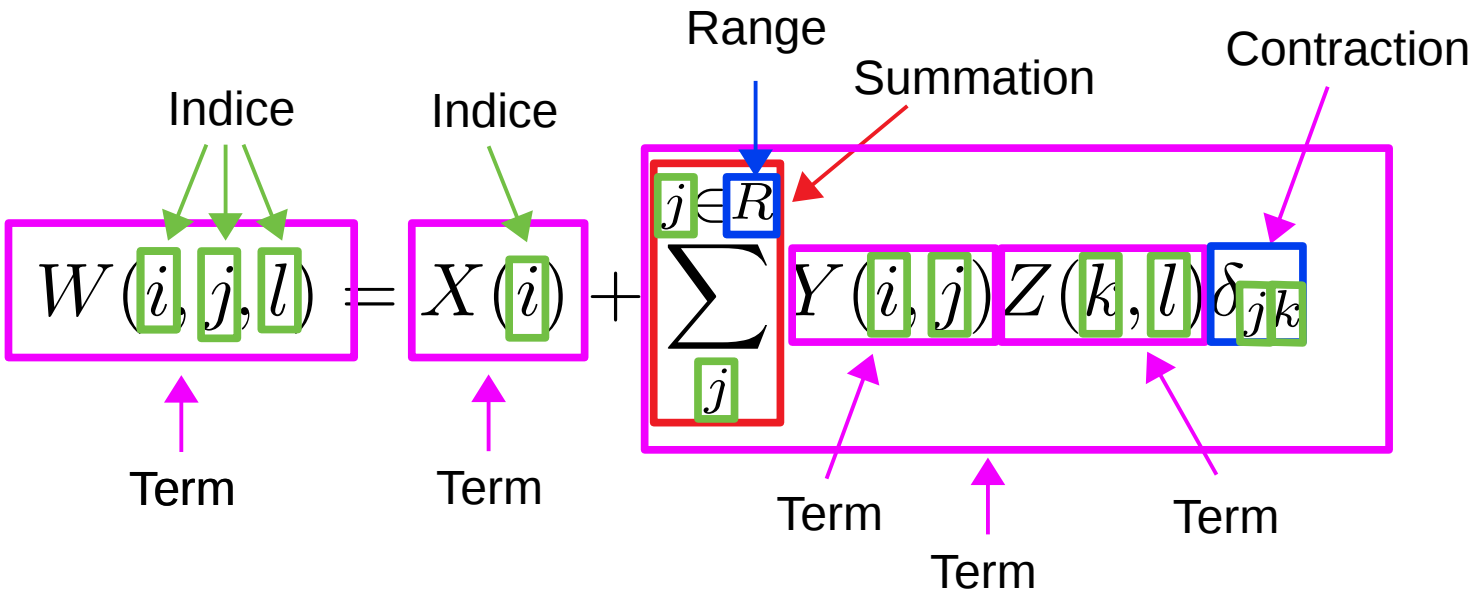
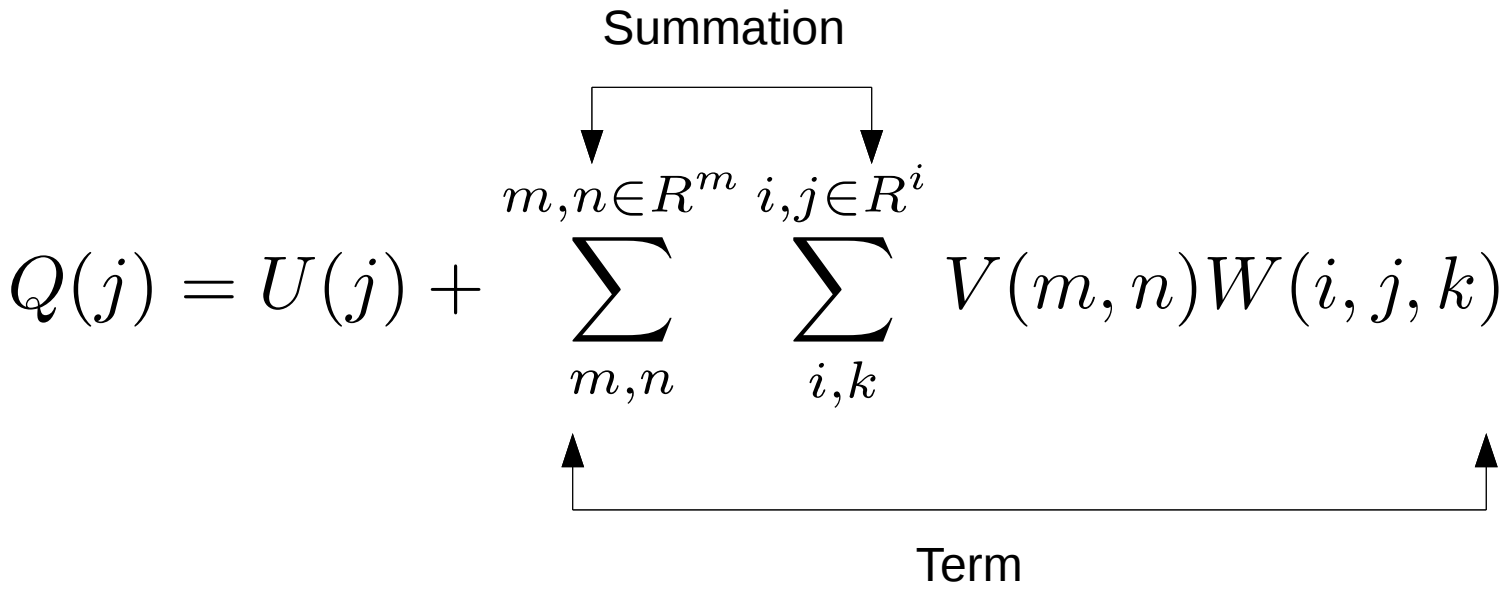
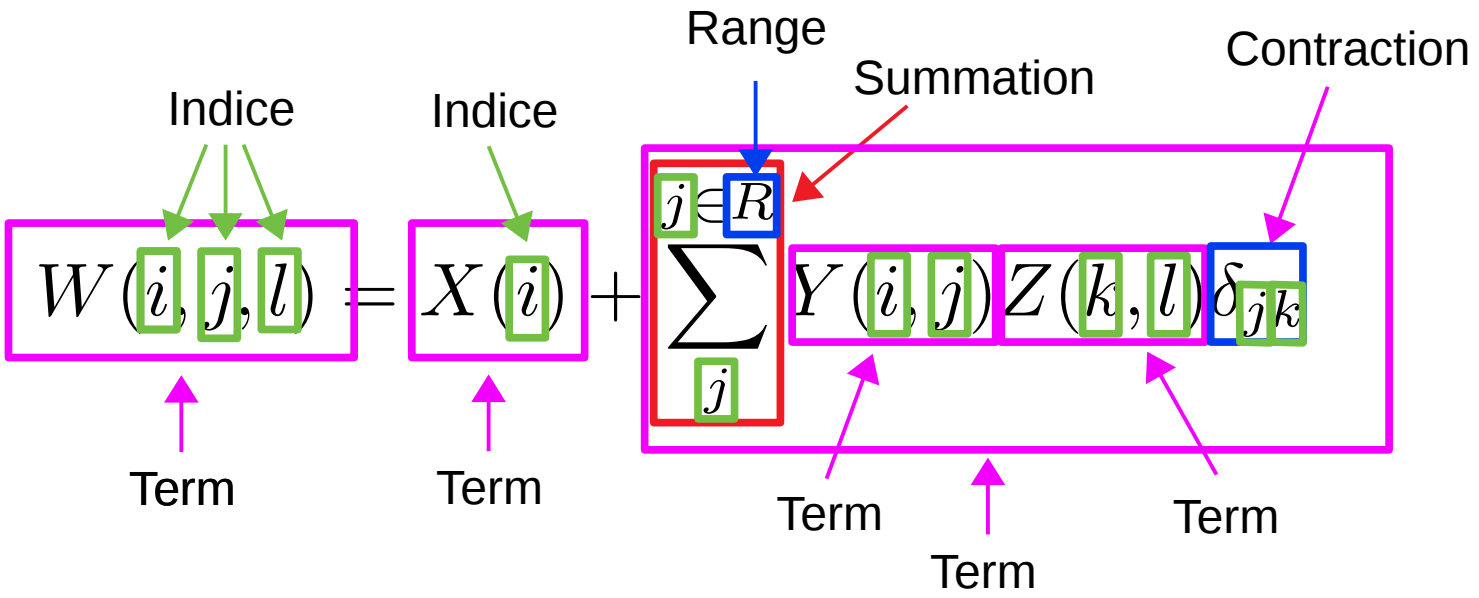

Summation
$Q(j) = U(j) + \sum_{m,n \in R^m} \sum_{i,j \in R^i} V(m,n)W(i,j,k)$
Term


Range
Summation
Contraction
Indice
Indice
$W(i,j,l) = X(i) + \sum_{j \in R} Y(i,j) Z(k,l) \delta_{jk}$
Term
Term
Term
Term
Term


Summation
$Q(j) = U(j) + \sum_{m,n \in R^m} \sum_{i,j \in R^i} V(m,n) W(i,j,k)$
Term


Range
Summation
Contraction
Indice
Indice
$W(i,j,l) = X(i) + \sum_{j \in R} Y(i,j) Z(k,l) \delta_{jk}$
Term
Term
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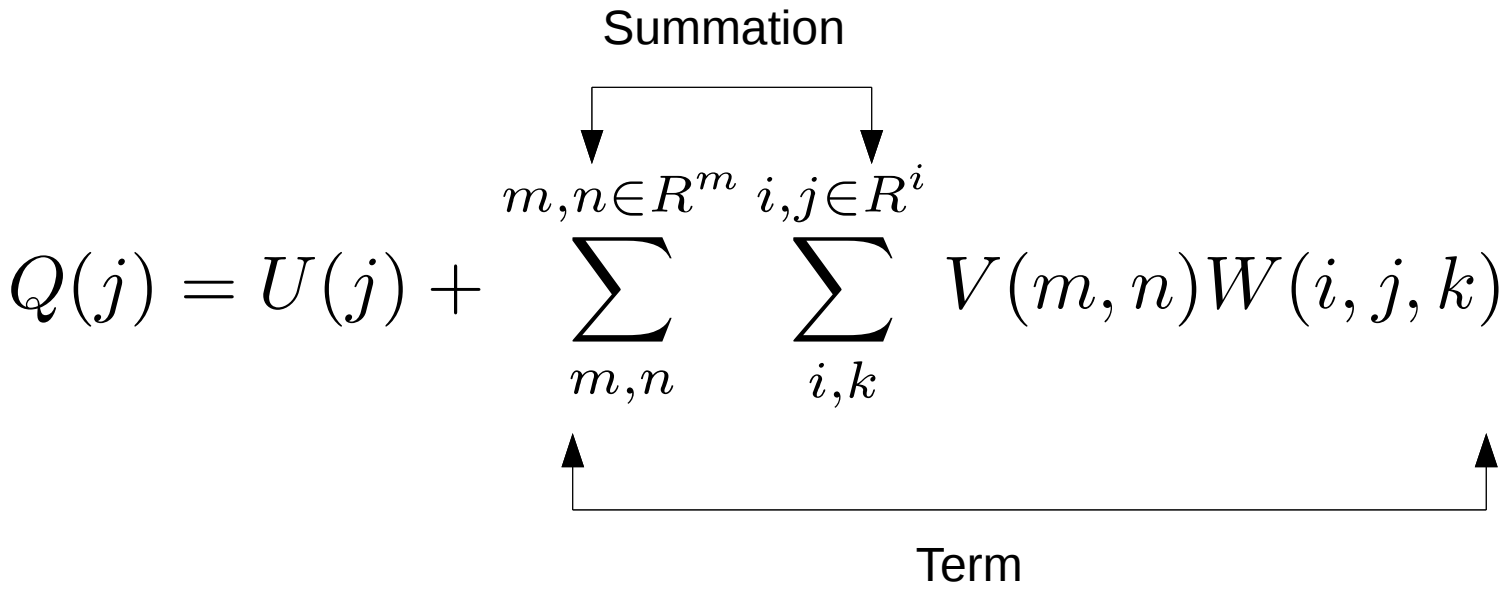
Summation
$Q(j) = U(j) + \sum_{m,n \in R^m} \sum_{i,j \in R^i} V(m,n) W(i,j,k)$
Term