Code Listing

1 Code examples

```
import numpy as np

def incmatrix(genl1,genl2):
    m = len(genl1)
    n = len(genl2)
    M = None #to become the incidence matrix
    VT = np.zeros((n*m,1), int)  #dummy variable

    #compute the bitwise xor matrix
    M1 = bitxormatrix(genl1)
    M2 = np.triu(bitxormatrix(genl2),1)

    for i in range(m-1):
        for j in range(i+1, m):
            [r,c] = np.where(M2 == M1[i,j])
            for k in range(len(r)):
                VT[(i)*n + r[k]] = 1;
                VT[(i)*n + c[k]] = 1;
                VT[(j)*n + r[k]] = 1;
                VT[(j)*n + c[k]] = 1;

                if M is None:
                    M = np.copy(VT)
                else:
                    M = np.concatenate((M, VT), 1)

                VT = np.zeros((n*m,1), int)

    return M
```

Listing 1: Python example

The next code will be directly imported from a file:

```
function X = BitXorMatrix(A,B)
%function to compute the sum without charge of two vectors

  %convert elements into usigned integers
  A = uint8(A);
  B = uint8(B);

  m1 = length(A);
  m2 = length(B);
  X = uint8(zeros(m1, m2));
  for n1=1:m1
    for n2=1:m2
      X(n1, n2) = bitxor(A(n1), B(n2));
    end
  end
```

Listing 2: Octave sample code

Listings