```python
import numpy as np
import numpy.ma as ma
from scipy.interpolate import griddata
from numpy.random import uniform, seed
from matplotlib import cm

def gen_label(X):
    return np.random.binomial(1, 1.0 / (1.0 + np.exp(-np.matmul(X, (-2.0, 1.0)))))

def IRLS(X, y):
    weight = np.zeros(shape=(2))
    # bias = np.log(np.mean(y) / (1.0 - np.mean(y)))
    bias = 0
    #print(bias)
    threshold = 1e-6
    change = 1e6
    while(change >= threshold):
        ita = np.matmul(X, weight) + bias
        #print(ita)
        miu = 1.0 / (1.0 + np.exp(-ita))
        #print(miu)
        s = np.multiply(miu, 1.0 - miu)
        z = ita + (y - miu) / s
        #print(s, z)
        s = np.diag(s).copy()
        XTSX_inv = np.linalg.inv(np.matmul(np.matmul(np.transpose(X), s), X))
        XTSz = np.matmul(np.matmul(np.transpose(X), s), z)
        weight_new = np.matmul(XTSX_inv, XTSz)
        change = np.linalg.norm(weight_new - weight)
        weight = weight_new
    return weight

def get_fisher_information(X, beta):
    prob = 1.0 / (1.0 + np.exp(-np.matmul(X, (-2.0, 1.0))))
    w = np.multiply(prob, 1 - prob)
    w = np.diag(w).copy()
    return np.matmul(np.matmul(np.transpose(X), w), X)
```