CSCI3320 Programming Assignment 2

Problem 1

- Confusion matrix:

	Predicted class1	**Predicted class2**
Actual class 1	104	21
Actual class 2	33	42

- Accuracy = 0.73

  Class 1: precision = 0.7591240875912408 recall = 0.832 f1 = 0.7938931297709924

  Class 2: precision = 0.6666666666666666 recall = 0.56 f1 = 0.6086956521739131

  Average f1 = 0.7012943909724527

Problem 2

- Confusion matrix:

	Predicted class1	**Predicted class2**
Actual class 1	268	12
Actual class 2	73	47

- Accuracy = 0.7875

  Class 1: precision = 0.7859237536656891 recall = 0.9571428571428572 f1 = 0.8631239935587762

  Class 2: precision = 0.7966101694915254 recall = 0.39166666666666666 f1 = 0.5251396648044692

  Average f1 = 0.7281769829853447

Problem 3

- Confusion matrix:

	Predicted class1	Predicted class2	Predicted class3	Predicted class4
Actual class 1	419	0	269	57
Actual class 2	701	1273	749	1222
Actual class 3	442	0	370	43
Actual class4	38	327	212	278

- Accuracy = 0.465625

  Class 1: precision = 0.48664343786295006 recall = 0.9168490153172867 f1 = 0.6358118361153262

  Class 2: precision = NaN recall = 0.0 f1 = NaN

  Class 3: precison = 0.4209702660406886 recall = 0.5592515592515592 f1 = 0.4803571428571428

  Class 4: precision = 0.57 recall = 0.1701492537313433 f1 = 0.2620689655172414

  Average f1 = NaN

Problem 4

- Confusion matrix:

	Predicted class1	Predicted class2
Actual class 1	456	155
Actual class 2	74	515

- Accuracy = 0.8091666666666667

  Class 1: precision = 0.7463175122749591 recall = 0.8603773584905661 f1 = 0.799298860648554

  Class 2: precision = 0.8743633276740238 recall = 0.7686567164179104 f1 = 0.818109610802224

  Average f1 = 0.8087042357253891