Assignment 1 Report

Problem 1

|  |  |  |
| --- | --- | --- |
| Prediction | 1 | 2 |
| Actual |  |  |
| 1 | 104 | 21 |
| 2 | 33 | 42 |

Accuracy for all classes = 0.73

Precision for class 1 = 0.7591240875912408

Precision for class 2 = 0.6666666666666666

Recall for class 1 = 0.832

Recall for class 2 = 0.56

f1 score for class 1 = 0.7938931297709924

f1 score for class 2 = 0.6086956521739131

Average f1 score= 0.7012943909724527

Problem 2

|  |  |  |
| --- | --- | --- |
| Prediction | 1 | 2 |
| Actual |  |  |
| 1 | 268 | 12 |
| 2 | 73 | 47 |

Accuracy for all classes = 0.7875

Precision for class 1 = 0.7859237536656891

Precision for class 2 = 0.7966101694915254

Recall for class 1 = 0.9571428571428572

Recall for class 2 = 0.39166666666666666

f1 score for class 1 = 0.8631239935587762

f1 score for class 2 = 0.5251396648044692

Average f1 score= 0.6941318291816228

Problem 3

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Prediction | 1 | 2 | 3 | 4 |
| Actual |  |  |  |  |
| 1 | 419 | 0 | 38 | 0 |
| 2 | 187 | 0 | 140 | 0 |
| 3 | 168 | 0 | 270 | 43 |
| 4 | 86 | 0 | 192 | 57 |

Accuracy for all classes = 0.46625

Precision for class 1 = 0.4872093023255814

Recall for class 1 = 0.9168490153172867

f1 score for class 1 = 0.6362946089597571

Precision for class 2 = nan

Recall for class 2 = 0.0

f1 score for class 2 = nan

Precision for class 3 = 0.421875

Recall for class 3 = 0.5613305613305614

f1 score for class 3 = 0.48171275646743983

Precision for class 4 = 0.57

Recall for class 4 = 0.1701492537313433

f1 score for class 4 = 0.2620689655172414

Average f1 score = 0.4600254436481461

Problem 4

|  |  |  |
| --- | --- | --- |
| Prediction | 1 | 2 |
| Actual |  |  |
| 1 | 456 | 74 |
| 2 | 155 | 515 |

Accuracy for all classes = 0.8091666666666667

Precision for class 1 = 0.7463175122749591

Recall for class 1 = 0.8603773584905661

f1 score for class 1 = 0.799298860648554

Precision for class 2 = 0.8743633276740238

Recall for class 2 = 0.7686567164179104

f1 score for class 2 = 0.818109610802224

Average f1 score = 0.8087042357253891