**Dirichlet non‑IID split (α = 1000), no DP**

Duration: 7  879 s (~2 h 11 min) Rounds: 50

**Overall performance (Round 50)**

* **Global Accuracy:** 84.96 %
* **Global F1 (macro):** 0.481
* **Global Precision (macro):** 0.518
* **Global Recall (macro):** 0.473

**Global loss trends**

* **Distributed training loss:** 0.302 → 0.149 (round 1 → 50)  
  *lowest*: 0.1489 @ round 47
* **Centralized evaluation loss:** 2.282 → 1.153 (round 0 → 50)  
  *lowest*: 1.1252 @ round 47

**Per‑class metrics @ Round 50**

| **Class** | **F1** | **Precision** | **Recall** | **Note** |
| --- | --- | --- | --- | --- |
| 0 | 0.010 | 0.033 | 0.006 | Class essentially undetected |
| 1 | 0.068 | 0.164 | 0.043 | Very low recall/precision |
| 2 | 0.279 | 0.335 | 0.239 | Moderate recovery, recall still weak |
| 3 | 0.692 | 0.631 | 0.766 | Stable & high |
| 4 | 0.805 | 0.784 | 0.826 | Balanced high performance |
| 5 | 0.972 | 0.973 | 0.972 | Near‑perfect |
| 6 | **0.997** | 0.994 | **1.000** | Perfect recall, top F1 |
| 7 | 0.784 | 0.833 | 0.741 | Consistently strong |
| 8 | 0.207 | 0.432 | 0.136 | Recall remains limited |
| 9 | 0.000 | 0.000 | 0.000 | No detection |

**Peak global metrics across training**

| **Metric (macro)** | **Best value** | **Round** |
| --- | --- | --- |
| Accuracy | **85.12 %** | 48 |
| F1 score | **0.483** | 42 |
| Precision | **0.550** | 46 |
| Recall | **0.476** | 42 |

**Insights**

* **Convergence:** losses flatten after ~35 rounds; best overall metrics cluster in rounds 42–48.
* **Effect of near‑IID split:** accuracy climbs to mid‑80 % but **macro F1 lags (< 0.49)**—dominance of frequent classes masks minority‑class weakness.
* **Minority‑class challenge:** classes 0, 1, 8, 9 remain poorly learned; class 9 never triggered a correct prediction.
* **Strong majors:** classes 4 – 7 deliver robust, often near‑perfect, detection; class 6 reaches perfect recall early and sustains it.

**Suggestions for next runs**

1. **Class‑balanced strategies** – focal or re‑weighted loss, oversampling of classes 0/1/8/9.
2. **Data augmentation & label audit** – verify class 9 labels and augment scarce classes.
3. **Adaptive client sampling** – bias client selection toward minority‑heavy shards until recall improves.
4. **Early‑stopping window** around rounds 40‑48 to cut 15‑20 % training time without performance loss.

INFO : [SUMMARY]

INFO : Run finished 50 round(s) in 7879.22s

INFO : History (loss, distributed):

INFO : round 1: 0.30204468068258505

INFO : round 2: 0.17063232294409333

INFO : round 3: 0.1666060310450679

INFO : round 4: 0.16694559904681497

INFO : round 5: 0.17131145534057327

INFO : round 6: 0.17194208004076264

INFO : round 7: 0.16260399339338083

INFO : round 8: 0.16595115321000406

INFO : round 9: 0.16820684695957142

INFO : round 10: 0.17143272862834788

INFO : round 11: 0.16539329174987247

INFO : round 12: 0.16524776289339232

INFO : round 13: 0.16464139454945195

INFO : round 14: 0.1690072549023662

INFO : round 15: 0.16105168575597667

INFO : round 16: 0.15828664064603964

INFO : round 17: 0.15683135581005264

INFO : round 18: 0.15721943602047225

INFO : round 19: 0.15571563810550307

INFO : round 20: 0.15865046603409486

INFO : round 21: 0.1593295967915157

INFO : round 22: 0.16029978924696078

INFO : round 23: 0.1632103660989893

INFO : round 24: 0.15811685975558337

INFO : round 25: 0.15738921580388598

INFO : round 26: 0.1530233586437937

INFO : round 27: 0.15814111489057975

INFO : round 28: 0.15535181694249756

INFO : round 29: 0.15542457736091606

INFO : round 30: 0.1582138752757472

INFO : round 31: 0.15525479892308489

INFO : round 32: 0.15474544524743136

INFO : round 33: 0.15183487299055098

INFO : round 34: 0.15430886100845467

INFO : round 35: 0.15084042429415126

INFO : round 36: 0.15326591048854735

INFO : round 37: 0.15023405891063707

INFO : round 38: 0.1558854200321627

INFO : round 39: 0.15455141157195929

INFO : round 40: 0.1510344699128883

INFO : round 41: 0.1536297268211175

INFO : round 42: 0.15270804340609984

INFO : round 43: 0.15020980397442402

INFO : round 44: 0.14979747040540833

INFO : round 45: 0.15059787947620826

INFO : round 46: 0.1513255244131482

INFO : round 47: 0.14894855261657144

INFO : round 48: 0.1505493721384506

INFO : round 49: 0.14948215735288556

INFO : round 50: 0.14904557479923028

INFO : History (loss, centralized):

INFO : round 0: 2.2818747658543113

INFO : round 1: 1.7177278358767216

INFO : round 2: 1.2038465602582742

INFO : round 3: 1.163633614103651

INFO : round 4: 1.1712804431860693

INFO : round 5: 1.170494899162673

INFO : round 6: 1.1478695995143535

INFO : round 7: 1.169689087468946

INFO : round 8: 1.1648471439591408

INFO : round 9: 1.1556962225709424

INFO : round 10: 1.1687050097340512

INFO : round 11: 1.1495369453440354

INFO : round 12: 1.13423168866933

INFO : round 13: 1.1646291325623652

INFO : round 14: 1.1676961483381254

INFO : round 15: 1.1563399230912248

INFO : round 16: 1.1452571585024087

INFO : round 17: 1.1577636771721627

INFO : round 18: 1.1516718427367176

INFO : round 19: 1.149815619837316

INFO : round 20: 1.1416459459262431

INFO : round 21: 1.165417176094714

INFO : round 22: 1.149785635780615

INFO : round 23: 1.1712895386015696

INFO : round 24: 1.1676921315436986

INFO : round 25: 1.152927065004349

INFO : round 26: 1.1471574732967453

INFO : round 27: 1.1421009594871125

INFO : round 28: 1.1517269499123566

INFO : round 29: 1.1454204207284613

INFO : round 30: 1.1568094670327267

INFO : round 31: 1.169598938304538

INFO : round 32: 1.1327484774106085

INFO : round 33: 1.1517919605058415

INFO : round 34: 1.1587210668975771

INFO : round 35: 1.143122358933746

INFO : round 36: 1.1476208417205351

INFO : round 37: 1.1552211220655129

INFO : round 38: 1.1525570648167822

INFO : round 39: 1.1542323466148572

INFO : round 40: 1.146983872774305

INFO : round 41: 1.133133979598708

INFO : round 42: 1.1536347899576203

INFO : round 43: 1.1467682649823943

INFO : round 44: 1.1314222526397624

INFO : round 45: 1.1413253376205643

INFO : round 46: 1.1595215697102073

INFO : round 47: 1.125199547875248

INFO : round 48: 1.1513224908587796

INFO : round 49: 1.1518368364294136

INFO : round 50: 1.1534226113197539

INFO : History (metrics, centralized):

INFO : {'accuracy': [(0, 0.11493159988357426),

INFO : (1, 0.69773940040749),

INFO : (2, 0.8277481323372465),

INFO : (3, 0.830542349859319),

INFO : (4, 0.8310662656447075),

INFO : (5, 0.8274764723003784),

INFO : (6, 0.8262928107111671),

INFO : (7, 0.8366935092655476),

INFO : (8, 0.8332007373629572),

INFO : (9, 0.8310468613563597),

INFO : (10, 0.8261375764043853),

INFO : (11, 0.832793247307655),

INFO : (12, 0.8342679732220821),

INFO : (13, 0.834132143203648),

INFO : (14, 0.8316095857184438),

INFO : (15, 0.8362860192102455),

INFO : (16, 0.8386145338119725),

INFO : (17, 0.8400892597263996),

INFO : (18, 0.8399534297079655),

INFO : (19, 0.8419326671194334),

INFO : (20, 0.8407296012418745),

INFO : (21, 0.8367129135538954),

INFO : (22, 0.8378965751431067),

INFO : (23, 0.8344426118172116),

INFO : (24, 0.8400310468613563),

INFO : (25, 0.8429028815368197),

INFO : (26, 0.8464344620161055),

INFO : (27, 0.8411564955855244),

INFO : (28, 0.8425730086349084),

INFO : (29, 0.845347821868633),

INFO : (30, 0.8404191326283108),

INFO : (31, 0.8424371786164743),

INFO : (32, 0.8431357329969923),

INFO : (33, 0.8450567575434171),

INFO : (34, 0.8449791403900262),

INFO : (35, 0.8472106335500146),

INFO : (36, 0.8465702920345396),

INFO : (37, 0.848724168041137),

INFO : (38, 0.84400892597264),

INFO : (39, 0.8459493548074124),

INFO : (40, 0.8482584651207917),

INFO : (41, 0.8472882507034054),

INFO : (42, 0.8458523333656738),

INFO : (43, 0.8492092752498303),

INFO : (44, 0.8469389735131464),

INFO : (45, 0.8491898709614825),

INFO : (46, 0.8483166779858349),

INFO : (47, 0.8506063840108664),

INFO : (48, 0.8511885126612981),

INFO : (49, 0.8497331910352188),

INFO : (50, 0.849577956728437)],

INFO : 'class\_0\_f1': [(0, 0.0),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.014598540145985401),

INFO : (4, 0.08291873963515754),

INFO : (5, 0.0034904013961605585),

INFO : (6, 0.003669724770642202),

INFO : (7, 0.017391304347826087),

INFO : (8, 0.006968641114982578),

INFO : (9, 0.0035650623885918),

INFO : (10, 0.017123287671232876),

INFO : (11, 0.006633499170812604),

INFO : (12, 0.006932409012131715),

INFO : (13, 0.022435897435897436),

INFO : (14, 0.030726256983240222),

INFO : (15, 0.006589785831960461),

INFO : (16, 0.0),

INFO : (17, 0.017421602787456445),

INFO : (18, 0.0),

INFO : (19, 0.0),

INFO : (20, 0.013445378151260505),

INFO : (21, 0.015544041450777202),

INFO : (22, 0.016638935108153077),

INFO : (23, 0.021439509954058193),

INFO : (24, 0.04093567251461988),

INFO : (25, 0.02476780185758514),

INFO : (26, 0.0165016501650165),

INFO : (27, 0.0),

INFO : (28, 0.01775147928994083),

INFO : (29, 0.0036101083032490976),

INFO : (30, 0.034383954154727794),

INFO : (31, 0.02702702702702703),

INFO : (32, 0.013136288998357963),

INFO : (33, 0.0035971223021582736),

INFO : (34, 0.0033112582781456954),

INFO : (35, 0.0),

INFO : (36, 0.0035398230088495575),

INFO : (37, 0.0249609984399376),

INFO : (38, 0.009478672985781991),

INFO : (39, 0.0),

INFO : (40, 0.003367003367003367),

INFO : (41, 0.010238907849829351),

INFO : (42, 0.022257551669316374),

INFO : (43, 0.02329450915141431),

INFO : (44, 0.003424657534246575),

INFO : (45, 0.0),

INFO : (46, 0.03278688524590164),

INFO : (47, 0.01444043321299639),

INFO : (48, 0.00974025974025974),

INFO : (49, 0.007104795737122558),

INFO : (50, 0.009569377990430622)],

INFO : 'class\_0\_prec': [(0, 0.0),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.3076923076923077),

INFO : (4, 0.36764705882352944),

INFO : (5, 0.02631578947368421),

INFO : (6, 0.1),

INFO : (7, 0.125),

INFO : (8, 0.05128205128205128),

INFO : (9, 0.038461538461538464),

INFO : (10, 0.10204081632653061),

INFO : (11, 0.029411764705882353),

INFO : (12, 0.047619047619047616),

INFO : (13, 0.07865168539325842),

INFO : (14, 0.06077348066298342),

INFO : (15, 0.027777777777777776),

INFO : (16, 0.0),

INFO : (17, 0.1282051282051282),

INFO : (18, 0.0),

INFO : (19, 0.0),

INFO : (20, 0.06666666666666667),

INFO : (21, 0.02531645569620253),

INFO : (22, 0.07575757575757576),

INFO : (23, 0.059322033898305086),

INFO : (24, 0.09395973154362416),

INFO : (25, 0.07207207207207207),

INFO : (26, 0.07042253521126761),

INFO : (27, 0.0),

INFO : (28, 0.0425531914893617),

INFO : (29, 0.05263157894736842),

INFO : (30, 0.0736196319018405),

INFO : (31, 0.06870229007633588),

INFO : (32, 0.05405405405405406),

INFO : (33, 0.047619047619047616),

INFO : (34, 0.014492753623188406),

INFO : (35, 0.0),

INFO : (36, 0.03333333333333333),

INFO : (37, 0.07547169811320754),

INFO : (38, 0.030612244897959183),

INFO : (39, 0.0),

INFO : (40, 0.01694915254237288),

INFO : (41, 0.058823529411764705),

INFO : (42, 0.07446808510638298),

INFO : (43, 0.10606060606060606),

INFO : (44, 0.02040816326530612),

INFO : (45, 0.0),

INFO : (46, 0.08088235294117647),

INFO : (47, 0.21052631578947367),

INFO : (48, 0.037037037037037035),

INFO : (49, 0.07142857142857142),

INFO : (50, 0.03260869565217391)],

INFO : 'class\_0\_rec': [(0, 0.0),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.007476635514018692),

INFO : (4, 0.04672897196261682),

INFO : (5, 0.001869158878504673),

INFO : (6, 0.001869158878504673),

INFO : (7, 0.009345794392523364),

INFO : (8, 0.003738317757009346),

INFO : (9, 0.001869158878504673),

INFO : (10, 0.009345794392523364),

INFO : (11, 0.003738317757009346),

INFO : (12, 0.003738317757009346),

INFO : (13, 0.013084112149532711),

INFO : (14, 0.020560747663551402),

INFO : (15, 0.003738317757009346),

INFO : (16, 0.0),

INFO : (17, 0.009345794392523364),

INFO : (18, 0.0),

INFO : (19, 0.0),

INFO : (20, 0.007476635514018692),

INFO : (21, 0.011214953271028037),

INFO : (22, 0.009345794392523364),

INFO : (23, 0.013084112149532711),

INFO : (24, 0.026168224299065422),

INFO : (25, 0.014953271028037384),

INFO : (26, 0.009345794392523364),

INFO : (27, 0.0),

INFO : (28, 0.011214953271028037),

INFO : (29, 0.001869158878504673),

INFO : (30, 0.022429906542056073),

INFO : (31, 0.016822429906542057),

INFO : (32, 0.007476635514018692),

INFO : (33, 0.001869158878504673),

INFO : (34, 0.001869158878504673),

INFO : (35, 0.0),

INFO : (36, 0.001869158878504673),

INFO : (37, 0.014953271028037384),

INFO : (38, 0.005607476635514018),

INFO : (39, 0.0),

INFO : (40, 0.001869158878504673),

INFO : (41, 0.005607476635514018),

INFO : (42, 0.013084112149532711),

INFO : (43, 0.013084112149532711),

INFO : (44, 0.001869158878504673),

INFO : (45, 0.0),

INFO : (46, 0.020560747663551402),

INFO : (47, 0.007476635514018692),

INFO : (48, 0.005607476635514018),

INFO : (49, 0.003738317757009346),

INFO : (50, 0.005607476635514018)],

INFO : 'class\_1\_f1': [(0, 0.015810276679841896),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.0),

INFO : (4, 0.03875968992248062),

INFO : (5, 0.06188925081433225),

INFO : (6, 0.045060658578856154),

INFO : (7, 0.022857142857142857),

INFO : (8, 0.05787781350482315),

INFO : (9, 0.05128205128205128),

INFO : (10, 0.06620209059233449),

INFO : (11, 0.047377326565143825),

INFO : (12, 0.023809523809523808),

INFO : (13, 0.0),

INFO : (14, 0.012121212121212121),

INFO : (15, 0.06343906510851419),

INFO : (16, 0.07104795737122557),

INFO : (17, 0.0),

INFO : (18, 0.023809523809523808),

INFO : (19, 0.004158004158004158),

INFO : (20, 0.05245901639344262),

INFO : (21, 0.03155818540433925),

INFO : (22, 0.039783001808318265),

INFO : (23, 0.03262642740619902),

INFO : (24, 0.02888086642599278),

INFO : (25, 0.007561436672967864),

INFO : (26, 0.017825311942959002),

INFO : (27, 0.0076045627376425855),

INFO : (28, 0.007827788649706457),

INFO : (29, 0.008385744234800839),

INFO : (30, 0.03367003367003367),

INFO : (31, 0.05154639175257732),

INFO : (32, 0.02247191011235955),

INFO : (33, 0.027972027972027972),

INFO : (34, 0.003355704697986577),

INFO : (35, 0.0),

INFO : (36, 0.045234248788368334),

INFO : (37, 0.05273069679849341),

INFO : (38, 0.0620384047267356),

INFO : (39, 0.053231939163498096),

INFO : (40, 0.06040268456375839),

INFO : (41, 0.061389337641357025),

INFO : (42, 0.054514480408858604),

INFO : (43, 0.029574861367837338),

INFO : (44, 0.03859649122807018),

INFO : (45, 0.0594059405940594),

INFO : (46, 0.04918032786885246),

INFO : (47, 0.054474708171206226),

INFO : (48, 0.052104208416833664),

INFO : (49, 0.07622504537205081),

INFO : (50, 0.06802721088435375)],

INFO : 'class\_1\_prec': [(0, 0.008189755079966004),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.0),

INFO : (4, 0.2),

INFO : (5, 0.12837837837837837),

INFO : (6, 0.11711711711711711),

INFO : (7, 0.1016949152542373),

INFO : (8, 0.11538461538461539),

INFO : (9, 0.12605042016806722),

INFO : (10, 0.17592592592592593),

INFO : (11, 0.112),

INFO : (12, 0.05737704918032787),

INFO : (13, 0.0),

INFO : (14, 0.10344827586206896),

INFO : (15, 0.14285714285714285),

INFO : (16, 0.20618556701030927),

INFO : (17, 0.0),

INFO : (18, 0.15789473684210525),

INFO : (19, 0.06666666666666667),

INFO : (20, 0.1111111111111111),

INFO : (21, 0.1951219512195122),

INFO : (22, 0.12643678160919541),

INFO : (23, 0.06802721088435375),

INFO : (24, 0.09090909090909091),

INFO : (25, 0.031746031746031744),

INFO : (26, 0.05263157894736842),

INFO : (27, 0.03333333333333333),

INFO : (28, 0.044444444444444446),

INFO : (29, 0.18181818181818182),

INFO : (30, 0.078125),

INFO : (31, 0.12931034482758622),

INFO : (32, 0.08823529411764706),

INFO : (33, 0.07547169811320754),

INFO : (34, 0.007692307692307693),

INFO : (35, 0.0),

INFO : (36, 0.0915032679738562),

INFO : (37, 0.2153846153846154),

INFO : (38, 0.0995260663507109),

INFO : (39, 0.23333333333333334),

INFO : (40, 0.13846153846153847),

INFO : (41, 0.12418300653594772),

INFO : (42, 0.1322314049586777),

INFO : (43, 0.10666666666666667),

INFO : (44, 0.10576923076923077),

INFO : (45, 0.38461538461538464),

INFO : (46, 0.5454545454545454),

INFO : (47, 0.2916666666666667),

INFO : (48, 0.3939393939393939),

INFO : (49, 0.24705882352941178),

INFO : (50, 0.16393442622950818)],

INFO : 'class\_1\_rec': [(0, 0.22746781115879827),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.0),

INFO : (4, 0.02145922746781116),

INFO : (5, 0.0407725321888412),

INFO : (6, 0.027896995708154508),

INFO : (7, 0.012875536480686695),

INFO : (8, 0.03862660944206009),

INFO : (9, 0.032188841201716736),

INFO : (10, 0.0407725321888412),

INFO : (11, 0.030042918454935622),

INFO : (12, 0.015021459227467811),

INFO : (13, 0.0),

INFO : (14, 0.006437768240343348),

INFO : (15, 0.0407725321888412),

INFO : (16, 0.04291845493562232),

INFO : (17, 0.0),

INFO : (18, 0.012875536480686695),

INFO : (19, 0.002145922746781116),

INFO : (20, 0.034334763948497854),

INFO : (21, 0.017167381974248927),

INFO : (22, 0.023605150214592276),

INFO : (23, 0.02145922746781116),

INFO : (24, 0.017167381974248927),

INFO : (25, 0.004291845493562232),

INFO : (26, 0.01072961373390558),

INFO : (27, 0.004291845493562232),

INFO : (28, 0.004291845493562232),

INFO : (29, 0.004291845493562232),

INFO : (30, 0.02145922746781116),

INFO : (31, 0.032188841201716736),

INFO : (32, 0.012875536480686695),

INFO : (33, 0.017167381974248927),

INFO : (34, 0.002145922746781116),

INFO : (35, 0.0),

INFO : (36, 0.030042918454935622),

INFO : (37, 0.030042918454935622),

INFO : (38, 0.045064377682403435),

INFO : (39, 0.030042918454935622),

INFO : (40, 0.03862660944206009),

INFO : (41, 0.0407725321888412),

INFO : (42, 0.034334763948497854),

INFO : (43, 0.017167381974248927),

INFO : (44, 0.023605150214592276),

INFO : (45, 0.032188841201716736),

INFO : (46, 0.02575107296137339),

INFO : (47, 0.030042918454935622),

INFO : (48, 0.027896995708154508),

INFO : (49, 0.045064377682403435),

INFO : (50, 0.04291845493562232)],

INFO : 'class\_2\_f1': [(0, 0.015049595257097252),

INFO : (1, 0.0),

INFO : (2, 0.091995841995842),

INFO : (3, 0.23446658851113716),

INFO : (4, 0.2421325435024065),

INFO : (5, 0.22843639228042537),

INFO : (6, 0.28331546981064665),

INFO : (7, 0.22677925211097708),

INFO : (8, 0.25843780135004824),

INFO : (9, 0.30246913580246915),

INFO : (10, 0.21700270214092704),

INFO : (11, 0.30541528817691105),

INFO : (12, 0.24796747967479674),

INFO : (13, 0.20582439238011824),

INFO : (14, 0.2665139366170294),

INFO : (15, 0.28330522765598654),

INFO : (16, 0.277798300701884),

INFO : (17, 0.2385542168674699),

INFO : (18, 0.28645930340845593),

INFO : (19, 0.27335375191424194),

INFO : (20, 0.28514420460729184),

INFO : (21, 0.2620137299771167),

INFO : (22, 0.3042194825490537),

INFO : (23, 0.2760426407331214),

INFO : (24, 0.3278634722678044),

INFO : (25, 0.289559839941797),

INFO : (26, 0.2660443407234539),

INFO : (27, 0.2920149386448515),

INFO : (28, 0.29911816578483247),

INFO : (29, 0.260566110895696),

INFO : (30, 0.2559241706161137),

INFO : (31, 0.25654141255164276),

INFO : (32, 0.25039123630672927),

INFO : (33, 0.26631459826480575),

INFO : (34, 0.2663613814157604),

INFO : (35, 0.2845821325648415),

INFO : (36, 0.28750923872875095),

INFO : (37, 0.27670171555063644),

INFO : (38, 0.26837893169551463),

INFO : (39, 0.3032452562511084),

INFO : (40, 0.3298833579760145),

INFO : (41, 0.30356825847683294),

INFO : (42, 0.28392791467451267),

INFO : (43, 0.2824385805277525),

INFO : (44, 0.2547844577614537),

INFO : (45, 0.2664624808575804),

INFO : (46, 0.2195070570886876),

INFO : (47, 0.2776225079187628),

INFO : (48, 0.2964405879227909),

INFO : (49, 0.27417243314007855),

INFO : (50, 0.2788289896465548)],

INFO : 'class\_2\_prec': [(0, 0.012),

INFO : (1, 0.0),

INFO : (2, 0.30675909878682844),

INFO : (3, 0.32485110990795885),

INFO : (4, 0.30689816987329893),

INFO : (5, 0.3209739900387382),

INFO : (6, 0.3407821229050279),

INFO : (7, 0.3311802701115678),

INFO : (8, 0.3500522466039707),

INFO : (9, 0.3443967200312378),

INFO : (10, 0.33896103896103896),

INFO : (11, 0.3547734627831715),

INFO : (12, 0.3699211643420255),

INFO : (13, 0.3626543209876543),

INFO : (14, 0.3548551093035079),

INFO : (15, 0.3659244917715392),

INFO : (16, 0.3509099393373775),

INFO : (17, 0.347571679344646),

INFO : (18, 0.3665395614871306),

INFO : (19, 0.3655913978494624),

INFO : (20, 0.35057983942908116),

INFO : (21, 0.3482007095793208),

INFO : (22, 0.3520900321543408),

INFO : (23, 0.3554913294797688),

INFO : (24, 0.3538788522848034),

INFO : (25, 0.3574315222272115),

INFO : (26, 0.3655799037947622),

INFO : (27, 0.34906462585034015),

INFO : (28, 0.35348061692371824),

INFO : (29, 0.356120826709062),

INFO : (30, 0.36140546569994425),

INFO : (31, 0.3598233995584989),

INFO : (32, 0.3476371537208039),

INFO : (33, 0.3476120137863122),

INFO : (34, 0.35431472081218274),

INFO : (35, 0.3463393248575186),

INFO : (36, 0.3633815973843998),

INFO : (37, 0.3488372093023256),

INFO : (38, 0.3430066603235014),

INFO : (39, 0.3610641891891892),

INFO : (40, 0.3565340909090909),

INFO : (41, 0.3619813717188823),

INFO : (42, 0.3562528841716659),

INFO : (43, 0.3489208633093525),

INFO : (44, 0.34647739221871715),

INFO : (45, 0.3563748079877112),

INFO : (46, 0.3529810298102981),

INFO : (47, 0.3554389312977099),

INFO : (48, 0.3522727272727273),

INFO : (49, 0.3530828516377649),

INFO : (50, 0.33504933504933504)],

INFO : 'class\_2\_rec': [(0, 0.020177315805564047),

INFO : (1, 0.0),

INFO : (2, 0.05411189238764904),

INFO : (3, 0.18343014368694588),

INFO : (4, 0.199938856618771),

INFO : (5, 0.1773158055640477),

INFO : (6, 0.2424335065729135),

INFO : (7, 0.17242433506572913),

INFO : (8, 0.20483032711708957),

INFO : (9, 0.26964231121981047),

INFO : (10, 0.1595842250076429),

INFO : (11, 0.2681137266890859),

INFO : (12, 0.18648731274839497),

INFO : (13, 0.14368694588810763),

INFO : (14, 0.21339040048914704),

INFO : (15, 0.23112198104555182),

INFO : (16, 0.2298991134209722),

INFO : (17, 0.18159584225007644),

INFO : (18, 0.23509630082543564),

INFO : (19, 0.2182818709874656),

INFO : (20, 0.24029348822989913),

INFO : (21, 0.21002751452155305),

INFO : (22, 0.267808009782941),

INFO : (23, 0.22561907673494344),

INFO : (24, 0.3054111892387649),

INFO : (25, 0.24335065729134822),

INFO : (26, 0.20911036380311832),

INFO : (27, 0.25099357994497096),

INFO : (28, 0.2592479364108835),

INFO : (29, 0.2054417609293794),

INFO : (30, 0.19810455518190156),

INFO : (31, 0.1993274228064812),

INFO : (32, 0.19565881993274228),

INFO : (33, 0.21583613573830632),

INFO : (34, 0.21339040048914704),

INFO : (35, 0.24151635585447875),

INFO : (36, 0.23784775298073985),

INFO : (37, 0.22928767960868235),

INFO : (38, 0.22042188933048),

INFO : (39, 0.26138795475389787),

INFO : (40, 0.30693977376948944),

INFO : (41, 0.26138795475389787),

INFO : (42, 0.23601345154387038),

INFO : (43, 0.23723631916845),

INFO : (44, 0.20146744114949558),

INFO : (45, 0.21277896667685722),

INFO : (46, 0.15927850810149802),

INFO : (47, 0.2277590950779578),

INFO : (48, 0.2558850504432895),

INFO : (49, 0.2240904922042189),

INFO : (50, 0.23876490369917455)],

INFO : 'class\_3\_f1': [(0, 0.002439565313816811),

INFO : (1, 0.4540785129020423),

INFO : (2, 0.6821595291252284),

INFO : (3, 0.6690524516611474),

INFO : (4, 0.6668101129639591),

INFO : (5, 0.6621731804098494),

INFO : (6, 0.6660675167106668),

INFO : (7, 0.6857464673356544),

INFO : (8, 0.6802684563758389),

INFO : (9, 0.6734548639623364),

INFO : (10, 0.6682673942701228),

INFO : (11, 0.6715401229440107),

INFO : (12, 0.6818037135278514),

INFO : (13, 0.6813998232021216),

INFO : (14, 0.6710729235514431),

INFO : (15, 0.6775514661715721),

INFO : (16, 0.6788786237655304),

INFO : (17, 0.6854272387103388),

INFO : (18, 0.6832370554878372),

INFO : (19, 0.6933638443935927),

INFO : (20, 0.68438747636058),

INFO : (21, 0.6820518312272436),

INFO : (22, 0.6812863905969418),

INFO : (23, 0.6699199473626494),

INFO : (24, 0.6796020447424834),

INFO : (25, 0.6898114002739437),

INFO : (26, 0.6953551216030184),

INFO : (27, 0.6820178921179397),

INFO : (28, 0.684274087687057),

INFO : (29, 0.6949755899104963),

INFO : (30, 0.6882620754618243),

INFO : (31, 0.6881275230307422),

INFO : (32, 0.6876796714579055),

INFO : (33, 0.6937866828577212),

INFO : (34, 0.6940786062428704),

INFO : (35, 0.6904112357279983),

INFO : (36, 0.6895240053459443),

INFO : (37, 0.69507459636215),

INFO : (38, 0.6885840020709293),

INFO : (39, 0.6883423357281452),

INFO : (40, 0.6875490247346128),

INFO : (41, 0.6934201012292118),

INFO : (42, 0.6889786497403346),

INFO : (43, 0.6945236156351792),

INFO : (44, 0.6909053978571066),

INFO : (45, 0.6983841112611937),

INFO : (46, 0.6983603279344132),

INFO : (47, 0.6983173076923077),

INFO : (48, 0.6969156257965843),

INFO : (49, 0.698303017985977),

INFO : (50, 0.6920892494929006)],

INFO : 'class\_3\_prec': [(0, 0.09734513274336283),

INFO : (1, 0.49845616861323666),

INFO : (2, 0.6222345644728317),

INFO : (3, 0.6379749414281348),

INFO : (4, 0.6399586990191017),

INFO : (5, 0.6416982722292457),

INFO : (6, 0.6663295122499439),

INFO : (7, 0.6301872588689188),

INFO : (8, 0.6517489711934157),

INFO : (9, 0.6570177312540055),

INFO : (10, 0.65),

INFO : (11, 0.6624781468531469),

INFO : (12, 0.6461538461538462),

INFO : (13, 0.6345148169668797),

INFO : (14, 0.6585234028753648),

INFO : (15, 0.6594387755102041),

INFO : (16, 0.643871487561688),

INFO : (17, 0.6305167861184459),

INFO : (18, 0.6469289441991168),

INFO : (19, 0.6457425167102586),

INFO : (20, 0.6429770012831902),

INFO : (21, 0.6518268345102856),

INFO : (22, 0.6608952702702703),

INFO : (23, 0.6545590913961213),

INFO : (24, 0.6655900086132644),

INFO : (25, 0.6496973305547286),

INFO : (26, 0.6368135973104221),

INFO : (27, 0.645103144402163),

INFO : (28, 0.642603550295858),

INFO : (29, 0.635096198531462),

INFO : (30, 0.644453155625245),

INFO : (31, 0.638187577997504),

INFO : (32, 0.6333806146572104),

INFO : (33, 0.6313656874481997),

INFO : (34, 0.6447355746074559),

INFO : (35, 0.6275140049591331),

INFO : (36, 0.6357948620722343),

INFO : (37, 0.6376675728883472),

INFO : (38, 0.6388088376560999),

INFO : (39, 0.6457103502558048),

INFO : (40, 0.643374437267567),

INFO : (41, 0.6419623218896433),

INFO : (42, 0.6464855286473715),

INFO : (43, 0.6351112352229359),

INFO : (44, 0.6306080830552465),

INFO : (45, 0.6297365571995669),

INFO : (46, 0.6293359762140733),

INFO : (47, 0.6302088041218477),

INFO : (48, 0.638188608776844),

INFO : (49, 0.6376542637097522),

INFO : (50, 0.6309754969949145)],

INFO : 'class\_3\_rec': [(0, 0.0012352610892756878),

INFO : (1, 0.41695676586187536),

INFO : (2, 0.7548568220101067),

INFO : (3, 0.7033127456485121),

INFO : (4, 0.6960134755755194),

INFO : (5, 0.6839977540707468),

INFO : (6, 0.6658057271195957),

INFO : (7, 0.752049410443571),

INFO : (8, 0.7113980909601347),

INFO : (9, 0.6907355418304323),

INFO : (10, 0.6875912408759124),

INFO : (11, 0.6808534531162268),

INFO : (12, 0.7216170690623246),

INFO : (13, 0.7357664233576642),

INFO : (14, 0.6841100505334082),

INFO : (15, 0.6966872543514879),

INFO : (16, 0.7179112857944975),

INFO : (17, 0.7508141493542954),

INFO : (18, 0.723862998315553),

INFO : (19, 0.7485682201010668),

INFO : (20, 0.7314991577765301),

INFO : (21, 0.7152161706906233),

INFO : (22, 0.7029758562605278),

INFO : (23, 0.6860190903986525),

INFO : (24, 0.6942167321729366),

INFO : (25, 0.7352049410443571),

INFO : (26, 0.765749578888265),

INFO : (27, 0.7234138124649073),

INFO : (28, 0.7317237507018529),

INFO : (29, 0.767321729365525),

INFO : (30, 0.7384615384615385),

INFO : (31, 0.7465468837731611),

INFO : (32, 0.7521617069062324),

INFO : (33, 0.7699045480067378),

INFO : (34, 0.7516002245929253),

INFO : (35, 0.767321729365525),

INFO : (36, 0.7531723750701853),

INFO : (37, 0.7638405390230207),

INFO : (38, 0.746771476698484),

INFO : (39, 0.7370016844469399),

INFO : (40, 0.7382369455362157),

INFO : (41, 0.7538461538461538),

INFO : (42, 0.7374508702975856),

INFO : (43, 0.7661987647389107),

INFO : (44, 0.7639528354856822),

INFO : (45, 0.7838293093767547),

INFO : (46, 0.7843907916900618),

INFO : (47, 0.7829309376754632),

INFO : (48, 0.7675463222908478),

INFO : (49, 0.7717012914093206),

INFO : (50, 0.7663110612015721)],

INFO : 'class\_4\_f1': [(0, 0.008018953891015127),

INFO : (1, 0.4009972192923579),

INFO : (2, 0.6804020935449032),

INFO : (3, 0.6920538207666921),

INFO : (4, 0.7321545514079896),

INFO : (5, 0.7248111991158592),

INFO : (6, 0.7030021443888492),

INFO : (7, 0.7497337593184239),

INFO : (8, 0.743823896952802),

INFO : (9, 0.7409261576971214),

INFO : (10, 0.7436929419848827),

INFO : (11, 0.7602962962962962),

INFO : (12, 0.7756057829362655),

INFO : (13, 0.7564553990610329),

INFO : (14, 0.7635536208943411),

INFO : (15, 0.7678273663560569),

INFO : (16, 0.7651350818379018),

INFO : (17, 0.7768776877687769),

INFO : (18, 0.765408133553334),

INFO : (19, 0.7718494923352578),

INFO : (20, 0.794093851132686),

INFO : (21, 0.7688818773417472),

INFO : (22, 0.7683196145352339),

INFO : (23, 0.773354355538037),

INFO : (24, 0.7825037707390649),

INFO : (25, 0.7764041662610727),

INFO : (26, 0.7969271201859901),

INFO : (27, 0.7928885255951773),

INFO : (28, 0.777468152866242),

INFO : (29, 0.7867440929114938),

INFO : (30, 0.7695127834056922),

INFO : (31, 0.7752226245229474),

INFO : (32, 0.7828934312363565),

INFO : (33, 0.7890577507598784),

INFO : (34, 0.7904239401496259),

INFO : (35, 0.7969193352249696),

INFO : (36, 0.7919286148854188),

INFO : (37, 0.8004004004004004),

INFO : (38, 0.7914299950174389),

INFO : (39, 0.7951783223749751),

INFO : (40, 0.8006532612024089),

INFO : (41, 0.7890240225148256),

INFO : (42, 0.7912454607910492),

INFO : (43, 0.7971508828250401),

INFO : (44, 0.7726311743225063),

INFO : (45, 0.8007286711871268),

INFO : (46, 0.7867112246903872),

INFO : (47, 0.8053388090349076),

INFO : (48, 0.8003577461989466),

INFO : (49, 0.8009965122072745),

INFO : (50, 0.8047408597830454)],

INFO : 'class\_4\_prec': [(0, 0.034482758620689655),

INFO : (1, 0.37473118279569895),

INFO : (2, 0.5696994991652755),

INFO : (3, 0.586825487944891),

INFO : (4, 0.6700342465753425),

INFO : (5, 0.654851056748211),

INFO : (6, 0.620211256503232),

INFO : (7, 0.7065693430656934),

INFO : (8, 0.6966150522146201),

INFO : (9, 0.6948356807511737),

INFO : (10, 0.7096290745597602),

INFO : (11, 0.729529946929492),

INFO : (12, 0.7659360546953549),

INFO : (13, 0.7194418604651163),

INFO : (14, 0.733789693858148),

INFO : (15, 0.732136176580621),

INFO : (16, 0.7330436425467599),

INFO : (17, 0.7541747572815534),

INFO : (18, 0.722955628896223),

INFO : (19, 0.7460073119107177),

INFO : (20, 0.7791228418336972),

INFO : (21, 0.7366332892499527),

INFO : (22, 0.7484842558185019),

INFO : (23, 0.7405170786940932),

INFO : (24, 0.7635400313971743),

INFO : (25, 0.7352507374631269),

INFO : (26, 0.78152260111023),

INFO : (27, 0.7857432158768732),

INFO : (28, 0.7512983266012695),

INFO : (29, 0.7645456314458066),

INFO : (30, 0.7229876722262509),

INFO : (31, 0.7376163873370577),

INFO : (32, 0.7544463568559954),

INFO : (33, 0.775542720573591),

INFO : (34, 0.7654559505409583),

INFO : (35, 0.7834229926280135),

INFO : (36, 0.7789746658687413),

INFO : (37, 0.7776697140634118),

INFO : (38, 0.7657153875819515),

INFO : (39, 0.7691269994218539),

INFO : (40, 0.7926434923201293),

INFO : (41, 0.7696078431372549),

INFO : (42, 0.7548689138576778),

INFO : (43, 0.7761281500293026),

INFO : (44, 0.7234119129026453),

INFO : (45, 0.7861685214626392),

INFO : (46, 0.7515492957746479),

INFO : (47, 0.8018810059292578),

INFO : (48, 0.7723436900652091),

INFO : (49, 0.7749710759737756),

INFO : (50, 0.7844135500293714)],

INFO : 'class\_4\_rec': [(0, 0.004537017941843679),

INFO : (1, 0.43122293256341515),

INFO : (2, 0.8445040214477212),

INFO : (3, 0.8432666529181274),

INFO : (4, 0.806970509383378),

INFO : (5, 0.8115075273252217),

INFO : (6, 0.811301299236956),

INFO : (7, 0.7985151577644876),

INFO : (8, 0.7978964734996906),

INFO : (9, 0.7935656836461126),

INFO : (10, 0.7811919983501753),

INFO : (11, 0.7937719117343782),

INFO : (12, 0.7855227882037533),

INFO : (13, 0.7974840173231594),

INFO : (14, 0.7958341926170345),

INFO : (15, 0.8071767374716436),

INFO : (16, 0.8001649824706125),

INFO : (17, 0.800989894823675),

INFO : (18, 0.8131573520313466),

INFO : (19, 0.7995462982058157),

INFO : (20, 0.8096514745308311),

INFO : (21, 0.8040833161476593),

INFO : (22, 0.7892348937925345),

INFO : (23, 0.8092390183542999),

INFO : (24, 0.8024334914415343),

INFO : (25, 0.8224376160032997),

INFO : (26, 0.812951123943081),

INFO : (27, 0.8001649824706125),

INFO : (28, 0.8055269127655187),

INFO : (29, 0.8102701587956279),

INFO : (30, 0.8224376160032997),

INFO : (31, 0.8168694576201279),

INFO : (32, 0.8135698082078779),

INFO : (33, 0.8030521757063313),

INFO : (34, 0.8170756857083935),

INFO : (35, 0.8108888430604249),

INFO : (36, 0.805320684677253),

INFO : (37, 0.8244998968859558),

INFO : (38, 0.8189317385027841),

INFO : (39, 0.8230563002680965),

INFO : (40, 0.8088265621777686),

INFO : (41, 0.8094452464425654),

INFO : (42, 0.8313054237987214),

INFO : (43, 0.8193441946793153),

INFO : (44, 0.8290369148277995),

INFO : (45, 0.8158383171787997),

INFO : (46, 0.8253248092390184),

INFO : (47, 0.8088265621777686),

INFO : (48, 0.8304805114456589),

INFO : (49, 0.828830686739534),

INFO : (50, 0.8261497215920809)],

INFO : 'class\_5\_f1': [(0, 0.0179870387514879),

INFO : (1, 0.7600671693391723),

INFO : (2, 0.9553429027113237),

INFO : (3, 0.9648300612201816),

INFO : (4, 0.9524959407136018),

INFO : (5, 0.9420325604341391),

INFO : (6, 0.9445315724308708),

INFO : (7, 0.9527818295478224),

INFO : (8, 0.9459459459459459),

INFO : (9, 0.935265306122449),

INFO : (10, 0.9172554185127529),

INFO : (11, 0.9301892143754305),

INFO : (12, 0.9340332885687543),

INFO : (13, 0.9392908382865341),

INFO : (14, 0.936831796294785),

INFO : (15, 0.9399794871794872),

INFO : (16, 0.9497641314243152),

INFO : (17, 0.9443368629228297),

INFO : (18, 0.9505172628692509),

INFO : (19, 0.9537538538455129),

INFO : (20, 0.9447538886825927),

INFO : (21, 0.9576945631230628),

INFO : (22, 0.9438109743547524),

INFO : (23, 0.9528011321068842),

INFO : (24, 0.9602785118073907),

INFO : (25, 0.9568048078126956),

INFO : (26, 0.9631126831733199),

INFO : (27, 0.9525547445255474),

INFO : (28, 0.9657292017514315),

INFO : (29, 0.9660523763336566),

INFO : (30, 0.9532531324147692),

INFO : (31, 0.9644272106549776),

INFO : (32, 0.9590143324113654),

INFO : (33, 0.9635958082572282),

INFO : (34, 0.9620018535681186),

INFO : (35, 0.9703524621453111),

INFO : (36, 0.9673683320652633),

INFO : (37, 0.9708326267593692),

INFO : (38, 0.9719022316684378),

INFO : (39, 0.9677173360447382),

INFO : (40, 0.9703600050884111),

INFO : (41, 0.9629255139871925),

INFO : (42, 0.9619976458718682),

INFO : (43, 0.9693475219400517),

INFO : (44, 0.9725426759184368),

INFO : (45, 0.9650750801417243),

INFO : (46, 0.9687672161715473),

INFO : (47, 0.9690625529750805),

INFO : (48, 0.9727911432829466),

INFO : (49, 0.9695478836203241),

INFO : (50, 0.9723662953830456)],

INFO : 'class\_5\_prec': [(0, 0.018700155834631957),

INFO : (1, 0.620637737269452),

INFO : (2, 0.9443245934284766),

INFO : (3, 0.9592813365796323),

INFO : (4, 0.9341772151898734),

INFO : (5, 0.9129083665338645),

INFO : (6, 0.9186737315350032),

INFO : (7, 0.9353571720808445),

INFO : (8, 0.9212009014810045),

INFO : (9, 0.9002828854314003),

INFO : (10, 0.8652759996987724),

INFO : (11, 0.8893623615092585),

INFO : (12, 0.8966325494179233),

INFO : (13, 0.9077727596862373),

INFO : (14, 0.9015865535658184),

INFO : (15, 0.9091341956987541),

INFO : (16, 0.9260813428018076),

INFO : (17, 0.9170200848203569),

INFO : (18, 0.9303782025213502),

INFO : (19, 0.9360484134772653),

INFO : (20, 0.9186391719489689),

INFO : (21, 0.944793388429752),

INFO : (22, 0.9157280932981867),

INFO : (23, 0.9342148220698662),

INFO : (24, 0.9486202038617718),

INFO : (25, 0.940592434561418),

INFO : (26, 0.9550693168531819),

INFO : (27, 0.9307829469930297),

INFO : (28, 0.9575054266154617),

INFO : (29, 0.9593768322305051),

INFO : (30, 0.9347701853212507),

INFO : (31, 0.9572456492637216),

INFO : (32, 0.9465585704831238),

INFO : (33, 0.9550346208392425),

INFO : (34, 0.9543630892678034),

INFO : (35, 0.9691603829534864),

INFO : (36, 0.9628912823964995),

INFO : (37, 0.9691890976807178),

INFO : (38, 0.9728533741809208),

INFO : (39, 0.9654268808114962),

INFO : (40, 0.9689220086374799),

INFO : (41, 0.9553586356796522),

INFO : (42, 0.9523888796404195),

INFO : (43, 0.9677473969355794),

INFO : (44, 0.9749082529657762),

INFO : (45, 0.9586056644880174),

INFO : (46, 0.9667597056584624),

INFO : (47, 0.9670952461512434),

INFO : (48, 0.9754077363162839),

INFO : (49, 0.9683158251440189),

INFO : (50, 0.9734422880490297)],

INFO : 'class\_5\_rec': [(0, 0.01732631221335145),

INFO : (1, 0.9802955665024631),

INFO : (2, 0.9666213691183965),

INFO : (3, 0.9704433497536946),

INFO : (4, 0.9715474774927807),

INFO : (5, 0.9730762697469),

INFO : (6, 0.9718872091048072),

INFO : (7, 0.9708680142687277),

INFO : (8, 0.9720570749108205),

INFO : (9, 0.9730762697469),

INFO : (10, 0.9758790555461185),

INFO : (11, 0.9749447936130456),

INFO : (12, 0.9746899949040259),

INFO : (13, 0.9730762697469),

INFO : (14, 0.9749447936130456),

INFO : (15, 0.9729913368438933),

INFO : (16, 0.9746899949040259),

INFO : (17, 0.9733310684559198),

INFO : (18, 0.9715474774927807),

INFO : (19, 0.9721420078138271),

INFO : (20, 0.972396806522847),

INFO : (21, 0.9709529471717343),

INFO : (22, 0.9736708000679464),

INFO : (23, 0.9721420078138271),

INFO : (24, 0.9722269407168337),

INFO : (25, 0.9735858671649397),

INFO : (26, 0.9712926787837608),

INFO : (27, 0.9753694581280788),

INFO : (28, 0.9740954645829795),

INFO : (29, 0.9728214710378801),

INFO : (30, 0.9724817394258536),

INFO : (31, 0.971717343298794),

INFO : (32, 0.9718022762018006),

INFO : (33, 0.9723118736198403),

INFO : (34, 0.9697638865296416),

INFO : (35, 0.9715474774927807),

INFO : (36, 0.9718872091048072),

INFO : (37, 0.9724817394258536),

INFO : (38, 0.9709529471717343),

INFO : (39, 0.9700186852386614),

INFO : (40, 0.9718022762018006),

INFO : (41, 0.9706132155597078),

INFO : (42, 0.9718022762018006),

INFO : (43, 0.9709529471717343),

INFO : (44, 0.9701885510446747),

INFO : (45, 0.9716324103957873),

INFO : (46, 0.9707830813657211),

INFO : (47, 0.9710378800747409),

INFO : (48, 0.9701885510446747),

INFO : (49, 0.9707830813657211),

INFO : (50, 0.9712926787837608)],

INFO : 'class\_6\_f1': [(0, 0.34645919339472847),

INFO : (1, 0.966355771479047),

INFO : (2, 0.9908902029726706),

INFO : (3, 0.9942270686337396),

INFO : (4, 0.9905466940058051),

INFO : (5, 0.9920529094885061),

INFO : (6, 0.9945194492714877),

INFO : (7, 0.9934040110022164),

INFO : (8, 0.9939866905417324),

INFO : (9, 0.9964374681916803),

INFO : (10, 0.9960637300843487),

INFO : (11, 0.9984162349340993),

INFO : (12, 0.9927147546233288),

INFO : (13, 0.9912598593050522),

INFO : (14, 0.992688263862945),

INFO : (15, 0.9966777408637874),

INFO : (16, 0.9947055992299053),

INFO : (17, 0.9960106026935125),

INFO : (18, 0.9978808444432522),

INFO : (19, 0.9951047267474521),

INFO : (20, 0.9965173596228033),

INFO : (21, 0.9914447909170865),

INFO : (22, 0.9962771513512065),

INFO : (23, 0.9930327540642268),

INFO : (24, 0.9932710280373832),

INFO : (25, 0.9941473582939149),

INFO : (26, 0.99033623512499),

INFO : (27, 0.9871563528287868),

INFO : (28, 0.9940676607343274),

INFO : (29, 0.9916562258417082),

INFO : (30, 0.9973188910933563),

INFO : (31, 0.9911485549749387),

INFO : (32, 0.993085773779332),

INFO : (33, 0.9971319055405152),

INFO : (34, 0.995237840440901),

INFO : (35, 0.9911806240174789),

INFO : (36, 0.9966510381781648),

INFO : (37, 0.9957435416945523),

INFO : (38, 0.9925554339995197),

INFO : (39, 0.9936693645324145),

INFO : (40, 0.9963574030426399),

INFO : (41, 0.9972117962466488),

INFO : (42, 0.9932706686605426),

INFO : (43, 0.9978540772532188),

INFO : (44, 0.9975863548594722),

INFO : (45, 0.9952109586109105),

INFO : (46, 0.9933771297334829),

INFO : (47, 0.9932176234979974),

INFO : (48, 0.9980144888650389),

INFO : (49, 0.996436131729146),

INFO : (50, 0.9968109339407745)],

INFO : 'class\_6\_prec': [(0, 0.42319627618308764),

INFO : (1, 0.9349957267105726),

INFO : (2, 0.9819448843839088),

INFO : (3, 0.9885204081632653),

INFO : (4, 0.9813222181185036),

INFO : (5, 0.9842311355699016),

INFO : (6, 0.9890986439776656),

INFO : (7, 0.9868944659627527),

INFO : (8, 0.9882553010575543),

INFO : (9, 0.992900229541451),

INFO : (10, 0.9922112563350227),

INFO : (11, 0.9969978019621508),

INFO : (12, 0.9855348911142903),

INFO : (13, 0.9826711749788672),

INFO : (14, 0.9854826745787856),

INFO : (15, 0.9933774834437086),

INFO : (16, 0.989466964570699),

INFO : (17, 0.9920529094885061),

INFO : (18, 0.9957706515338081),

INFO : (19, 0.9902571474205398),

INFO : (20, 0.9931119179837676),

INFO : (21, 0.9830347233232916),

INFO : (22, 0.9926348935261782),

INFO : (23, 0.986161921425163),

INFO : (24, 0.986684350132626),

INFO : (25, 0.9883628248047186),

INFO : (26, 0.9808574592627749),

INFO : (27, 0.974638440578495),

INFO : (28, 0.988205291679949),

INFO : (29, 0.9834505366679004),

INFO : (30, 0.9947053160765857),

INFO : (31, 0.983075946689232),

INFO : (32, 0.9862665040564187),

INFO : (33, 0.9942802159619394),

INFO : (34, 0.9905208222387901),

INFO : (35, 0.9825154508478158),

INFO : (36, 0.9933244325767691),

INFO : (37, 0.9916288989602773),

INFO : (38, 0.9852730836467659),

INFO : (39, 0.9874183787227265),

INFO : (40, 0.9927412467976089),

INFO : (41, 0.9945454545454545),

INFO : (42, 0.9867359932088285),

INFO : (43, 0.9957173447537473),

INFO : (44, 0.9952375856164384),

INFO : (45, 0.9905203174095969),

INFO : (46, 0.9868937705613924),

INFO : (47, 0.9866312997347481),

INFO : (48, 0.9961435457953937),

INFO : (49, 0.9932688712003847),

INFO : (50, 0.993748330216404)],

INFO : 'class\_6\_rec': [(0, 0.2932795698924731),

INFO : (1, 0.9998924731182796),

INFO : (2, 1.0),

INFO : (3, 1.0),

INFO : (4, 0.9999462365591398),

INFO : (5, 1.0),

INFO : (6, 1.0),

INFO : (7, 1.0),

INFO : (8, 0.9997849462365591),

INFO : (9, 1.0),

INFO : (10, 0.9999462365591398),

INFO : (11, 0.9998387096774194),

INFO : (12, 1.0),

INFO : (13, 1.0),

INFO : (14, 1.0),

INFO : (15, 1.0),

INFO : (16, 1.0),

INFO : (17, 1.0),

INFO : (18, 1.0),

INFO : (19, 1.0),

INFO : (20, 0.9999462365591398),

INFO : (21, 1.0),

INFO : (22, 0.9999462365591398),

INFO : (23, 1.0),

INFO : (24, 0.9999462365591398),

INFO : (25, 1.0),

INFO : (26, 1.0),

INFO : (27, 1.0),

INFO : (28, 1.0),

INFO : (29, 1.0),

INFO : (30, 0.9999462365591398),

INFO : (31, 0.9993548387096775),

INFO : (32, 1.0),

INFO : (33, 1.0),

INFO : (34, 1.0),

INFO : (35, 1.0),

INFO : (36, 1.0),

INFO : (37, 0.9998924731182796),

INFO : (38, 0.9999462365591398),

INFO : (39, 1.0),

INFO : (40, 1.0),

INFO : (41, 0.9998924731182796),

INFO : (42, 0.9998924731182796),

INFO : (43, 1.0),

INFO : (44, 0.9999462365591398),

INFO : (45, 0.9999462365591398),

INFO : (46, 0.9999462365591398),

INFO : (47, 0.9998924731182796),

INFO : (48, 0.9998924731182796),

INFO : (49, 0.9996236559139785),

INFO : (50, 0.9998924731182796)],

INFO : 'class\_7\_f1': [(0, 0.027800490596892886),

INFO : (1, 0.009943181818181818),

INFO : (2, 0.7054621848739496),

INFO : (3, 0.7325651910248635),

INFO : (4, 0.7416967166445245),

INFO : (5, 0.7399691358024691),

INFO : (6, 0.6988090664617749),

INFO : (7, 0.7312275392472102),

INFO : (8, 0.7152221412964311),

INFO : (9, 0.7192292567833268),

INFO : (10, 0.7016242937853108),

INFO : (11, 0.7299908842297174),

INFO : (12, 0.711768851303735),

INFO : (13, 0.7365880824206423),

INFO : (14, 0.7116669522014734),

INFO : (15, 0.7341772151898734),

INFO : (16, 0.7458432304038005),

INFO : (17, 0.7441002949852508),

INFO : (18, 0.7237725185446838),

INFO : (19, 0.74697912852435),

INFO : (20, 0.7465420560747663),

INFO : (21, 0.7205984690327071),

INFO : (22, 0.746284691136974),

INFO : (23, 0.7149035262807718),

INFO : (24, 0.7337526205450734),

INFO : (25, 0.7556655875071415),

INFO : (26, 0.7642752562225475),

INFO : (27, 0.7680088659032139),

INFO : (28, 0.748389471746733),

INFO : (29, 0.7695223654283548),

INFO : (30, 0.752704498007212),

INFO : (31, 0.7655841731989549),

INFO : (32, 0.7747344885410844),

INFO : (33, 0.7584641573671269),

INFO : (34, 0.7707918101105272),

INFO : (35, 0.7799580872547152),

INFO : (36, 0.7630348795397339),

INFO : (37, 0.7593406593406593),

INFO : (38, 0.7624126517101876),

INFO : (39, 0.7594526467410875),

INFO : (40, 0.765650369835829),

INFO : (41, 0.7684928979893009),

INFO : (42, 0.773446119897021),

INFO : (43, 0.7819436672262637),

INFO : (44, 0.7808244730460735),

INFO : (45, 0.7636979853135003),

INFO : (46, 0.7750826901874311),

INFO : (47, 0.7879924953095685),

INFO : (48, 0.785190753617741),

INFO : (49, 0.7711470533556423),

INFO : (50, 0.7844175491679274)],

INFO : 'class\_7\_prec': [(0, 0.05855338691159587),

INFO : (1, 0.7777777777777778),

INFO : (2, 0.8557594291539246),

INFO : (3, 0.8431828757561657),

INFO : (4, 0.7907729664103602),

INFO : (5, 0.8038558256496228),

INFO : (6, 0.7553986710963455),

INFO : (7, 0.7766171153073523),

INFO : (8, 0.7290274684484038),

INFO : (9, 0.7993881118881119),

INFO : (10, 0.6933007676203768),

INFO : (11, 0.7450688500186081),

INFO : (12, 0.7018763029881863),

INFO : (13, 0.7663190421011974),

INFO : (14, 0.6834485027969727),

INFO : (15, 0.7224913494809688),

INFO : (16, 0.7629906542056075),

INFO : (17, 0.7684691546077684),

INFO : (18, 0.7154329608938548),

INFO : (19, 0.7657657657657657),

INFO : (20, 0.7825235109717869),

INFO : (21, 0.7020338983050848),

INFO : (22, 0.7477574452816649),

INFO : (23, 0.6686372121966397),

INFO : (24, 0.7177033492822966),

INFO : (25, 0.8088055442315532),

INFO : (26, 0.7831957989497375),

INFO : (27, 0.7947247706422018),

INFO : (28, 0.7715370018975332),

INFO : (29, 0.8192090395480226),

INFO : (30, 0.8025091056252529),

INFO : (31, 0.801171875),

INFO : (32, 0.8092643051771117),

INFO : (33, 0.8055443953394937),

INFO : (34, 0.7816979051819184),

INFO : (35, 0.8351693186454509),

INFO : (36, 0.7677279305354558),

INFO : (37, 0.7787377911344854),

INFO : (38, 0.7852272727272728),

INFO : (39, 0.7652394775036284),

INFO : (40, 0.7730418943533698),

INFO : (41, 0.7941288600838734),

INFO : (42, 0.7965909090909091),

INFO : (43, 0.8177916504096762),

INFO : (44, 0.8166211470932501),

INFO : (45, 0.8070035813768405),

INFO : (46, 0.7976550680786687),

INFO : (47, 0.8293838862559242),

INFO : (48, 0.8279825604439159),

INFO : (49, 0.8035645098798915),

INFO : (50, 0.8329317269076305)],

INFO : 'class\_7\_rec': [(0, 0.018227305218012867),

INFO : (1, 0.005003573981415297),

INFO : (2, 0.600071479628306),

INFO : (3, 0.6476054324517513),

INFO : (4, 0.6983559685489635),

INFO : (5, 0.6854896354538956),

INFO : (6, 0.6501072194424589),

INFO : (7, 0.6908506075768406),

INFO : (8, 0.7019299499642602),

INFO : (9, 0.6536812008577555),

INFO : (10, 0.7101501072194425),

INFO : (11, 0.7155110793423874),

INFO : (12, 0.7219442458899213),

INFO : (13, 0.7090779127948534),

INFO : (14, 0.7423159399571122),

INFO : (15, 0.7462473195139385),

INFO : (16, 0.7294496068620443),

INFO : (17, 0.7212294496068621),

INFO : (18, 0.7323087919942817),

INFO : (19, 0.7290922087205146),

INFO : (20, 0.7137240886347391),

INFO : (21, 0.7401715511079342),

INFO : (22, 0.7448177269478199),

INFO : (23, 0.768048606147248),

INFO : (24, 0.7505360972122945),

INFO : (25, 0.7090779127948534),

INFO : (26, 0.7462473195139385),

INFO : (27, 0.7430307362401716),

INFO : (28, 0.726590421729807),

INFO : (29, 0.725518227305218),

INFO : (30, 0.7087205146533238),

INFO : (31, 0.7330235882773409),

INFO : (32, 0.7430307362401716),

INFO : (33, 0.7165832737669764),

INFO : (34, 0.7601858470335954),

INFO : (35, 0.7315939957112223),

INFO : (36, 0.7583988563259471),

INFO : (37, 0.7408863473909936),

INFO : (38, 0.7408863473909936),

INFO : (39, 0.7537526804860615),

INFO : (40, 0.7583988563259471),

INFO : (41, 0.7444603288062902),

INFO : (42, 0.7516082916368835),

INFO : (43, 0.7491065046461758),

INFO : (44, 0.7480343102215868),

INFO : (45, 0.7248034310221587),

INFO : (46, 0.7537526804860615),

INFO : (47, 0.7505360972122945),

INFO : (48, 0.7466047176554682),

INFO : (49, 0.7412437455325233),

INFO : (50, 0.7412437455325233)],

INFO : 'class\_8\_f1': [(0, 0.0),

INFO : (1, 0.0),

INFO : (2, 0.02572347266881029),

INFO : (3, 0.051118210862619806),

INFO : (4, 0.18829516539440203),

INFO : (5, 0.18259023354564755),

INFO : (6, 0.2156448202959831),

INFO : (7, 0.06340057636887608),

INFO : (8, 0.16359918200409),

INFO : (9, 0.20089285714285715),

INFO : (10, 0.1976470588235294),

INFO : (11, 0.1724137931034483),

INFO : (12, 0.1837160751565762),

INFO : (13, 0.19047619047619047),

INFO : (14, 0.16),

INFO : (15, 0.21851851851851853),

INFO : (16, 0.22764227642276422),

INFO : (17, 0.23325062034739455),

INFO : (18, 0.1891891891891892),

INFO : (19, 0.15202702702702703),

INFO : (20, 0.15286624203821655),

INFO : (21, 0.21967963386727687),

INFO : (22, 0.2222222222222222),

INFO : (23, 0.0851063829787234),

INFO : (24, 0.20238095238095238),

INFO : (25, 0.22466960352422907),

INFO : (26, 0.2048780487804878),

INFO : (27, 0.19294117647058823),

INFO : (28, 0.2048780487804878),

INFO : (29, 0.16206261510128914),

INFO : (30, 0.20270270270270271),

INFO : (31, 0.19569471624266144),

INFO : (32, 0.164079822616408),

INFO : (33, 0.14780600461893764),

INFO : (34, 0.17898832684824903),

INFO : (35, 0.11661807580174927),

INFO : (36, 0.24217118997912318),

INFO : (37, 0.2119815668202765),

INFO : (38, 0.15072463768115943),

INFO : (39, 0.15867158671586715),

INFO : (40, 0.17534246575342466),

INFO : (41, 0.20347394540942929),

INFO : (42, 0.25943396226415094),

INFO : (43, 0.19797979797979798),

INFO : (44, 0.17471264367816092),

INFO : (45, 0.23058823529411765),

INFO : (46, 0.22897196261682243),

INFO : (47, 0.21476510067114093),

INFO : (48, 0.21025641025641026),

INFO : (49, 0.1910569105691057),

INFO : (50, 0.20654911838790932)],

INFO : 'class\_8\_prec': [(0, 0.0),

INFO : (1, 0.0),

INFO : (2, 0.4444444444444444),

INFO : (3, 0.7272727272727273),

INFO : (4, 0.4065934065934066),

INFO : (5, 0.25443786982248523),

INFO : (6, 0.2982456140350877),

INFO : (7, 0.24444444444444444),

INFO : (8, 0.21390374331550802),

INFO : (9, 0.3082191780821918),

INFO : (10, 0.34146341463414637),

INFO : (11, 0.33653846153846156),

INFO : (12, 0.24858757062146894),

INFO : (13, 0.2242152466367713),

INFO : (14, 0.21965317919075145),

INFO : (15, 0.24789915966386555),

INFO : (16, 0.29473684210526313),

INFO : (17, 0.46534653465346537),

INFO : (18, 0.5147058823529411),

INFO : (19, 0.15517241379310345),

INFO : (20, 0.21301775147928995),

INFO : (21, 0.35555555555555557),

INFO : (22, 0.2849740932642487),

INFO : (23, 0.11904761904761904),

INFO : (24, 0.2524752475247525),

INFO : (25, 0.3355263157894737),

INFO : (26, 0.3888888888888889),

INFO : (27, 0.3333333333333333),

INFO : (28, 0.3888888888888889),

INFO : (29, 0.1825726141078838),

INFO : (30, 0.31690140845070425),

INFO : (31, 0.23923444976076555),

INFO : (32, 0.2483221476510067),

INFO : (33, 0.24427480916030533),

INFO : (34, 0.2169811320754717),

INFO : (35, 0.4878048780487805),

INFO : (36, 0.327683615819209),

INFO : (37, 0.3484848484848485),

INFO : (38, 0.6046511627906976),

INFO : (39, 0.17916666666666667),

INFO : (40, 0.5079365079365079),

INFO : (41, 0.40594059405940597),

INFO : (42, 0.45081967213114754),

INFO : (43, 0.2538860103626943),

INFO : (44, 0.2857142857142857),

INFO : (45, 0.3983739837398374),

INFO : (46, 0.3888888888888889),

INFO : (47, 0.3310344827586207),

INFO : (48, 0.4659090909090909),

INFO : (49, 0.24736842105263157),

INFO : (50, 0.43157894736842106)],

INFO : 'class\_8\_rec': [(0, 0.0),

INFO : (1, 0.0),

INFO : (2, 0.013245033112582781),

INFO : (3, 0.026490066225165563),

INFO : (4, 0.12251655629139073),

INFO : (5, 0.1423841059602649),

INFO : (6, 0.16887417218543047),

INFO : (7, 0.03642384105960265),

INFO : (8, 0.13245033112582782),

INFO : (9, 0.1490066225165563),

INFO : (10, 0.1390728476821192),

INFO : (11, 0.11589403973509933),

INFO : (12, 0.1456953642384106),

INFO : (13, 0.16556291390728478),

INFO : (14, 0.12582781456953643),

INFO : (15, 0.19536423841059603),

INFO : (16, 0.18543046357615894),

INFO : (17, 0.15562913907284767),

INFO : (18, 0.11589403973509933),

INFO : (19, 0.1490066225165563),

INFO : (20, 0.11920529801324503),

INFO : (21, 0.15894039735099338),

INFO : (22, 0.18211920529801323),

INFO : (23, 0.06622516556291391),

INFO : (24, 0.16887417218543047),

INFO : (25, 0.16887417218543047),

INFO : (26, 0.1390728476821192),

INFO : (27, 0.1357615894039735),

INFO : (28, 0.1390728476821192),

INFO : (29, 0.1456953642384106),

INFO : (30, 0.1490066225165563),

INFO : (31, 0.16556291390728478),

INFO : (32, 0.12251655629139073),

INFO : (33, 0.10596026490066225),

INFO : (34, 0.152317880794702),

INFO : (35, 0.06622516556291391),

INFO : (36, 0.19205298013245034),

INFO : (37, 0.152317880794702),

INFO : (38, 0.08609271523178808),

INFO : (39, 0.1423841059602649),

INFO : (40, 0.10596026490066225),

INFO : (41, 0.1357615894039735),

INFO : (42, 0.18211920529801323),

INFO : (43, 0.16225165562913907),

INFO : (44, 0.12582781456953643),

INFO : (45, 0.16225165562913907),

INFO : (46, 0.16225165562913907),

INFO : (47, 0.15894039735099338),

INFO : (48, 0.1357615894039735),

INFO : (49, 0.15562913907284767),

INFO : (50, 0.1357615894039735)],

INFO : 'class\_9\_f1': [(0, 0.002136752136752137),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.0),

INFO : (4, 0.0),

INFO : (5, 0.0),

INFO : (6, 0.0),

INFO : (7, 0.0),

INFO : (8, 0.0),

INFO : (9, 0.0),

INFO : (10, 0.0),

INFO : (11, 0.0),

INFO : (12, 0.0),

INFO : (13, 0.0),

INFO : (14, 0.0),

INFO : (15, 0.0),

INFO : (16, 0.0),

INFO : (17, 0.0),

INFO : (18, 0.0),

INFO : (19, 0.0),

INFO : (20, 0.0),

INFO : (21, 0.0),

INFO : (22, 0.0),

INFO : (23, 0.0),

INFO : (24, 0.0),

INFO : (25, 0.0),

INFO : (26, 0.0),

INFO : (27, 0.0),

INFO : (28, 0.0),

INFO : (29, 0.0),

INFO : (30, 0.0),

INFO : (31, 0.0),

INFO : (32, 0.0),

INFO : (33, 0.0),

INFO : (34, 0.0),

INFO : (35, 0.0),

INFO : (36, 0.0),

INFO : (37, 0.0),

INFO : (38, 0.0),

INFO : (39, 0.0),

INFO : (40, 0.0),

INFO : (41, 0.0),

INFO : (42, 0.0),

INFO : (43, 0.0),

INFO : (44, 0.0),

INFO : (45, 0.0),

INFO : (46, 0.0),

INFO : (47, 0.0),

INFO : (48, 0.0),

INFO : (49, 0.0),

INFO : (50, 0.0)],

INFO : 'class\_9\_prec': [(0, 0.0010733932644572655),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.0),

INFO : (4, 0.0),

INFO : (5, 0.0),

INFO : (6, 0.0),

INFO : (7, 0.0),

INFO : (8, 0.0),

INFO : (9, 0.0),

INFO : (10, 0.0),

INFO : (11, 0.0),

INFO : (12, 0.0),

INFO : (13, 0.0),

INFO : (14, 0.0),

INFO : (15, 0.0),

INFO : (16, 0.0),

INFO : (17, 0.0),

INFO : (18, 0.0),

INFO : (19, 0.0),

INFO : (20, 0.0),

INFO : (21, 0.0),

INFO : (22, 0.0),

INFO : (23, 0.0),

INFO : (24, 0.0),

INFO : (25, 0.0),

INFO : (26, 0.0),

INFO : (27, 0.0),

INFO : (28, 0.0),

INFO : (29, 0.0),

INFO : (30, 0.0),

INFO : (31, 0.0),

INFO : (32, 0.0),

INFO : (33, 0.0),

INFO : (34, 0.0),

INFO : (35, 0.0),

INFO : (36, 0.0),

INFO : (37, 0.0),

INFO : (38, 0.0),

INFO : (39, 0.0),

INFO : (40, 0.0),

INFO : (41, 0.0),

INFO : (42, 0.0),

INFO : (43, 0.0),

INFO : (44, 0.0),

INFO : (45, 0.0),

INFO : (46, 0.0),

INFO : (47, 0.0),

INFO : (48, 0.0),

INFO : (49, 0.0),

INFO : (50, 0.0)],

INFO : 'class\_9\_rec': [(0, 0.22857142857142856),

INFO : (1, 0.0),

INFO : (2, 0.0),

INFO : (3, 0.0),

INFO : (4, 0.0),

INFO : (5, 0.0),

INFO : (6, 0.0),

INFO : (7, 0.0),

INFO : (8, 0.0),

INFO : (9, 0.0),

INFO : (10, 0.0),

INFO : (11, 0.0),

INFO : (12, 0.0),

INFO : (13, 0.0),

INFO : (14, 0.0),

INFO : (15, 0.0),

INFO : (16, 0.0),

INFO : (17, 0.0),

INFO : (18, 0.0),

INFO : (19, 0.0),

INFO : (20, 0.0),

INFO : (21, 0.0),

INFO : (22, 0.0),

INFO : (23, 0.0),

INFO : (24, 0.0),

INFO : (25, 0.0),

INFO : (26, 0.0),

INFO : (27, 0.0),

INFO : (28, 0.0),

INFO : (29, 0.0),

INFO : (30, 0.0),

INFO : (31, 0.0),

INFO : (32, 0.0),

INFO : (33, 0.0),

INFO : (34, 0.0),

INFO : (35, 0.0),

INFO : (36, 0.0),

INFO : (37, 0.0),

INFO : (38, 0.0),

INFO : (39, 0.0),

INFO : (40, 0.0),

INFO : (41, 0.0),

INFO : (42, 0.0),

INFO : (43, 0.0),

INFO : (44, 0.0),

INFO : (45, 0.0),

INFO : (46, 0.0),

INFO : (47, 0.0),

INFO : (48, 0.0),

INFO : (49, 0.0),

INFO : (50, 0.0)],

INFO : 'f1\_score': [(0, 0.04357018660216325),

INFO : (1, 0.2591441854830801),

INFO : (2, 0.41319762278927274),

INFO : (3, 0.4352911932826367),

INFO : (4, 0.46358101541903274),

INFO : (5, 0.45374452632873885),

INFO : (6, 0.45546204227197773),

INFO : (7, 0.4443321882136149),

INFO : (8, 0.4566130569086694),

INFO : (9, 0.4623522159372883),

INFO : (10, 0.45248789178654414),

INFO : (11, 0.462227265979587),

INFO : (12, 0.4558351878612964),

INFO : (13, 0.452373048256759),

INFO : (14, 0.4545174962526469),

INFO : (15, 0.46880658728757574),

INFO : (16, 0.4710815201157327),

INFO : (17, 0.4635979127083029),

INFO : (18, 0.46202738313055275),

INFO : (19, 0.4590589828945439),

INFO : (20, 0.46702094730636395),

INFO : (21, 0.4649467122341357),

INFO : (22, 0.4718842463662856),

INFO : (23, 0.4519226676424671),

INFO : (24, 0.47494689394607653),

INFO : (25, 0.4719392002145348),

INFO : (26, 0.4715255767921783),

INFO : (27, 0.46751870588237476),

INFO : (28, 0.46995040572907587),

INFO : (29, 0.46435752289607446),

INFO : (30, 0.4687732241526431),

INFO : (31, 0.47153196339564685),

INFO : (32, 0.46474869554598985),

INFO : (33, 0.46477260579403995),

INFO : (34, 0.46645507217521853),

INFO : (35, 0.46300219527370634),

INFO : (36, 0.4786961370519617),

INFO : (37, 0.4787766802166476),

INFO : (38, 0.46975049615557046),

INFO : (39, 0.4719508787551834),

INFO : (40, 0.47895655755641026),

INFO : (41, 0.47897447813446287),

INFO : (42, 0.48290724539776536),

INFO : (43, 0.47741075139065553),

INFO : (44, 0.4686008326205527),

INFO : (45, 0.4779553463260213),

INFO : (46, 0.47527448215375256),

INFO : (47, 0.4815231538483967),

INFO : (48, 0.48218112240975514),

INFO : (49, 0.4784989783716722),

INFO : (50, 0.4813399584676942)],

INFO : 'precision': [(0, 0.06535408586377912),

INFO : (1, 0.3206598593166738),

INFO : (2, 0.472516651383569),

INFO : (3, 0.5375601194745083),

INFO : (4, 0.5297403980603417),

INFO : (5, 0.47276506844441324),

INFO : (6, 0.48058566694194227),

INFO : (7, 0.4837944985095811),

INFO : (8, 0.47174703509811433),

INFO : (9, 0.4861552495609178),

INFO : (10, 0.48688082940615746),

INFO : (11, 0.4856160796300172),

INFO : (12, 0.471963847613247),

INFO : (13, 0.46762409072159816),

INFO : (14, 0.4701560872694401),

INFO : (15, 0.4801036552784582),

INFO : (16, 0.49072864401395117),

INFO : (17, 0.5003357034519871),

INFO : (18, 0.505060656872653),

INFO : (19, 0.4671251633593779),

INFO : (20, 0.485774981270756),

INFO : (21, 0.4942516805868958),

INFO : (22, 0.49047584409801626),

INFO : (23, 0.45859783190919295),

INFO : (24, 0.4873360865549404),

INFO : (25, 0.49194848134503344),

INFO : (26, 0.5014981680328634),

INFO : (27, 0.48467238110097693),

INFO : (28, 0.4940516738836485),

INFO : (29, 0.49348214400061935),

INFO : (30, 0.49294769409270744),

INFO : (31, 0.49143679205107016),

INFO : (32, 0.4868165000773372),

INFO : (33, 0.48767452088413393),

INFO : (34, 0.47302542560400773),

INFO : (35, 0.5031926352940198),

INFO : (36, 0.49546149879604984),

INFO : (37, 0.5143071446012237),

INFO : (38, 0.522567409015588),

INFO : (39, 0.49064862759046984),

INFO : (40, 0.5190604369225665),

INFO : (41, 0.5106531617061879),

INFO : (42, 0.5150842270813081),

INFO : (43, 0.500802992375056),

INFO : (44, 0.48991560536008966),

INFO : (45, 0.5311398818279593),

INFO : (46, 0.5500400633382154),

INFO : (47, 0.5403866638705492),

INFO : (48, 0.5459224390555895),

INFO : (49, 0.5096713213556202),

INFO : (50, 0.5178682796496787)],

INFO : 'recall': [(0, 0.08108220218907478),

INFO : (1, 0.2833371312027448),

INFO : (2, 0.42334106177047615),

INFO : (3, 0.4382025026198216),

INFO : (4, 0.4563477279900371),

INFO : (5, 0.4516412789188423),

INFO : (6, 0.4540175288248821),

INFO : (7, 0.44433526970521686),

INFO : (8, 0.45627121210134514),

INFO : (9, 0.4563765629897788),

INFO : (10, 0.45035340378219146),

INFO : (11, 0.45827089501195883),

INFO : (12, 0.45547165520313077),

INFO : (13, 0.4537738595167502),

INFO : (14, 0.45634217076831785),

INFO : (15, 0.46940997175829613),

INFO : (16, 0.46804639019639344),

INFO : (17, 0.45929353379562),

INFO : (18, 0.4604742496875184),

INFO : (19, 0.46187831510920274),

INFO : (20, 0.4628527949729748),

INFO : (21, 0.4627774232235774),

INFO : (22, 0.46935236733160385),

INFO : (23, 0.4561836304629229),

INFO : (24, 0.4736980465800248),

INFO : (25, 0.4671776283005828),

INFO : (26, 0.46644993207407115),

INFO : (27, 0.4633026004146276),

INFO : (28, 0.46517641326377507),

INFO : (29, 0.4633229716044108),

INFO : (30, 0.463304795681148),

INFO : (31, 0.4681413719501125),

INFO : (32, 0.4619092075774921),

INFO : (33, 0.46026848125916076),

INFO : (34, 0.4668349006773691),

INFO : (35, 0.4589093567047346),

INFO : (36, 0.4750591935624823),

INFO : (37, 0.4728202745730461),

INFO : (38, 0.46346752052033213),

INFO : (39, 0.4717644329608858),

INFO : (40, 0.47306604472324476),

INFO : (41, 0.4721786970755223),

INFO : (42, 0.47576108679931844),

INFO : (43, 0.4735341880157507),

INFO : (44, 0.4663928412951012),

INFO : (45, 0.4703269168040354),

INFO : (46, 0.4702039583695565),

INFO : (47, 0.47374429966564524),

INFO : (48, 0.4739863687745861),

INFO : (49, 0.4740704787677557),

INFO : (50, 0.47279421049025006)]}

INFO :