

BEGINNING CROSS-VALIDATION FOR TAG: maven USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: maven
Accuracy is: 91.970190964136%
Precision is: 92.38851339810888%
Recall is: 90.68134171907758%
Fmeasure is: 91.40940364482302%
Mean absolute error is: 0.0912397890135365
Root mean squared error is: 0.250589484555392
Relative absolute error is: 18.30146375850034%
Root relative squared error is: 50.19340728824536%
Kappa statistics is: 0.838793563423941
BEGINNING CROSS-VALIDATION FOR TAG: jsp USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jsp
Accuracy is: 92.76587486415153%
Precision is: 94.63858222980527%
Recall is: 89.937106918239%
Fmeasure is: 92.16373897920298%
Mean absolute error is: 0.08641606244525596
Root mean squared error is: 0.23865674461005515
Relative absolute error is: 17.333700691149158%
Root relative squared error is: 47.803022153214634%
Kappa statistics is: 0.8545765470429302
BEGINNING CROSS-VALIDATION FOR TAG: intellij-idea USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: intellij-idea
Accuracy is: 93.55845365626455%
Precision is: 93.69079530039575%
Recall is: 92.70440251572327%
Fmeasure is: 93.12555526650549%
Mean absolute error is: 0.08136313651144954
Root mean squared error is: 0.23516372551953246
Relative absolute error is: 16.324480788855343%
Root relative squared error is: 47.10738578340211%
Kappa statistics is: 0.8706698901030043
BEGINNING CROSS-VALIDATION FOR TAG: java-8 USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: java-8
Accuracy is: 84.6630957925788%
Precision is: 87.45603016400358%
Recall is: 78.93780573025856%
Fmeasure is: 82.9229992515258%
Mean absolute error is: 0.19658790959914907
Root mean squared error is: 0.3399139883751409
Relative absolute error is: 39.43401757420715%
Root relative squared error is: 68.08540661740186%
Kappa statistics is: 0.6907615596445619
BEGINNING CROSS-VALIDATION FOR TAG: android USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: android
Accuracy is: 91.09532681260676%
Precision is: 95.96910594024843%
Recall is: 84.895178197065%
Fmeasure is: 89.95681516900667%
Mean absolute error is: 0.12622478016775007
Root mean squared error is: 0.2685149456367605

Relative absolute error is: 25.319956613226992%
Root relative squared error is: 53.784106692404144%
Kappa statistics is: 0.8202427126032028
BEGINNING CROSS-VALIDATION FOR TAG: android-studio USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: android-studio
Accuracy is: 84.22217047042385%
Precision is: 87.7378436920904%
Recall is: 77.62753319357094%
Fmeasure is: 82.30480350719372%
Mean absolute error is: 0.16514891021115238
Root mean squared error is: 0.3465244158921296
Relative absolute error is: 33.128979531136636%
Root relative squared error is: 69.41043678159795%
Kappa statistics is: 0.6816660605669456
BEGINNING CROSS-VALIDATION FOR TAG: xml USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: xml
Accuracy is: 86.94379754696476%
Precision is: 87.96999978674856%
Recall is: 84.33263452131376%
Fmeasure is: 85.98247318324982%
Mean absolute error is: 0.1951649890875265
Root mean squared error is: 0.3231993791301966
Relative absolute error is: 39.14637617341031%
Root relative squared error is: 64.73596209071746%
Kappa statistics is: 0.7376552934593831
BEGINNING CROSS-VALIDATION FOR TAG: tomcat USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: tomcat
Accuracy is: 92.76587486415153%
Precision is: 92.49136083972965%
Recall is: 92.33053808525509%
Fmeasure is: 92.34314855425355%
Mean absolute error is: 0.08321546484941014
Root mean squared error is: 0.25020150832460447
Relative absolute error is: 16.694069235599127%
Root relative squared error is: 50.1173475706079%
Kappa statistics is: 0.8548645455400001
BEGINNING CROSS-VALIDATION FOR TAG: apache USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: apache
Accuracy is: 87.74103400093152%
Precision is: 90.10675660892281%
Recall is: 83.19706498951781%
Fmeasure is: 86.40491064869195%
Mean absolute error is: 0.15198459833517886
Root mean squared error is: 0.30920591952140336
Relative absolute error is: 30.488021849627927%
Root relative squared error is: 61.935479227276495%
Kappa statistics is: 0.7529032988408526
BEGINNING CROSS-VALIDATION FOR TAG: glassfish USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: glassfish
Accuracy is: 92.85359416239713%
Precision is: 94.54529557494517%
Recall is: 90.11530398322851%

Fmeasure is: 92.2354808038312%
Mean absolute error is: 0.07329045537778864
Root mean squared error is: 0.24028294059944094
Relative absolute error is: 14.701174120905657%
Root relative squared error is: 48.128916917545084%
Kappa statistics is: 0.8562715799205485
BEGINNING CROSS-VALIDATION FOR TAG: hibernate USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: hibernate
Accuracy is: 93.48160223567768%
Precision is: 94.6369537171424%
Recall is: 91.41858839972049%
Fmeasure is: 92.98420513386705%
Mean absolute error is: 0.0852243024834106
Root mean squared error is: 0.23300926927130133
Relative absolute error is: 17.09665549675837%
Root relative squared error is: 46.673564608917715%
Kappa statistics is: 0.8690007000742208
BEGINNING CROSS-VALIDATION FOR TAG: jpa USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jpa
Accuracy is: 93.47772085079956%
Precision is: 94.81585992887722%
Recall is: 91.25087351502448%
Fmeasure is: 92.97030018815788%
Mean absolute error is: 0.07345206879159956
Root mean squared error is: 0.22589184257625305
Relative absolute error is: 14.732302129903484%
Root relative squared error is: 45.245275175986144%
Kappa statistics is: 0.86892420568217
BEGINNING CROSS-VALIDATION FOR TAG: arrays USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: arrays
Accuracy is: 88.1827356000621%
Precision is: 87.66354032302308%
Recall is: 87.50524109014675%
Fmeasure is: 87.52133594851674%
Mean absolute error is: 0.14080536673650454
Root mean squared error is: 0.3050512239461419
Relative absolute error is: 28.24663252168758%
Root relative squared error is: 61.104194180166985%
Kappa statistics is: 0.7630153133343505
BEGINNING CROSS-VALIDATION FOR TAG: algorithm USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: algorithm
Accuracy is: 88.97609066915076%
Precision is: 90.25090272874482%
Recall is: 85.99231306778475%
Fmeasure is: 88.03913227275264%
Mean absolute error is: 0.11368727374900707
Root mean squared error is: 0.2961560070090938
Relative absolute error is: 22.806150831142908%
Root relative squared error is: 59.32209259451548%
Kappa statistics is: 0.7782562588687637
BEGINNING CROSS-VALIDATION FOR TAG: jdbc USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jdbc

Accuracy is: 92.05868653935724%
Precision is: 93.24655579104537%
Recall is: 89.73445143256463%
Fmeasure is: 91.40477362189355%
Mean absolute error is: 0.09517326471050752
Root mean squared error is: 0.25248812167674134
Relative absolute error is: 19.091837427144117%
Root relative squared error is: 50.574577229963516%
Kappa statistics is: 0.8403289092870002
BEGINNING CROSS-VALIDATION FOR TAG: c++ USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: c++
Accuracy is: 91.7986337525229%
Precision is: 94.28567382743594%
Recall is: 88.06079664570231%
Fmeasure is: 90.97267412427364%
Mean absolute error is: 0.10356065874333649
Root mean squared error is: 0.26403866823735866
Relative absolute error is: 20.772614928828563%
Root relative squared error is: 52.88614414535239%
Kappa statistics is: 0.8348191782382799
BEGINNING CROSS-VALIDATION FOR TAG: ant USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: ant
Accuracy is: 94.53733892252757%
Precision is: 94.09270907289775%
Recall is: 94.41649196366178%
Fmeasure is: 94.22481305024228%
Mean absolute error is: 0.0606702794189253
Root mean squared error is: 0.21050350023104064
Relative absolute error is: 12.169984353848273%
Root relative squared error is: 42.164327950954295%
Kappa statistics is: 0.890434938872834
BEGINNING CROSS-VALIDATION FOR TAG: cassandra USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: cassandra
Accuracy is: 97.6183822387828%
Precision is: 98.14064447083315%
Recall is: 96.83088749126486%
Fmeasure is: 97.46394576709685%
Mean absolute error is: 0.032102364932622515
Root mean squared error is: 0.14595260178102012
Relative absolute error is: 6.4398980585824805%
Root relative squared error is: 29.235056795593437%
Kappa statistics is: 0.9521952007279483
BEGINNING CROSS-VALIDATION FOR TAG: json USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: json
Accuracy is: 93.29529576152771%
Precision is: 93.19337187185776%
Recall is: 92.72536687631029%
Fmeasure is: 92.92788358097457%
Mean absolute error is: 0.09739999917960371
Root mean squared error is: 0.23359860683420583
Relative absolute error is: 19.539273405600586%
Root relative squared error is: 46.791181553287295%
Kappa statistics is: 0.8655666172017902

BEGINNING CROSS-VALIDATION FOR TAG: spring-boot USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: spring-boot
Accuracy is: 89.77255084614191%
Precision is: 91.23373486826588%
Recall is: 86.76450034940599%
Fmeasure is: 88.86578901187616%
Mean absolute error is: 0.10680989035704447
Root mean squared error is: 0.27703139883788136
Relative absolute error is: 21.42648295986294%
Root relative squared error is: 55.49061062533919%
Kappa statistics is: 0.7942787090268064
BEGINNING CROSS-VALIDATION FOR TAG: spring USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: spring
Accuracy is: 89.85405992858253%
Precision is: 91.42782391190856%
Recall is: 87.11041229909155%
Fmeasure is: 89.05109330136311%
Mean absolute error is: 0.12782525876684198
Root mean squared error is: 0.2868696421704354
Relative absolute error is: 25.641160059314736%
Root relative squared error is: 57.460945888865425%
Kappa statistics is: 0.7960109126750399
BEGINNING CROSS-VALIDATION FOR TAG: design-patterns USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: design-patterns
Accuracy is: 88.17574910728148%
Precision is: 88.82101426863838%
Recall is: 85.99930118798044%
Fmeasure is: 87.22671475698945%
Mean absolute error is: 0.1198917771530709
Root mean squared error is: 0.3151527795989454
Relative absolute error is: 24.05146441189373%
Root relative squared error is: 63.127616405030224%
Kappa statistics is: 0.7623343014280575
BEGINNING CROSS-VALIDATION FOR TAG: scala USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: scala
Accuracy is: 89.32929669306009%
Precision is: 92.19213281511307%
Recall is: 84.68553459119497%
Fmeasure is: 88.16989066093717%
Mean absolute error is: 0.1468658469722588
Root mean squared error is: 0.28218801974143415
Relative absolute error is: 29.462505373811503%
Root relative squared error is: 56.52438043923104%
Kappa statistics is: 0.7848857806121405
BEGINNING CROSS-VALIDATION FOR TAG: hashmap USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: hashmap
Accuracy is: 93.29762459245458%
Precision is: 92.98909566655347%
Recall is: 92.89657582110411%
Fmeasure is: 92.89273882363567%
Mean absolute error is: 0.07977654361640654
Root mean squared error is: 0.23382820392993858

Relative absolute error is: 16.004253132915007%
Root relative squared error is: 46.8377799942924%
Kappa statistics is: 0.8655089151973685
BEGINNING CROSS-VALIDATION FOR TAG: linux USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: linux
Accuracy is: 90.82518242508928%
Precision is: 91.59298522580521%
Recall is: 88.80153738644304%
Fmeasure is: 90.11779730627289%
Mean absolute error is: 0.1042059923221927
Root mean squared error is: 0.2709419470896776
Relative absolute error is: 20.903118574600818%
Root relative squared error is: 54.27041528895759%
Kappa statistics is: 0.8156144893878545
BEGINNING CROSS-VALIDATION FOR TAG: sorting USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: sorting
Accuracy is: 95.06287843502562%
Precision is: 94.15199859539482%
Recall is: 95.54507337526205%
Fmeasure is: 94.81917670735395%
Mean absolute error is: 0.06382539464273379
Root mean squared error is: 0.20958616941708647
Relative absolute error is: 12.801368191058259%
Root relative squared error is: 41.978696626497346%
Kappa statistics is: 0.9010439162394354
BEGINNING CROSS-VALIDATION FOR TAG: parsing USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: parsing
Accuracy is: 91.53314702685918%
Precision is: 91.48679535610096%
Recall is: 90.6848357791754%
Fmeasure is: 91.01320155025509%
Mean absolute error is: 0.11860413795255262
Root mean squared error is: 0.2576300634138662
Relative absolute error is: 23.79160035925102%
Root relative squared error is: 51.60448340149243%
Kappa statistics is: 0.83014805542747
BEGINNING CROSS-VALIDATION FOR TAG: gson USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: gson
Accuracy is: 94.71122496506753%
Precision is: 96.045078995079%
Recall is: 92.7288609364081%
Fmeasure is: 94.28912122920423%
Mean absolute error is: 0.06104009191815564
Root mean squared error is: 0.21230718503576923
Relative absolute error is: 12.242994963165502%
Root relative squared error is: 42.52437712034961%
Kappa statistics is: 0.8936789810733033
BEGINNING CROSS-VALIDATION FOR TAG: database USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: database
Accuracy is: 88.54137556280081%
Precision is: 89.31761746468061%
Recall is: 86.21593291404612%

Fmeasure is: 87.54242592119091%
Mean absolute error is: 0.15734449344344464
Root mean squared error is: 0.30472368161695423
Relative absolute error is: 31.561349737214623%
Root relative squared error is: 61.03635087835575%
Kappa statistics is: 0.7696233389955607
BEGINNING CROSS-VALIDATION FOR TAG: jenkins USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jenkins
Accuracy is: 95.6792423536718%
Precision is: 95.17897281831708%
Recall is: 95.8909853249476%
Fmeasure is: 95.48254094443713%
Mean absolute error is: 0.04741381872830428
Root mean squared error is: 0.1863465382565432
Relative absolute error is: 9.51136845947877%
Root relative squared error is: 37.32599406258449%
Kappa statistics is: 0.913430048474537
BEGINNING CROSS-VALIDATION FOR TAG: spring-security USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: spring-security
Accuracy is: 94.79583915541066%
Precision is: 94.14126376216744%
Recall is: 94.96156533892383%
Fmeasure is: 94.52529945610306%
Mean absolute error is: 0.05730440284497893
Root mean squared error is: 0.21473318610907985
Relative absolute error is: 11.494041867313054%
Root relative squared error is: 43.010643995953544%
Kappa statistics is: 0.8956597881099088
BEGINNING CROSS-VALIDATION FOR TAG: playframework USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: playframework
Accuracy is: 93.4753920198727%
Precision is: 96.95313615946627%
Recall is: 88.97624039133474%
Fmeasure is: 92.76016016755696%
Mean absolute error is: 0.071034940449206
Root mean squared error is: 0.23190591836719626
Relative absolute error is: 14.250886827975615%
Root relative squared error is: 46.45359787386287%
Kappa statistics is: 0.8684560599940024
BEGINNING CROSS-VALIDATION FOR TAG: websocket USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: websocket
Accuracy is: 95.14904517931998%
Precision is: 95.9136460547758%
Recall is: 93.83997204751924%
Fmeasure is: 94.82355108476438%
Mean absolute error is: 0.052669975308423024
Root mean squared error is: 0.19081780138106041
Relative absolute error is: 10.565554508720018%
Root relative squared error is: 38.22202916201178%
Kappa statistics is: 0.9026034425060274
BEGINNING CROSS-VALIDATION FOR TAG: servlets USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: servlets

Accuracy is: 90.91755938518864%
Precision is: 91.96865883011978%
Recall is: 88.61285814116005%
Fmeasure is: 90.20161355395751%
Mean absolute error is: 0.11017052755432308
Root mean squared error is: 0.2698324327116797
Relative absolute error is: 22.100346565443157%
Root relative squared error is: 54.04861573330593%
Kappa statistics is: 0.817428310351637
BEGINNING CROSS-VALIDATION FOR TAG: apache-spark USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: apache-spark
Accuracy is: 97.26828132277595%
Precision is: 98.28596462936085%
Recall is: 95.89447938504541%
Fmeasure is: 97.06119831466897%
Mean absolute error is: 0.03682203501009549
Root mean squared error is: 0.14032430746328525
Relative absolute error is: 7.386310710717029%
Root relative squared error is: 28.10752762692772%
Kappa statistics is: 0.9451047964789323
BEGINNING CROSS-VALIDATION FOR TAG: sql USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: sql
Accuracy is: 88.79599441080578%
Precision is: 90.82446375377644%
Recall is: 85.05590496156533%
Fmeasure is: 87.73054558873228%
Mean absolute error is: 0.12881118390746743
Root mean squared error is: 0.289816054505611
Relative absolute error is: 25.839246988730146%
Root relative squared error is: 58.05132438697244%
Kappa statistics is: 0.7744191061862042
BEGINNING CROSS-VALIDATION FOR TAG: oracle USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: oracle
Accuracy is: 91.08678776587486%
Precision is: 92.05227876381846%
Recall is: 89.17540181691126%
Fmeasure is: 90.48214946839013%
Mean absolute error is: 0.09771028579599807
Root mean squared error is: 0.2583968902070818
Relative absolute error is: 19.601041685785756%
Root relative squared error is: 51.75878509174139%
Kappa statistics is: 0.8210436768802349
BEGINNING CROSS-VALIDATION FOR TAG: selenium-webdriver USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: selenium-webdriver
Accuracy is: 94.43719919267195%
Precision is: 97.02884236948339%
Recall is: 91.03424178895877%
Fmeasure is: 93.90540876188675%
Mean absolute error is: 0.07023900196751322
Root mean squared error is: 0.2120474505650966
Relative absolute error is: 14.089803210692443%
Root relative squared error is: 42.474391820530926%
Kappa statistics is: 0.8880069346516297

BEGINNING CROSS-VALIDATION FOR TAG: wildfly USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: wildfly
Accuracy is: 96.2063344201211%
Precision is: 96.63469725900357%
Recall is: 95.3319357092942%
Fmeasure is: 95.94990109520175%
Mean absolute error is: 0.04429485174979825
Root mean squared error is: 0.17448962131399567
Relative absolute error is: 8.886136288202488%
Root relative squared error is: 34.951614839522435%
Kappa statistics is: 0.9238236797202539
BEGINNING CROSS-VALIDATION FOR TAG: ssl USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: ssl
Accuracy is: 92.41655022512032%
Precision is: 96.11588506270968%
Recall is: 87.48777078965759%
Fmeasure is: 91.5611323599467%
Mean absolute error is: 0.07558927935977675
Root mean squared error is: 0.2488175964629554
Relative absolute error is: 15.164432282601766%
Root relative squared error is: 49.84022289714178%
Kappa statistics is: 0.847073708336197
BEGINNING CROSS-VALIDATION FOR TAG: sqlite USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: sqlite
Accuracy is: 93.3884489986027%
Precision is: 94.5065773968172%
Recall is: 91.42208245981831%
Fmeasure is: 92.85656436616281%
Mean absolute error is: 0.0752430554667852
Root mean squared error is: 0.23015274395276655
Relative absolute error is: 15.093503027743788%
Root relative squared error is: 46.10042643674706%
Kappa statistics is: 0.867086239167875
BEGINNING CROSS-VALIDATION FOR TAG: php USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: php
Accuracy is: 91.97484862598976%
Precision is: 93.53335942239346%
Recall is: 89.37456324248777%
Fmeasure is: 91.3148235313989%
Mean absolute error is: 0.09796558841986555
Root mean squared error is: 0.24234884336602983
Relative absolute error is: 19.650793605041017%
Root relative squared error is: 48.54263591146597%
Kappa statistics is: 0.8386454304851592
BEGINNING CROSS-VALIDATION FOR TAG: google-app-engine USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: google-app-engine
Accuracy is: 96.56109299798169%
Precision is: 97.597284790681%
Recall is: 95.16072676450032%
Fmeasure is: 96.31102070903526%
Mean absolute error is: 0.042139726014389235
Root mean squared error is: 0.1544402382887748

Relative absolute error is: 8.453168183213398%
Root relative squared error is: 30.93493325519043%
Kappa statistics is: 0.9309212647859628
BEGINNING CROSS-VALIDATION FOR TAG: google-cloud-datastore USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: google-cloud-datastore
Accuracy is: 98.32557056357709%
Precision is: 98.69671558350802%
Recall is: 97.77078965758211%
Fmeasure is: 98.22415165247116%
Mean absolute error is: 0.020618900113351706
Root mean squared error is: 0.09846750934468854
Relative absolute error is: 4.135454651056355%
Root relative squared error is: 19.722320784021576%
Kappa statistics is: 0.966402448656094
BEGINNING CROSS-VALIDATION FOR TAG: string USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: string
Accuracy is: 89.77099829219065%
Precision is: 88.42997173483766%
Recall is: 90.29699510831585%
Fmeasure is: 89.31697435640018%
Mean absolute error is: 0.1282849047467135
Root mean squared error is: 0.2824895269598767
Relative absolute error is: 25.734769694304987%
Root relative squared error is: 56.58473699602145%
Kappa statistics is: 0.7950761059557763
BEGINNING CROSS-VALIDATION FOR TAG: html USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: html
Accuracy is: 92.59354137556281%
Precision is: 92.94987938717546%
Recall is: 91.41509433962264%
Fmeasure is: 92.12881050573372%
Mean absolute error is: 0.12023514994725173
Root mean squared error is: 0.24888996649801715
Relative absolute error is: 24.118165885354394%
Root relative squared error is: 49.8529915159303%
Kappa statistics is: 0.8513486357808983
BEGINNING CROSS-VALIDATION FOR TAG: libgdx USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: libgdx
Accuracy is: 97.09361900326036%
Precision is: 96.39706520486821%
Recall is: 97.5821104122991%
Fmeasure is: 96.96607191670469%
Mean absolute error is: 0.03609628076471204
Root mean squared error is: 0.14778260062786894
Relative absolute error is: 7.2399605626055346%
Root relative squared error is: 29.60004570710931%
Kappa statistics is: 0.9417763391021221
BEGINNING CROSS-VALIDATION FOR TAG: jersey USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jersey
Accuracy is: 92.59354137556281%
Precision is: 93.61080404636688%
Recall is: 90.6638714185884%

Fmeasure is: 92.01540922230717%
Mean absolute error is: 0.08218304090127124
Root mean squared error is: 0.245098866773668
Relative absolute error is: 16.485770726741904%
Root relative squared error is: 49.09440779669277%
Kappa statistics is: 0.8511221838445057
BEGINNING CROSS-VALIDATION FOR TAG: pdf USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: pdf
Accuracy is: 97.88154013351964%
Precision is: 98.14735591206178%
Recall is: 97.3864430468204%
Fmeasure is: 97.747794963219%
Mean absolute error is: 0.02785212141011086
Root mean squared error is: 0.1303572431163126
Relative absolute error is: 5.587862121035575%
Root relative squared error is: 26.111803627105086%
Kappa statistics is: 0.9574832699349564
BEGINNING CROSS-VALIDATION FOR TAG: eclipse USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: eclipse
Accuracy is: 86.50597733271232%
Precision is: 87.88531553238786%
Recall is: 83.00489168413696%
Fmeasure is: 85.29285329073335%
Mean absolute error is: 0.16530118368337124
Root mean squared error is: 0.3388257127522071
Relative absolute error is: 33.162033237113675%
Root relative squared error is: 67.87020149696711%
Kappa statistics is: 0.7284965800319351
BEGINNING CROSS-VALIDATION FOR TAG: jvm USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jvm
Accuracy is: 89.8625989753144%
Precision is: 91.90976197239499%
Recall is: 86.21243885394829%
Fmeasure is: 88.81155307839144%
Mean absolute error is: 0.1189375670539566
Root mean squared error is: 0.28701492597867206
Relative absolute error is: 23.85713175625238%
Root relative squared error is: 57.48928984384885%
Kappa statistics is: 0.7958088944022753
BEGINNING CROSS-VALIDATION FOR TAG: lambda USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: lambda
Accuracy is: 96.11783884489986%
Precision is: 96.33065869361796%
Recall is: 95.52410901467505%
Fmeasure is: 95.87491526547204%
Mean absolute error is: 0.0489429650634781
Root mean squared error is: 0.1645217343180114
Relative absolute error is: 9.817138511992038%
Root relative squared error is: 32.95351541194581%
Kappa statistics is: 0.92208895246798
BEGINNING CROSS-VALIDATION FOR TAG: spring-mvc USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: spring-mvc

Accuracy is: 87.7402577239559%
Precision is: 89.93993311518082%
Recall is: 83.40321453529002%
Fmeasure is: 86.45307155709439%
Mean absolute error is: 0.13230383287975309
Root mean squared error is: 0.3116674300075172
Relative absolute error is: 26.539860684827538%
Root relative squared error is: 62.42803196048739%
Kappa statistics is: 0.7530192682615777
BEGINNING CROSS-VALIDATION FOR TAG: swing USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: swing
Accuracy is: 90.1218754851731%
Precision is: 92.08804822980792%
Recall is: 86.94269741439551%
Fmeasure is: 89.31215729307345%
Mean absolute error is: 0.12306546558859348
Root mean squared error is: 0.27150478193327926
Relative absolute error is: 24.687700346882032%
Root relative squared error is: 54.38424823374817%
Kappa statistics is: 0.8014092948128697
BEGINNING CROSS-VALIDATION FOR TAG: arraylist USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: arraylist
Accuracy is: 92.1510634994566%
Precision is: 89.61439866397885%
Recall is: 94.77638015373864%
Fmeasure is: 91.97470017813689%
Mean absolute error is: 0.1031582046586533
Root mean squared error is: 0.24832573173035036
Relative absolute error is: 20.692043152411976%
Root relative squared error is: 49.73973219899652%
Kappa statistics is: 0.8430944008849295
BEGINNING CROSS-VALIDATION FOR TAG: selenium USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: selenium
Accuracy is: 95.05744449619625%
Precision is: 98.06851077150745%
Recall is: 91.40810621942697%
Fmeasure is: 94.57447119157197%
Mean absolute error is: 0.05524437207637689
Root mean squared error is: 0.19124015401210914
Relative absolute error is: 11.082619073092449%
Root relative squared error is: 38.3067036760246%
Kappa statistics is: 0.9004774627355833
BEGINNING CROSS-VALIDATION FOR TAG: amazon-web-services USING 3% OF THE
ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: amazon-web-services
Accuracy is: 95.59385188635306%
Precision is: 97.04567292175533%
Recall is: 93.66526904262754%
Fmeasure is: 95.24462533284085%
Mean absolute error is: 0.06126990862448163
Root mean squared error is: 0.18812535954166193
Relative absolute error is: 12.291047733887291%
Root relative squared error is: 37.682620361135164%
Kappa statistics is: 0.9114424211037904

BEGINNING CROSS-VALIDATION FOR TAG: android-intent USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: android-intent
Accuracy is: 94.09330849247011%
Precision is: 93.36537037622296%
Recall is: 94.40950384346611%
Fmeasure is: 93.82427691837037%
Mean absolute error is: 0.06708551912178881
Root mean squared error is: 0.22209959670199136
Relative absolute error is: 13.455970529214685%
Root relative squared error is: 44.48616900935919%
Kappa statistics is: 0.8816402781229303
BEGINNING CROSS-VALIDATION FOR TAG: netbeans USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: netbeans
Accuracy is: 89.6786213320913%
Precision is: 93.6933012983425%
Recall is: 83.9412997903564%
Fmeasure is: 88.4650798987103%
Mean absolute error is: 0.1250950104006032
Root mean squared error is: 0.2857509439573385
Relative absolute error is: 25.093734136901116%
Root relative squared error is: 57.23715505990839%
Kappa statistics is: 0.7917873920260474
BEGINNING CROSS-VALIDATION FOR TAG: jar USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jar
Accuracy is: 89.24934016457071%
Precision is: 90.52218717637992%
Recall is: 86.40810621942698%
Fmeasure is: 88.34989314209689%
Mean absolute error is: 0.11457989957943762
Root mean squared error is: 0.29442142755382916
Relative absolute error is: 22.981970727223565%
Root relative squared error is: 58.971799447832474%
Kappa statistics is: 0.7838311389480392
BEGINNING CROSS-VALIDATION FOR TAG: javafx USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: javafx
Accuracy is: 93.21301040211146%
Precision is: 95.32267886014758%
Recall is: 90.12229210342419%
Fmeasure is: 92.60764957025053%
Mean absolute error is: 0.09604326092596427
Root mean squared error is: 0.23302668983692781
Relative absolute error is: 19.26533597238691%
Root relative squared error is: 46.6745205752076%
Kappa statistics is: 0.8634437724329619
BEGINNING CROSS-VALIDATION FOR TAG: android-activity USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: android-activity
Accuracy is: 89.50318273560006%
Precision is: 89.13780828336084%
Recall is: 88.6093640810622%
Fmeasure is: 88.81382976805193%
Mean absolute error is: 0.11494967222519437
Root mean squared error is: 0.2857640421928628

Relative absolute error is: 23.059345906206843%
Root relative squared error is: 57.24020053599868%
Kappa statistics is: 0.7893044705765254
BEGINNING CROSS-VALIDATION FOR TAG: gradle USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: gradle
Accuracy is: 93.83015059773327%
Precision is: 92.80465738955836%
Recall is: 94.40600978336828%
Fmeasure is: 93.56598275979756%
Mean absolute error is: 0.06899971501398909
Root mean squared error is: 0.2188156119426683
Relative absolute error is: 13.840577831535024%
Root relative squared error is: 43.82906990361471%
Kappa statistics is: 0.8764092425148494
BEGINNING CROSS-VALIDATION FOR TAG: unit-testing USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: unit-testing
Accuracy is: 92.77053252600528%
Precision is: 94.50315679247025%
Recall is: 89.9266247379455%
Fmeasure is: 92.13828550749147%
Mean absolute error is: 0.08169678665175822
Root mean squared error is: 0.24941128387117803
Relative absolute error is: 16.3888561065393%
Root relative squared error is: 49.95905934927214%
Kappa statistics is: 0.8545643639000426
BEGINNING CROSS-VALIDATION FOR TAG: junit USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: junit
Accuracy is: 94.35646638720695%
Precision is: 95.32097120415655%
Recall is: 92.72536687631026%
Fmeasure is: 93.89564038612043%
Mean absolute error is: 0.07724100520937816
Root mean squared error is: 0.2129435393314716
Relative absolute error is: 15.49334537522653%
Root relative squared error is: 42.652711618350324%
Kappa statistics is: 0.8865360071300638
BEGINNING CROSS-VALIDATION FOR TAG: mockito USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: mockito
Accuracy is: 97.7930445582984%
Precision is: 97.9774852002932%
Recall is: 97.37596086652691%
Fmeasure is: 97.64264154324084%
Mean absolute error is: 0.026638763118528995
Root mean squared error is: 0.11946497220535106
Relative absolute error is: 5.344578777335641%
Root relative squared error is: 23.931235802663835%
Kappa statistics is: 0.955680153745481
BEGINNING CROSS-VALIDATION FOR TAG: performance USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: performance
Accuracy is: 84.2951405061326%
Precision is: 87.1734335540236%
Recall is: 78.3298392732355%

Fmeasure is: 82.46689590065668%
Mean absolute error is: 0.16139685679517177
Root mean squared error is: 0.365268708729461
Relative absolute error is: 32.37766499546323%
Root relative squared error is: 73.16579632538375%
Kappa statistics is: 0.6831932837801389
BEGINNING CROSS-VALIDATION FOR TAG: jasper-reports USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jasper-reports
Accuracy is: 98.41251358484706%
Precision is: 98.88500632840255%
Recall is: 97.7603074772886%
Fmeasure is: 98.30133227129954%
Mean absolute error is: 0.0264365117679702
Root mean squared error is: 0.1155677780684643
Relative absolute error is: 5.303457252549191%
Root relative squared error is: 23.14964921063187%
Kappa statistics is: 0.9681173808302412
BEGINNING CROSS-VALIDATION FOR TAG: regex USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: regex
Accuracy is: 94.53423381462505%
Precision is: 95.64827875071222%
Recall is: 92.71139063591895%
Fmeasure is: 94.10702993176879%
Mean absolute error is: 0.06393167663728766
Root mean squared error is: 0.20252966422396845
Relative absolute error is: 12.824534847164617%
Root relative squared error is: 40.56738557264392%
Kappa statistics is: 0.8901283599597948
BEGINNING CROSS-VALIDATION FOR TAG: jetty USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jetty
Accuracy is: 92.14795839155411%
Precision is: 92.48842129870873%
Recall is: 90.85255066387141%
Fmeasure is: 91.63125392123293%
Mean absolute error is: 0.08017758938133254
Root mean squared error is: 0.2515638419046423
Relative absolute error is: 16.083142638555422%
Root relative squared error is: 50.388874294973974%
Kappa statistics is: 0.8423610608548303
BEGINNING CROSS-VALIDATION FOR TAG: http USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: http
Accuracy is: 89.24235367179008%
Precision is: 91.74551133485272%
Recall is: 85.083857442348%
Fmeasure is: 88.17825635982196%
Mean absolute error is: 0.12317309360846485
Root mean squared error is: 0.29139866866268005
Relative absolute error is: 24.708682068327622%
Root relative squared error is: 58.368763765190465%
Kappa statistics is: 0.7833933334544317
BEGINNING CROSS-VALIDATION FOR TAG: mysql USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: mysql

Accuracy is: 90.83605030274802%
Precision is: 91.19084123880138%
Recall is: 89.38853948287911%
Fmeasure is: 90.21484356417442%
Mean absolute error is: 0.10945102527604633
Root mean squared error is: 0.27472213846418436
Relative absolute error is: 21.95424777348163%
Root relative squared error is: 55.02708967500989%
Kappa statistics is: 0.8160184649173458
BEGINNING CROSS-VALIDATION FOR TAG: spring-data-jpa USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: spring-data-jpa
Accuracy is: 92.15494488433474%
Precision is: 92.75406389275878%
Recall is: 90.68134171907758%
Fmeasure is: 91.61000578956006%
Mean absolute error is: 0.08000192699533724
Root mean squared error is: 0.23830250706963665
Relative absolute error is: 16.047992805621583%
Root relative squared error is: 47.732194792623105%
Kappa statistics is: 0.8424800501940697
BEGINNING CROSS-VALIDATION FOR TAG: postgresql USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: postgresql
Accuracy is: 94.00093153237076%
Precision is: 94.34353524142647%
Recall is: 92.90705800139764%
Fmeasure is: 93.60000836649007%
Mean absolute error is: 0.07080155221410953
Root mean squared error is: 0.2221554657603829
Relative absolute error is: 14.20224845747831%
Root relative squared error is: 44.49809997122936%
Kappa statistics is: 0.8795437989045224
BEGINNING CROSS-VALIDATION FOR TAG: collections USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: collections
Accuracy is: 89.24157739481447%
Precision is: 85.38628559596397%
Recall is: 93.26694619147449%
Fmeasure is: 89.11938966058484%
Mean absolute error is: 0.12185303346653864
Root mean squared error is: 0.27640434727169666
Relative absolute error is: 24.44461603037714%
Root relative squared error is: 55.366212557518125%
Kappa statistics is: 0.785220651431097
BEGINNING CROSS-VALIDATION FOR TAG: angularjs USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: angularjs
Accuracy is: 92.05868653935724%
Precision is: 93.4633328577359%
Recall is: 89.53878406708593%
Fmeasure is: 91.398344497634%
Mean absolute error is: 0.07848678142356048
Root mean squared error is: 0.2430415514999691
Relative absolute error is: 15.746151659945422%
Root relative squared error is: 48.684001436209904%
Kappa statistics is: 0.8403041596052743

BEGINNING CROSS-VALIDATION FOR TAG: java-stream USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: java-stream
Accuracy is: 94.97671169073126%
Precision is: 93.37976310770273%
Recall is: 96.27183787561145%
Fmeasure is: 94.77468006503861%
Mean absolute error is: 0.05660902757166817
Root mean squared error is: 0.18352267762726374
Relative absolute error is: 11.354997968619903%
Root relative squared error is: 36.7595052793371%
Kappa statistics is: 0.8994035945787384
BEGINNING CROSS-VALIDATION FOR TAG: javascript USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: javascript
Accuracy is: 85.71572737152614%
Precision is: 90.81117134135687%
Recall is: 77.82320055904961%
Fmeasure is: 83.70756664066006%
Mean absolute error is: 0.19202195992265197
Root mean squared error is: 0.32543949921928883
Relative absolute error is: 38.51827442371048%
Root relative squared error is: 65.18601741594969%
Kappa statistics is: 0.7113755826600816
BEGINNING CROSS-VALIDATION FOR TAG: jframe USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jframe
Accuracy is: 94.88588728458313%
Precision is: 95.8112537193558%
Recall is: 93.2879105520615%
Fmeasure is: 94.52369711169806%
Mean absolute error is: 0.05352287250780763
Root mean squared error is: 0.19367600770461152
Relative absolute error is: 10.736098770903665%
Root relative squared error is: 38.79359173181341%
Kappa statistics is: 0.8972754052591982
BEGINNING CROSS-VALIDATION FOR TAG: android-fragments USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: android-fragments
Accuracy is: 94.35724266418258%
Precision is: 94.7241389845105%
Recall is: 93.28092243186583%
Fmeasure is: 93.96221931628774%
Mean absolute error is: 0.06896240658547495
Root mean squared error is: 0.22484473452451598
Relative absolute error is: 13.834149667875058%
Root relative squared error is: 45.03809461420975%
Kappa statistics is: 0.8866756600071207
BEGINNING CROSS-VALIDATION FOR TAG: testng USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: testng
Accuracy is: 95.32836516068934%
Precision is: 97.46139547255767%
Recall is: 92.52969951083159%
Fmeasure is: 94.91630342790504%
Mean absolute error is: 0.05151092664857497
Root mean squared error is: 0.19778044761553012

Relative absolute error is: 10.333833614321327%
Root relative squared error is: 39.617634117536475%
Kappa statistics is: 0.9060033773109788
BEGINNING CROSS-VALIDATION FOR TAG: javafx-8 USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: javafx-8
Accuracy is: 96.12172022977798%
Precision is: 96.6444299606342%
Recall is: 95.15024458420685%
Fmeasure is: 95.85954232066616%
Mean absolute error is: 0.0519641489585575
Root mean squared error is: 0.17449813096548525
Relative absolute error is: 10.423712973024866%
Root relative squared error is: 34.95198361831196%
Kappa statistics is: 0.9221279063498207
BEGINNING CROSS-VALIDATION FOR TAG: recyclerview USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: recyclerview
Accuracy is: 96.5680794907623%
Precision is: 95.01242644969317%
Recall is: 97.96296296296298%
Fmeasure is: 96.44459535600323%
Mean absolute error is: 0.03376468359553393
Root mean squared error is: 0.13781571308223886
Relative absolute error is: 6.771218205179048%
Root relative squared error is: 27.60134631377121%
Kappa statistics is: 0.9313032966234006
BEGINNING CROSS-VALIDATION FOR TAG: jboss USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jboss
Accuracy is: 92.33348858872847%
Precision is: 92.8561048172036%
Recall is: 90.87002096436059%
Fmeasure is: 91.80722327474267%
Mean absolute error is: 0.09407195956524603
Root mean squared error is: 0.2588806049880904
Relative absolute error is: 18.869830906947488%
Root relative squared error is: 51.854268005456106%
Kappa statistics is: 0.8460614627848708
BEGINNING CROSS-VALIDATION FOR TAG: nullpointerexception USING 3% OF THE
ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: nullpointerexception
Accuracy is: 91.70703306939917%
Precision is: 93.39330939351154%
Recall is: 88.80503144654088%
Fmeasure is: 90.99458570901331%
Mean absolute error is: 0.11511978831742482
Root mean squared error is: 0.26593201180013415
Relative absolute error is: 23.092112671457485%
Root relative squared error is: 53.26653918323709%
Kappa statistics is: 0.8332004957651554
BEGINNING CROSS-VALIDATION FOR TAG: date USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: date
Accuracy is: 95.8539046731874%
Precision is: 96.83847880867884%
Recall is: 94.39203354297692%

Fmeasure is: 95.55246797952347%
Mean absolute error is: 0.048675474390863095
Root mean squared error is: 0.17889980429775904
Relative absolute error is: 9.76431750974685%
Root relative squared error is: 35.83439382171706%
Kappa statistics is: 0.9166958955868088
BEGINNING CROSS-VALIDATION FOR TAG: jackson USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jackson
Accuracy is: 94.09175593851887%
Precision is: 95.64019974734262%
Recall is: 91.78546470999301%
Fmeasure is: 93.6163164816883%
Mean absolute error is: 0.062467684599845696
Root mean squared error is: 0.20906080031922544
Relative absolute error is: 12.531189964168366%
Root relative squared error is: 41.87602765771409%
Kappa statistics is: 0.8812120163945835
BEGINNING CROSS-VALIDATION FOR TAG: mongodb USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: mongodb
Accuracy is: 96.56109299798167%
Precision is: 97.24070988410611%
Recall is: 95.52061495457723%
Fmeasure is: 96.31752775121257%
Mean absolute error is: 0.04880550369460691
Root mean squared error is: 0.1640570126991168
Relative absolute error is: 9.790973438977778%
Root relative squared error is: 32.86240733765903%
Kappa statistics is: 0.9309316206453602
BEGINNING CROSS-VALIDATION FOR TAG: user-interface USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: user-interface
Accuracy is: 88.71215649743829%
Precision is: 91.18351226755088%
Recall is: 84.68553459119498%
Fmeasure is: 87.61962800522846%
Mean absolute error is: 0.1269925250752048
Root mean squared error is: 0.30610417266256346
Relative absolute error is: 25.473943341245633%
Root relative squared error is: 61.31320274851697%
Kappa statistics is: 0.7727283407276286
BEGINNING CROSS-VALIDATION FOR TAG: rest USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: rest
Accuracy is: 90.91367800031051%
Precision is: 90.33221138593824%
Recall is: 90.47169811320755%
Fmeasure is: 90.37773119519699%
Mean absolute error is: 0.10808767613301506
Root mean squared error is: 0.27629486390083496
Relative absolute error is: 21.683625320357418%
Root relative squared error is: 55.34430198382656%
Kappa statistics is: 0.8177011608213591
BEGINNING CROSS-VALIDATION FOR TAG: list USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: list

Accuracy is: 89.85561248253376%
Precision is: 89.17295270219628%
Recall is: 89.55974842767296%
Fmeasure is: 89.25843626706558%
Mean absolute error is: 0.11855833455875328
Root mean squared error is: 0.28166513353262757
Relative absolute error is: 23.782357405957605%
Root relative squared error is: 56.41829660122486%
Kappa statistics is: 0.7965281885633175
BEGINNING CROSS-VALIDATION FOR TAG: spring-data USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: spring-data
Accuracy is: 92.85747554727526%
Precision is: 93.89626277142926%
Recall is: 90.85604472396923%
Fmeasure is: 92.31818492392442%
Mean absolute error is: 0.08150450218314763
Root mean squared error is: 0.246139211314353
Relative absolute error is: 16.34948960836689%
Root relative squared error is: 49.302777618504344%
Kappa statistics is: 0.8564753568928183
BEGINNING CROSS-VALIDATION FOR TAG: file USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: file
Accuracy is: 89.4201210992082%
Precision is: 90.1612392214384%
Recall is: 87.32005590496155%
Fmeasure is: 88.64084291220027%
Mean absolute error is: 0.13443661602874957
Root mean squared error is: 0.2782444013361157
Relative absolute error is: 26.966682549042776%
Root relative squared error is: 55.73260266892176%
Kappa statistics is: 0.7874388390665765
BEGINNING CROSS-VALIDATION FOR TAG: web-services USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: web-services
Accuracy is: 91.80329141437666%
Precision is: 93.3115951859782%
Recall is: 89.18937805730259%
Fmeasure is: 91.13539695507328%
Mean absolute error is: 0.10283789477536598
Root mean squared error is: 0.26266022841543496
Relative absolute error is: 20.6286467323825%
Root relative squared error is: 52.6115994635973%
Kappa statistics is: 0.8352165170240726
BEGINNING CROSS-VALIDATION FOR TAG: opencv USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: opencv
Accuracy is: 97.35444806707035%
Precision is: 97.95927280266903%
Recall is: 96.45352900069881%
Fmeasure is: 97.16669064047133%
Mean absolute error is: 0.03389213242848345
Root mean squared error is: 0.14360598339015837
Relative absolute error is: 6.799638151437125%
Root relative squared error is: 28.76597722234493%
Kappa statistics is: 0.946863587789186

BEGINNING CROSS-VALIDATION FOR TAG: hadoop USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: hadoop
Accuracy is: 92.3319360347772%
Precision is: 95.0534340304589%
Recall is: 88.43116701607269%
Fmeasure is: 91.5744065612304%
Mean absolute error is: 0.09202597093031041
Root mean squared error is: 0.250863880551606
Relative absolute error is: 18.460112296208752%
Root relative squared error is: 50.24885666806743%
Kappa statistics is: 0.8455719647502976
BEGINNING CROSS-VALIDATION FOR TAG: jax-rs USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jax-rs
Accuracy is: 94.00015525539513%
Precision is: 92.92155074462644%
Recall is: 94.58770090845562%
Fmeasure is: 93.71059661971091%
Mean absolute error is: 0.07093568073272466
Root mean squared error is: 0.22411728288626667
Relative absolute error is: 14.229920603579263%
Root relative squared error is: 44.891811614646635%
Kappa statistics is: 0.8797444389498177
BEGINNING CROSS-VALIDATION FOR TAG: multithreading USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: multithreading
Accuracy is: 90.6489675516224%
Precision is: 91.71810866581757%
Recall is: 88.4346610761705%
Fmeasure is: 89.93391719854236%
Mean absolute error is: 0.1008788015209769
Root mean squared error is: 0.2672170477261665
Relative absolute error is: 20.236919421986084%
Root relative squared error is: 53.52532634290522%
Kappa statistics is: 0.8121217724207916
BEGINNING CROSS-VALIDATION FOR TAG: java-ee USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: java-ee
Accuracy is: 80.33457537649433%
Precision is: 86.35162767802566%
Recall is: 69.58071278825994%
Fmeasure is: 76.87876203052079%
Mean absolute error is: 0.2492151985012383
Root mean squared error is: 0.3936463998770085
Relative absolute error is: 49.99161108511457%
Root relative squared error is: 78.84862200138214%
Kappa statistics is: 0.6014054780895718
BEGINNING CROSS-VALIDATION FOR TAG: dependency-injection USING 3% OF THE
ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: dependency-injection
Accuracy is: 92.15261605340787%
Precision is: 95.0316449949115%
Recall is: 88.06778476589797%
Fmeasure is: 91.26701450883078%
Mean absolute error is: 0.0852415705478764
Root mean squared error is: 0.26075455899313726

Relative absolute error is: 17.0989948956039%
Root relative squared error is: 52.230173248174005%
Kappa statistics is: 0.8418075175326344
BEGINNING CROSS-VALIDATION FOR TAG: excel USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: excel
Accuracy is: 97.97236453966778%
Precision is: 98.49755415793153%
Recall is: 97.20475192173306%
Fmeasure is: 97.84148346086276%
Mean absolute error is: 0.025470947184398067
Root mean squared error is: 0.1315591595301423
Relative absolute error is: 5.109132516436658%
Root relative squared error is: 26.35137505112774%
Kappa statistics is: 0.9592992782725778
BEGINNING CROSS-VALIDATION FOR TAG: apache-poi USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: apache-poi
Accuracy is: 96.6464834653004%
Precision is: 98.67130797430465%
Recall is: 94.2033542976939%
Fmeasure is: 96.3572131788124%
Mean absolute error is: 0.03695981538182995
Root mean squared error is: 0.16423440880157766
Relative absolute error is: 7.413638158845264%
Root relative squared error is: 32.896452194885185%
Kappa statistics is: 0.9325395581685193
BEGINNING CROSS-VALIDATION FOR TAG: logging USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: logging
Accuracy is: 93.47927340475081%
Precision is: 95.23074481406063%
Recall is: 90.85255066387141%
Fmeasure is: 92.93294853025955%
Mean absolute error is: 0.07496983144713316
Root mean squared error is: 0.22870190332088444
Relative absolute error is: 15.038721180614289%
Root relative squared error is: 45.81009447745798%
Kappa statistics is: 0.8688611038438727
BEGINNING CROSS-VALIDATION FOR TAG: jms USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jms
Accuracy is: 95.77006675981991%
Precision is: 96.58071114270575%
Recall is: 94.41299790356393%
Fmeasure is: 95.46555465091431%
Mean absolute error is: 0.043927462297208134
Root mean squared error is: 0.17646343460915426
Relative absolute error is: 8.812113782173714%
Root relative squared error is: 35.34700066450584%
Kappa statistics is: 0.9150353641227259
BEGINNING CROSS-VALIDATION FOR TAG: api USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: api
Accuracy is: 90.12420431609999%
Precision is: 90.91771725475137%
Recall is: 88.06429070580015%

Fmeasure is: 89.36745677085064%
Mean absolute error is: 0.14584287342866795
Root mean squared error is: 0.28210778130295927
Relative absolute error is: 29.255195669135173%
Root relative squared error is: 56.50659099399827%
Kappa statistics is: 0.80156522610101
BEGINNING CROSS-VALIDATION FOR TAG: jquery USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jquery
Accuracy is: 93.91786989597888%
Precision is: 94.7613681948138%
Recall is: 92.35849056603772%
Fmeasure is: 93.45509663765702%
Mean absolute error is: 0.08020113482448206
Root mean squared error is: 0.22130105767715896
Relative absolute error is: 16.089240889800273%
Root relative squared error is: 44.32848941400026%
Kappa statistics is: 0.8777957039142349
BEGINNING CROSS-VALIDATION FOR TAG: rx-java USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: rx-java
Accuracy is: 96.2963825492936%
Precision is: 98.2588278082646%
Recall is: 93.85744234800838%
Fmeasure is: 95.96173981587245%
Mean absolute error is: 0.03933390584927262
Root mean squared error is: 0.16208311227337222
Relative absolute error is: 7.8897136566001365%
Root relative squared error is: 32.465314346011795%
Kappa statistics is: 0.9254941882278537
BEGINNING CROSS-VALIDATION FOR TAG: oop USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: oop
Accuracy is: 86.15277130880298%
Precision is: 88.52346891140753%
Recall is: 81.51642208245981%
Fmeasure is: 84.58602445349479%
Mean absolute error is: 0.13716746516207712
Root mean squared error is: 0.3210605935481129
Relative absolute error is: 27.51824231693596%
Root relative squared error is: 64.31166697146762%
Kappa statistics is: 0.7208279528233604
BEGINNING CROSS-VALIDATION FOR TAG: serialization USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: serialization
Accuracy is: 92.15416860735911%
Precision is: 93.4513022795787%
Recall is: 89.74493361285815%
Fmeasure is: 91.4812392045166%
Mean absolute error is: 0.08583514003510494
Root mean squared error is: 0.24384616443839563
Relative absolute error is: 17.21764210732905%
Root relative squared error is: 48.842799423912254%
Kappa statistics is: 0.8421948166726361
BEGINNING CROSS-VALIDATION FOR TAG: encryption USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: encryption

Accuracy is: 94.96972519795062%
Precision is: 97.88984194677838%
Recall is: 91.40461215932915%
Fmeasure is: 94.47997085737478%
Mean absolute error is: 0.050343283702323396
Root mean squared error is: 0.19384657739562644
Relative absolute error is: 10.09908108193051%
Root relative squared error is: 38.828699207105814%
Kappa statistics is: 0.898715929285925
BEGINNING CROSS-VALIDATION FOR TAG: apache-camel USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: apache-camel
Accuracy is: 97.97003570874088%
Precision is: 99.27922077922078%
Recall is: 96.45003494060097%
Fmeasure is: 97.8175216893581%
Mean absolute error is: 0.022770521411479026
Root mean squared error is: 0.123383330619111
Relative absolute error is: 4.567519754922472%
Root relative squared error is: 24.71372198559984%
Kappa statistics is: 0.9592129951660008
BEGINNING CROSS-VALIDATION FOR TAG: generics USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: generics
Accuracy is: 95.85856233504114%
Precision is: 94.60449432669753%
Recall is: 96.82739343116701%
Fmeasure is: 95.679480644861%
Mean absolute error is: 0.051731628097167325
Root mean squared error is: 0.17905101905766627
Relative absolute error is: 10.377806321502405%
Root relative squared error is: 35.86537512109652%
Kappa statistics is: 0.9170429272333944
BEGINNING CROSS-VALIDATION FOR TAG: google-maps USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: google-maps
Accuracy is: 95.94317652538425%
Precision is: 96.96901965958568%
Recall is: 94.3990216631726%
Fmeasure is: 95.63735266384656%
Mean absolute error is: 0.044950448286153945
Root mean squared error is: 0.18571962079795207
Relative absolute error is: 9.017789120810265%
Root relative squared error is: 37.20145220369942%
Kappa statistics is: 0.9184880213084312
BEGINNING CROSS-VALIDATION FOR TAG: mapreduce USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: mapreduce
Accuracy is: 96.29482999534234%
Precision is: 97.67244354383644%
Recall is: 94.38504542278126%
Fmeasure is: 95.97758102140446%
Mean absolute error is: 0.04236179661586477
Root mean squared error is: 0.16700620324814675
Relative absolute error is: 8.498965590162962%
Root relative squared error is: 33.453712011042825%
Kappa statistics is: 0.9254629125707776

BEGINNING CROSS-VALIDATION FOR TAG: itext USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: itext
Accuracy is: 98.41173730787145%
Precision is: 98.18094868094867%
Recall is: 98.50104821802935%
Fmeasure is: 98.32056770891806%
Mean absolute error is: 0.0241097210144123
Root mean squared error is: 0.1131667325209154
Relative absolute error is: 4.83632699034418%
Root relative squared error is: 22.668035568640267%
Kappa statistics is: 0.968137996813871
BEGINNING CROSS-VALIDATION FOR TAG: sockets USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: sockets
Accuracy is: 94.71044868809192%
Precision is: 96.73992060708409%
Recall is: 91.9811320754717%
Fmeasure is: 94.259305807742%
Mean absolute error is: 0.0544764686947503
Root mean squared error is: 0.20699589311678018
Relative absolute error is: 10.92795969735292%
Root relative squared error is: 41.462274338833645%
Kappa statistics is: 0.8936171129723084
BEGINNING CROSS-VALIDATION FOR TAG: debugging USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: debugging
Accuracy is: 90.03726129483%
Precision is: 95.16340721302399%
Recall is: 83.21802935010484%
Fmeasure is: 88.72751412331954%
Mean absolute error is: 0.10767008001879204
Root mean squared error is: 0.28091907257211496
Relative absolute error is: 21.597748669060984%
Root relative squared error is: 56.26893415011292%
Kappa statistics is: 0.7988154587287146
BEGINNING CROSS-VALIDATION FOR TAG: testing USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: testing
Accuracy is: 89.41934482223257%
Precision is: 94.1925679801444%
Recall is: 82.64150943396226%
Fmeasure is: 87.96444914639295%
Mean absolute error is: 0.11601688533140717
Root mean squared error is: 0.2743025390590371
Relative absolute error is: 23.273912640263866%
Root relative squared error is: 54.94497424461815%
Kappa statistics is: 0.7861940332862377
BEGINNING CROSS-VALIDATION FOR TAG: windows USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: windows
Accuracy is: 87.39326191585157%
Precision is: 91.80005277625483%
Recall is: 80.61146051712089%
Fmeasure is: 85.74924957030996%
Mean absolute error is: 0.13435084296752103
Root mean squared error is: 0.3230091696972553

Relative absolute error is: 26.950303757891696%
Root relative squared error is: 64.69996046220966%
Kappa statistics is: 0.7454622787939259
BEGINNING CROSS-VALIDATION FOR TAG: osx USING 3% OF THE ORIGINAL DATASET, WITH
THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: osx
Accuracy is: 93.74398385343889%
Precision is: 94.1897740149424%
Recall is: 92.54018169112507%
Fmeasure is: 93.29271852825187%
Mean absolute error is: 0.061948906285547035
Root mean squared error is: 0.2133851691648747
Relative absolute error is: 12.427146891426395%
Root relative squared error is: 42.74283028369695%
Kappa statistics is: 0.8743377584252154
BEGINNING CROSS-VALIDATION FOR TAG: soap USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: soap
Accuracy is: 94.36190032603633%
Precision is: 95.31775479823078%
Recall is: 92.73235499650592%
Fmeasure is: 93.96262347288175%
Mean absolute error is: 0.060867612840779795
Root mean squared error is: 0.21704015104064678
Relative absolute error is: 12.209803143747969%
Root relative squared error is: 43.47394215501396%
Kappa statistics is: 0.8867656253296199
BEGINNING CROSS-VALIDATION FOR TAG: image USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: image
Accuracy is: 96.91585157584225%
Precision is: 96.14899914899915%
Recall is: 97.3969252271139%
Fmeasure is: 96.74911024902372%
Mean absolute error is: 0.05379331975210799
Root mean squared error is: 0.16474135530151165
Relative absolute error is: 10.79053420640678%
Root relative squared error is: 32.997719281753355%
Kappa statistics is: 0.938156625485582
BEGINNING CROSS-VALIDATION FOR TAG: jsoup USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jsoup
Accuracy is: 97.17745691662786%
Precision is: 98.13586303736137%
Recall is: 95.88399720475192%
Fmeasure is: 96.96843785573313%
Mean absolute error is: 0.03070205048412956
Root mean squared error is: 0.14131990967974542
Relative absolute error is: 6.15907136725355%
Root relative squared error is: 28.307625576034848%
Kappa statistics is: 0.9432836813428043
BEGINNING CROSS-VALIDATION FOR TAG: apache-kafka USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: apache-kafka
Accuracy is: 96.29793510324484%
Precision is: 98.24835557128247%
Recall is: 93.85045422781272%

Fmeasure is: 95.96064427171582%
Mean absolute error is: 0.040436256507133575
Root mean squared error is: 0.1734350479854247
Relative absolute error is: 8.111086848379887%
Root relative squared error is: 34.73989163431244%
Kappa statistics is: 0.9255101079063142
BEGINNING CROSS-VALIDATION FOR TAG: security USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: security
Accuracy is: 88.53283651606894%
Precision is: 92.08603718727981%
Recall is: 82.8301886792453%
Fmeasure is: 87.16882545328698%
Mean absolute error is: 0.13470834219361724
Root mean squared error is: 0.3117628790220174
Relative absolute error is: 27.021353533861976%
Root relative squared error is: 62.446757931302685%
Kappa statistics is: 0.7686488621231122
BEGINNING CROSS-VALIDATION FOR TAG: exception USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: exception
Accuracy is: 84.66076696165192%
Precision is: 86.63141878049952%
Recall is: 80.05939902166315%
Fmeasure is: 83.14114349492264%
Mean absolute error is: 0.2053664370154531
Root mean squared error is: 0.34353488477490535
Relative absolute error is: 41.19628745101835%
Root relative squared error is: 68.81139660942392%
Kappa statistics is: 0.6911737149783616
BEGINNING CROSS-VALIDATION FOR TAG: methods USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: methods
Accuracy is: 88.97453811519951%
Precision is: 88.17440818439104%
Recall is: 88.6303284416492%
Fmeasure is: 88.35334427783052%
Mean absolute error is: 0.12228521075511804
Root mean squared error is: 0.28624461703316545
Relative absolute error is: 24.530105400665697%
Root relative squared error is: 57.335612499226144%
Kappa statistics is: 0.7788895766466893
BEGINNING CROSS-VALIDATION FOR TAG: inheritance USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: inheritance
Accuracy is: 94.35569011023131%
Precision is: 93.01251239657398%
Recall is: 95.33892382948987%
Fmeasure is: 94.12651070028099%
Mean absolute error is: 0.05888478801471116
Root mean squared error is: 0.20759904627319753
Relative absolute error is: 11.810699840431386%
Root relative squared error is: 41.58098744182481%
Kappa statistics is: 0.8869614211766867
BEGINNING CROSS-VALIDATION FOR TAG: kotlin USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: kotlin

Accuracy is: 94.88899239248563%
Precision is: 96.04909845071569%
Recall is: 93.10971348707196%
Fmeasure is: 94.51175755476274%
Mean absolute error is: 0.07704379082909858
Root mean squared error is: 0.19982489131213788
Relative absolute error is: 15.454722226264234%
Root relative squared error is: 40.02579393485674%
Kappa statistics is: 0.897320323607652
BEGINNING CROSS-VALIDATION FOR TAG: class USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: class
Accuracy is: 85.97733271231176%
Precision is: 84.39421406229931%
Recall is: 86.55485674353596%
Fmeasure is: 85.36471551518513%
Mean absolute error is: 0.16188994972495446
Root mean squared error is: 0.3196795031507123
Relative absolute error is: 32.47466429941751%
Root relative squared error is: 64.03278427554866%
Kappa statistics is: 0.7190712038928653
BEGINNING CROSS-VALIDATION FOR TAG: log4j USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: log4j
Accuracy is: 97.08973761838224%
Precision is: 97.21627471266761%
Recall is: 96.64570230607966%
Fmeasure is: 96.90622064396572%
Mean absolute error is: 0.03423999262604414
Root mean squared error is: 0.1540907185990759
Relative absolute error is: 6.868494275954198%
Root relative squared error is: 30.864726782789887%
Kappa statistics is: 0.9415884379447608
BEGINNING CROSS-VALIDATION FOR TAG: ajax USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: ajax
Accuracy is: 95.8507995652849%
Precision is: 96.48146021771784%
Recall is: 94.75192173305382%
Fmeasure is: 95.55516977374359%
Mean absolute error is: 0.0468907521059514
Root mean squared error is: 0.17310824562190996
Relative absolute error is: 9.406660040193154%
Root relative squared error is: 34.674683073008396%
Kappa statistics is: 0.9166473633796199
BEGINNING CROSS-VALIDATION FOR TAG: annotations USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: annotations
Accuracy is: 91.1814935569011%
Precision is: 92.70024276897679%
Recall is: 88.424178895877%
Fmeasure is: 90.42006535407249%
Mean absolute error is: 0.11325473562489399
Root mean squared error is: 0.26930141321470236
Relative absolute error is: 22.718737526347205%
Root relative squared error is: 53.94256375407194%
Kappa statistics is: 0.8226149620752994

BEGINNING CROSS-VALIDATION FOR TAG: loops USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: loops
Accuracy is: 89.50939295140506%
Precision is: 90.5312513750274%
Recall is: 87.1243885394829%
Fmeasure is: 88.6619722375448%
Mean absolute error is: 0.1174352639898443
Root mean squared error is: 0.27991328942888427
Relative absolute error is: 23.556507685273555%
Root relative squared error is: 56.06691798535671%
Kappa statistics is: 0.7890730636048786
BEGINNING CROSS-VALIDATION FOR TAG: datetime USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: datetime
Accuracy is: 97.52988666356154%
Precision is: 98.48909396190194%
Recall is: 96.26135569531796%
Fmeasure is: 97.34524177667711%
Mean absolute error is: 0.03600790985378721
Root mean squared error is: 0.15472365347013567
Relative absolute error is: 7.223726464384333%
Root relative squared error is: 30.993168649699527%
Kappa statistics is: 0.9503648073141833
BEGINNING CROSS-VALIDATION FOR TAG: python USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: python
Accuracy is: 91.45163794441856%
Precision is: 94.87164271302927%
Recall is: 86.58630328441647%
Fmeasure is: 90.46451865376348%
Mean absolute error is: 0.11230469269584387
Root mean squared error is: 0.26062434079720265
Relative absolute error is: 22.528246251493677%
Root relative squared error is: 52.204253467590334%
Kappa statistics is: 0.8276264017813124
BEGINNING CROSS-VALIDATION FOR TAG: jaxb USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: jaxb
Accuracy is: 95.2398695854681%
Precision is: 96.91683049517135%
Recall is: 92.90705800139762%
Fmeasure is: 94.82632005464865%
Mean absolute error is: 0.053560602571135395
Root mean squared error is: 0.2016561804235935
Relative absolute error is: 10.744885068367259%
Root relative squared error is: 40.39321020284195%
Kappa statistics is: 0.9042371425149349
BEGINNING CROSS-VALIDATION FOR TAG: concurrency USING 3% OF THE ORIGINAL
DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: concurrency
Accuracy is: 89.07234901412824%
Precision is: 91.5543103617613%
Recall is: 84.7309573724668%
Fmeasure is: 87.91426900533467%
Mean absolute error is: 0.11064428253318245
Root mean squared error is: 0.29745038049099976

Relative absolute error is: 22.193334800950506%
Root relative squared error is: 59.57948112055658%
Kappa statistics is: 0.7798772627576115
BEGINNING CROSS-VALIDATION FOR TAG: elasticsearch USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: elasticsearch
Accuracy is: 98.2386275423071%
Precision is: 98.50777489456735%
Recall is: 97.77078965758211%
Fmeasure is: 98.12190862603795%
Mean absolute error is: 0.026416783274443068
Root mean squared error is: 0.11131586239464777
Relative absolute error is: 5.299082610142569%
Root relative squared error is: 22.297014698499087%
Kappa statistics is: 0.964640230414305
BEGINNING CROSS-VALIDATION FOR TAG: c# USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: c#
Accuracy is: 90.47275267815556%
Precision is: 91.56482773402863%
Recall is: 88.05730258560449%
Fmeasure is: 89.71354782224043%
Mean absolute error is: 0.11827751015256358
Root mean squared error is: 0.26295347804409414
Relative absolute error is: 23.72633738779877%
Root relative squared error is: 52.67046073172624%
Kappa statistics is: 0.8084888091117362
BEGINNING CROSS-VALIDATION FOR TAG: android-layout USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: android-layout
Accuracy is: 89.94410805775502%
Precision is: 90.59946200702504%
Recall is: 88.06079664570231%
Fmeasure is: 89.2545756980206%
Mean absolute error is: 0.10876357869572684
Root mean squared error is: 0.2699187918953643
Relative absolute error is: 21.818974331490615%
Root relative squared error is: 54.067260708438006%
Kappa statistics is: 0.7980997134717166
BEGINNING CROSS-VALIDATION FOR TAG: firebase USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: firebase
Accuracy is: 96.21176835895048%
Precision is: 96.19804592957522%
Recall is: 95.89797344514326%
Fmeasure is: 95.9980157471935%
Mean absolute error is: 0.04614679936771965
Root mean squared error is: 0.1687643698837497
Relative absolute error is: 9.257154845650879%
Root relative squared error is: 33.80442164012056%
Kappa statistics is: 0.9240199968020143
BEGINNING CROSS-VALIDATION FOR TAG: listview USING 3% OF THE ORIGINAL DATASET, WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: listview
Accuracy is: 95.5022512032293%
Precision is: 93.53129592113852%
Recall is: 97.40041928721173%

Fmeasure is: 95.36600629491677%
Mean absolute error is: 0.049457207414177556
Root mean squared error is: 0.18265870417490812
Relative absolute error is: 9.922260567996329%
Root relative squared error is: 36.58884228605869%
Kappa statistics is: 0.9100507587208501
BEGINNING CROSS-VALIDATION FOR TAG: struts2 USING 3% OF THE ORIGINAL DATASET,
WITH THE TESTING SET MAKING UP 10%
FINAL OUTPUT FOR TAG: struts2
Accuracy is: 98.14935569011024%
Precision is: 99.06345750685372%
Recall is: 97.01956673654789%
Fmeasure is: 98.01569730549312%
Mean absolute error is: 0.024318397873005194
Root mean squared error is: 0.11294830291795208
Relative absolute error is: 4.877326473037362%
Root relative squared error is: 22.6226743820032%
Kappa statistics is: 0.9628244373455559