

Lab 04

Zadanie 1:

0.7985341880063129

0.01518239867249338

Zadanie 2 – w tym zadaniu miałem problem, którego nie udało mi się rozwiązać – przy normalizacji nazwy kolumn zmieniają się na liczby:

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
|-----|-----|----------|------|----------|----------|----------|----------|----------|-----|--|
| 0 | 0.6 | 0.754098 | 0.52 | 0.648148 | 0.000000 | 0.593750 | 0.673620 | 0.935484 | 1.0 | |
| 1 | 0.1 | 0.237705 | 0.40 | 0.537037 | 0.000000 | 0.320312 | 0.334969 | 0.322581 | 0.0 | |
| 2 | 0.1 | 0.270492 | 0.40 | 0.425926 | 0.406926 | 0.378906 | 0.109202 | 0.000000 | 0.0 | |
| 3 | 0.5 | 0.491803 | 0.56 | 0.000000 | 0.000000 | 0.281250 | 0.150920 | 0.290323 | 0.0 | |
| 4 | 0.3 | 0.180328 | 0.08 | 0.592593 | 0.380952 | 0.492188 | 0.208589 | 0.161290 | 1.0 | |
| 5 | 0.4 | 0.442623 | 0.92 | 0.000000 | 0.000000 | 0.750000 | 0.138650 | 0.290323 | 0.0 | |
| 6 | 1.0 | 0.918033 | 0.56 | 0.000000 | 0.000000 | 0.765625 | 0.563190 | 0.419355 | 1.0 | |
| 7 | 0.5 | 0.901639 | 0.52 | 0.351852 | 0.757576 | 0.289062 | 0.624540 | 0.967742 | 1.0 | |
| 8 | 0.7 | 0.418033 | 0.56 | 0.000000 | 0.000000 | 0.437500 | 0.215951 | 0.322581 | 1.0 | |
| 9 | 0.1 | 0.483607 | 0.48 | 0.555556 | 0.415584 | 0.632812 | 0.553374 | 0.354839 | 1.0 | |
| 10 | 0.8 | 0.352459 | 0.76 | 0.000000 | 0.000000 | 0.664062 | 0.380368 | 0.935484 | 0.0 | |
| 11 | 0.9 | 0.516393 | 0.68 | 0.648148 | 0.000000 | 0.414062 | 0.226994 | 0.258065 | 1.0 | |
| 12 | 1.0 | 0.565574 | 0.48 | 0.481481 | 0.497835 | 0.496094 | 0.155828 | 0.645161 | 1.0 | |
| 13 | 0.7 | 0.745902 | 0.60 | 0.000000 | 0.000000 | 0.820312 | 0.219632 | 0.709677 | 1.0 | |
| 14 | 0.1 | 0.336066 | 0.40 | 0.277778 | 0.606061 | 0.187500 | 0.501840 | 0.032258 | 0.0 | |
| 15 | 0.5 | 0.500000 | 0.92 | 0.000000 | 0.000000 | 0.613281 | 0.317791 | 0.548387 | 0.0 | |
| 16 | 0.3 | 0.262295 | 0.24 | 0.203704 | 0.233766 | 0.250000 | 0.231902 | 0.032258 | 0.0 | |
| 17 | 0.6 | 0.295082 | 0.92 | 0.000000 | 0.000000 | 0.058594 | 0.134969 | 0.225806 | 0.0 | |
| 18 | 1.0 | 0.540984 | 0.64 | 0.574074 | 0.000000 | 0.359375 | 0.532515 | 0.774194 | 0.0 | |
| 19 | 0.9 | 0.377049 | 0.60 | 0.685185 | 0.000000 | 0.566406 | 0.720245 | 0.806452 | 1.0 | |
| 20 | 0.2 | 0.278689 | 0.44 | 0.777778 | 0.000000 | 0.773438 | 0.521472 | 0.193548 | 1.0 | |
| 21 | 0.7 | 0.631148 | 0.76 | 0.000000 | 0.000000 | 0.851562 | 0.758282 | 0.516129 | 0.0 | |
| 22 | 0.7 | 0.409836 | 0.92 | 0.333333 | 0.000000 | 0.167969 | 0.192638 | 0.870968 | 0.0 | |
| 23 | 0.7 | 0.844262 | 0.36 | 0.000000 | 0.000000 | 0.351562 | 0.265031 | 0.612903 | 0.0 | |
| 24 | 0.1 | 0.737705 | 0.20 | 0.000000 | 0.000000 | 0.441406 | 0.596319 | 0.258065 | 0.0 | |
| 25 | 0.2 | 0.122951 | 0.48 | 0.500000 | 0.000000 | 0.375000 | 0.623313 | 0.032258 | 0.0 | |
| 26 | 0.7 | 0.385246 | 0.40 | 0.592593 | 0.000000 | 0.808594 | 0.326380 | 0.322581 | 1.0 | |
| 27 | 0.1 | 0.385246 | 0.68 | 0.203704 | 0.354978 | 0.039062 | 0.506748 | 0.032258 | 0.0 | |
| 28 | 0.1 | 0.368852 | 0.08 | 0.277778 | 0.155844 | 0.226562 | 0.549693 | 0.161290 | 0.0 | |
| 29 | 0.5 | 0.262295 | 0.40 | 0.388889 | 0.099567 | 0.234375 | 0.323926 | 0.290323 | 0.0 | |
| .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| 435 | 0.1 | 0.450820 | 0.96 | 0.000000 | 0.000000 | 0.562500 | 0.229448 | 0.774194 | 0.0 | |
| 436 | 0.4 | 0.459016 | 0.64 | 0.740741 | 0.000000 | 0.820312 | 0.193865 | 0.548387 | 0.0 | |
| 437 | 0.1 | 0.491803 | 0.64 | 0.537037 | 0.779221 | 0.691406 | 0.512883 | 0.129032 | 0.0 | |
| 438 | 0.0 | 0.696721 | 0.76 | 0.481481 | 0.000000 | 0.546875 | 0.435583 | 0.032258 | 0.0 | |
| 439 | 0.2 | 0.975410 | 0.84 | 0.000000 | 0.000000 | 0.175781 | 0.304294 | 0.032258 | 0.0 | |
| 440 | 0.2 | 0.295082 | 0.12 | 0.000000 | 0.000000 | 0.457031 | 0.077301 | 0.032258 | 0.0 | |
| 441 | 0.3 | 0.606557 | 0.64 | 0.425926 | 0.341991 | 0.390625 | 0.300613 | 0.419355 | 1.0 | |

| | | | | | | | | | |
|-----|-----|----------|------|----------|----------|----------|----------|----------|-----|
| 442 | 0.8 | 0.524590 | 0.80 | 0.000000 | 0.000000 | 0.390625 | 0.222086 | 0.032258 | 1.0 |
| 443 | 0.2 | 0.409836 | 0.20 | 0.500000 | 0.714286 | 0.414062 | 0.426994 | 0.032258 | 0.0 |
| 444 | 0.4 | 0.319672 | 0.28 | 0.592593 | 0.000000 | 0.664062 | 0.252761 | 0.225806 | 0.0 |
| 445 | 0.0 | 0.573770 | 0.80 | 0.500000 | 0.519481 | 0.351562 | 0.536196 | 0.000000 | 0.0 |
| 446 | 0.8 | 0.073770 | 0.52 | 0.425926 | 0.000000 | 0.531250 | 0.640491 | 0.677419 | 0.0 |
| 447 | 0.2 | 0.352459 | 0.28 | 0.314815 | 0.692641 | 0.710938 | 0.460123 | 0.000000 | 0.0 |
| 448 | 0.1 | 0.377049 | 0.56 | 0.000000 | 0.000000 | 0.824219 | 0.263804 | 0.677419 | 1.0 |
| 449 | 0.1 | 0.434426 | 0.24 | 0.333333 | 0.502165 | 0.394531 | 0.173006 | 0.032258 | 0.0 |
| 450 | 0.9 | 0.688525 | 0.96 | 0.000000 | 0.000000 | 0.558594 | 0.804908 | 0.774194 | 1.0 |
| 451 | 0.6 | 0.868852 | 0.32 | 0.000000 | 0.000000 | 0.230469 | 0.122699 | 0.935484 | 1.0 |
| 452 | 0.1 | 0.532787 | 0.64 | 0.722222 | 0.320346 | 0.804688 | 0.224540 | 0.225806 | 0.0 |
| 453 | 0.3 | 0.426230 | 0.32 | 0.444444 | 0.000000 | 0.296875 | 0.177914 | 0.129032 | 0.0 |
| 454 | 0.8 | 0.803279 | 0.64 | 0.592593 | 0.000000 | 0.546875 | 0.447853 | 0.774194 | 1.0 |
| 455 | 0.7 | 0.663934 | 0.88 | 0.759259 | 0.000000 | 0.531250 | 0.384049 | 0.580645 | 0.0 |
| 456 | 0.0 | 0.549180 | 0.52 | 0.000000 | 0.000000 | 0.699219 | 0.220859 | 1.000000 | 1.0 |
| 457 | 0.1 | 0.409836 | 0.60 | 0.000000 | 0.000000 | 0.746094 | 0.146012 | 0.161290 | 0.0 |
| 458 | 0.2 | 0.262295 | 0.24 | 0.481481 | 0.069264 | 0.390625 | 0.844172 | 0.032258 | 0.0 |
| 459 | 0.9 | 0.934426 | 0.56 | 0.574074 | 0.000000 | 1.000000 | 0.398773 | 0.709677 | 1.0 |
| 460 | 0.9 | 0.270492 | 0.32 | 0.000000 | 0.000000 | 0.160156 | 0.078528 | 0.387097 | 0.0 |
| 461 | 0.2 | 0.540984 | 0.48 | 0.500000 | 0.000000 | 0.718750 | 0.321472 | 0.193548 | 0.0 |
| 462 | 0.5 | 0.532787 | 0.52 | 0.425926 | 0.484848 | 0.304688 | 0.204908 | 0.290323 | 0.0 |
| 463 | 0.1 | 0.573770 | 0.28 | 0.000000 | 0.000000 | 0.457031 | 0.332515 | 0.838710 | 1.0 |
| 464 | 0.1 | 0.303279 | 0.48 | 0.574074 | 0.000000 | 0.468750 | 0.290798 | 0.064516 | 0.0 |

Zadanie 3:

Accuracy: 0.77

[[106 6]

[26 2]]