Астаппев Олег Лабораторная работа №4

N = 5; λ = 2 ; = 0.666666667 мин. ; = 1.33333334;

В результате моделирования СМО с отказами мы получили:

Количество требований: ;

Потеряно требований: ;

Вероятность отказа (моделированное): ;

Вероятность отказа: ;

Выводы: при моделировании СМО с отказами мы убедились что наши результаты похожи на результаты первой формулы Ерланга.

Наша система, которую мы смоделировали хорошая, т.к. очень низок процент отказов. Всего 3 требования было отклонено (из 390). Но наша система не экономна, т.к. 5-й канал использовался всего 11 раз, 4-й всего 23 раза в то время как загруженность первого канала 114, второго 143, а третьего 96.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | Номер канала |
| 0.501621 | 0.344955 | 2.344955 | 0.459940 | 2.804895 | 0 |
| 0.534639 | 0.313082 | 2.658037 | 0.417442 | 3.075479 | 1 |
| 0.860875 | 0.074903 | 2.732940 | 0.099871 | 2.832811 | 2 |
| 0.013474 | 2.153497 | 4.886437 | 2.871329 | 7.757766 | 0 |
| 0.232378 | 0.729695 | 5.616132 | 0.972927 | 6.589058 | 1 |
| 0.212216 | 0.775075 | 6.391207 | 1.033434 | 7.424641 | 2 |
| 0.668151 | 0.201621 | 6.592827 | 0.268827 | 6.861655 | 1 |
| 0.861602 | 0.074481 | 6.667308 | 0.099308 | 6.766616 | 3 |
| 0.388688 | 0.472489 | 7.139798 | 0.629986 | 7.769783 | 1 |
| 0.494365 | 0.352241 | 7.492038 | 0.469654 | 7.961692 | 2 |
| 0.70565 | 0.174318 | 7.666356 | 0.232424 | 7.898780 | 3 |
| 0.871009 | 0.069051 | 7.735408 | 0.092069 | 7.827476 | 4 |
| 0.200217 | 0.804177 | 8.539584 | 1.072236 | 9.611820 | 0 |
| 0.923906 | 0.039572 | 8.579157 | 0.052763 | 8.631920 | 1 |
| 0.974802 | 0.012760 | 8.591917 | 0.017014 | 8.608931 | 2 |
| 0.611778 | 0.245693 | 8.837610 | 0.327591 | 9.165201 | 1 |
| 0.308042 | 0.588760 | 9.426370 | 0.785013 | 10.211382 | 1 |
| 0.561841 | 0.288268 | 9.714638 | 0.384358 | 10.098996 | 0 |
| 0.322526 | 0.565786 | 10.280424 | 0.754381 | 11.034805 | 0 |
| 0.360876 | 0.509610 | 10.790034 | 0.679481 | 11.469515 | 1 |
| 0.117887 | 1.069014 | 11.859048 | 1.425352 | 13.284401 | 0 |
| 0.457255 | 0.391257 | 12.250306 | 0.521676 | 12.771982 | 1 |
| 0.530499 | 0.316969 | 12.567274 | 0.422625 | 12.989899 | 2 |
| 0.008482 | 2.384905 | 14.952179 | 3.179873 | 18.132051 | 0 |
| 0.91932 | 0.042061 | 14.994239 | 0.056081 | 15.050320 | 1 |
| 0.99537 | 0.002320 | 14.996560 | 0.003094 | 14.999653 | 2 |
| 0.186243 | 0.840352 | 15.836911 | 1.120469 | 16.957380 | 1 |
| 0.695312 | 0.181697 | 16.018608 | 0.242263 | 16.260871 | 2 |
| 0.579028 | 0.273202 | 16.291811 | 0.364270 | 16.656080 | 2 |
| 0.525552 | 0.321653 | 16.613464 | 0.428871 | 17.042334 | 3 |
| 0.633796 | 0.228014 | 16.841478 | 0.304019 | 17.145496 | 2 |
| 0.898228 | 0.053666 | 16.895143 | 0.071554 | 16.966698 | 4 |
| 0.83516 | 0.090066 | 16.985209 | 0.120088 | 17.105297 | 1 |
| 0.669315 | 0.200750 | 17.185960 | 0.267667 | 17.453627 | 1 |
| 0.574433 | 0.277186 | 17.463145 | 0.369581 | 17.832727 | 1 |
| 0.174116 | 0.874017 | 18.337162 | 1.165356 | 19.502518 | 0 |
| 0.843271 | 0.085233 | 18.422396 | 0.113645 | 18.536040 | 1 |
| 0.941099 | 0.030353 | 18.452749 | 0.040471 | 18.493220 | 2 |
| 0.946228 | 0.027636 | 18.480385 | 0.036848 | 18.517233 | 3 |
| 0.588645 | 0.264966 | 18.745351 | 0.353288 | 19.098639 | 1 |
| 0.254561 | 0.684107 | 19.429458 | 0.912143 | 20.341602 | 1 |
| 0.765689 | 0.133490 | 19.562948 | 0.177986 | 19.740934 | 0 |
| 0.632225 | 0.229255 | 19.792203 | 0.305673 | 20.097876 | 0 |
| 0.38576 | 0.476270 | 20.268473 | 0.635027 | 20.903499 | 0 |
| 0.687115 | 0.187627 | 20.456100 | 0.250169 | 20.706269 | 1 |
| 0.55773 | 0.291940 | 20.748040 | 0.389254 | 21.137293 | 1 |
| 0.006362 | 2.528706 | 23.276746 | 3.371608 | 26.648354 | 0 |
| 0.588579 | 0.265022 | 23.541768 | 0.353363 | 23.895131 | 1 |
| 0.434816 | 0.416416 | 23.958184 | 0.555222 | 24.513406 | 1 |
| 0.1392 | 0.985922 | 24.944106 | 1.314562 | 26.258668 | 1 |
| 0.552447 | 0.296699 | 25.240805 | 0.395599 | 25.636404 | 2 |
| 0.868475 | 0.070508 | 25.311313 | 0.094011 | 25.405324 | 3 |
| 0.45452 | 0.394257 | 25.705570 | 0.525676 | 26.231245 | 2 |
| 0.412094 | 0.443252 | 26.148822 | 0.591003 | 26.739824 | 3 |
| 0.375491 | 0.489760 | 26.638582 | 0.653014 | 27.291596 | 1 |
| 0.256117 | 0.681060 | 27.319643 | 0.908081 | 28.227723 | 0 |
| 0.076578 | 1.284723 | 28.604365 | 1.712964 | 30.317329 | 0 |
| 0.279255 | 0.637815 | 29.242180 | 0.850420 | 30.092600 | 1 |
| 0.550796 | 0.298195 | 29.540376 | 0.397594 | 29.937970 | 2 |
| 0.143071 | 0.972207 | 30.512583 | 1.296276 | 31.808859 | 0 |
| 0.778669 | 0.125085 | 30.637667 | 0.166779 | 30.804447 | 1 |
| 0.740836 | 0.149988 | 30.787655 | 0.199984 | 30.987639 | 2 |
| 0.848389 | 0.082208 | 30.869863 | 0.109611 | 30.979474 | 1 |
| 0.78395 | 0.121705 | 30.991569 | 0.162273 | 31.153842 | 1 |
| 0.922567 | 0.040298 | 31.031866 | 0.053730 | 31.085596 | 2 |
| 0.228409 | 0.738309 | 31.770175 | 0.984412 | 32.754586 | 1 |
| 0.692697 | 0.183581 | 31.953756 | 0.244775 | 32.198531 | 0 |
| 0.423997 | 0.429014 | 32.382771 | 0.572019 | 32.954790 | 0 |
| 0.436559 | 0.414416 | 32.797186 | 0.552554 | 33.349741 | 1 |
| 0.251909 | 0.689344 | 33.486530 | 0.919125 | 34.405655 | 0 |
| 0.998852 | 0.000574 | 33.487104 | 0.000766 | 33.487870 | 1 |
| 0.50227 | 0.344309 | 33.831413 | 0.459078 | 34.290492 | 1 |
| 0.26565 | 0.662788 | 34.494201 | 0.883717 | 35.377918 | 0 |
| 0.02837 | 1.781212 | 36.275413 | 2.374949 | 38.650361 | 0 |
| 0.362045 | 0.507993 | 36.783406 | 0.677325 | 37.460730 | 1 |
| 0.714428 | 0.168137 | 36.951542 | 0.224182 | 37.175724 | 2 |
| 0.436704 | 0.414250 | 37.365792 | 0.552333 | 37.918125 | 2 |
| 0.702879 | 0.176285 | 37.542078 | 0.235047 | 37.777125 | 1 |
| 0.596942 | 0.257968 | 37.800045 | 0.343957 | 38.144002 | 1 |
| 0.145709 | 0.963072 | 38.763117 | 1.284096 | 40.047213 | 0 |
| 0.818977 | 0.099850 | 38.862967 | 0.133133 | 38.996100 | 1 |
| 0.62739 | 0.233093 | 39.096060 | 0.310791 | 39.406851 | 1 |
| 0.431627 | 0.420097 | 39.516157 | 0.560129 | 40.076286 | 1 |
| 0.806181 | 0.107723 | 39.623880 | 0.143631 | 39.767512 | 2 |
| 0.564814 | 0.285629 | 39.909510 | 0.380839 | 40.290349 | 2 |
| 0.553231 | 0.295990 | 40.205500 | 0.394653 | 40.600153 | 0 |
| 0.067752 | 1.345951 | 41.551450 | 1.794601 | 43.346051 | 0 |
| 0.365428 | 0.503343 | 42.054793 | 0.671124 | 42.725917 | 1 |
| 0.41516 | 0.439546 | 42.494339 | 0.586061 | 43.080400 | 2 |
| 0.742735 | 0.148708 | 42.643047 | 0.198277 | 42.841324 | 3 |
| 0.366828 | 0.501431 | 43.144478 | 0.668575 | 43.813053 | 1 |
| 0.836972 | 0.088982 | 43.233460 | 0.118643 | 43.352103 | 2 |
| 0.213267 | 0.772605 | 44.006066 | 1.030140 | 45.036206 | 0 |
| 0.239092 | 0.715453 | 44.721519 | 0.953938 | 45.675457 | 1 |
| 0.044264 | 1.558792 | 46.280311 | 2.078389 | 48.358700 | 0 |
| 0.028506 | 1.778820 | 48.059131 | 2.371760 | 50.430892 | 1 |
| 0.227971 | 0.739268 | 48.798400 | 0.985691 | 49.784091 | 0 |
| 0.008995 | 2.355543 | 51.153943 | 3.140724 | 54.294667 | 0 |
| 0.38467 | 0.477685 | 51.631627 | 0.636913 | 52.268540 | 1 |
| 0.99568 | 0.002165 | 51.633792 | 0.002886 | 51.636678 | 2 |
| 0.543952 | 0.304447 | 51.938239 | 0.405930 | 52.344169 | 2 |
| 0.453889 | 0.394951 | 52.333191 | 0.526602 | 52.859792 | 1 |
| 0.610978 | 0.246347 | 52.579538 | 0.328463 | 52.908001 | 2 |
| 0.803354 | 0.109480 | 52.689018 | 0.145973 | 52.834991 | 3 |
| 0.962705 | 0.019004 | 52.708022 | 0.025339 | 52.733361 | 4 |
| 0.913244 | 0.045376 | 52.753398 | 0.060501 | 52.813899 | 4 |
| 0.940995 | 0.030409 | 52.783807 | 0.040545 | 52.824352 | отказ |
| 0.8746 | 0.066994 | 52.850801 | 0.089326 | 52.940127 | 3 |
| 0.813537 | 0.103182 | 52.953983 | 0.137576 | 53.091559 | 1 |
| 0.987554 | 0.006262 | 52.960245 | 0.008349 | 52.968594 | 2 |
| 0.608075 | 0.248729 | 53.208973 | 0.331638 | 53.540611 | 1 |
| 0.208832 | 0.783113 | 53.992086 | 1.044150 | 55.036236 | 1 |
| 0.664882 | 0.204073 | 54.196159 | 0.272097 | 54.468256 | 2 |
| 0.122621 | 1.049328 | 55.245487 | 1.399105 | 56.644592 | 0 |
| 0.186554 | 0.839517 | 56.085005 | 1.119356 | 57.204361 | 1 |
| 0.889031 | 0.058812 | 56.143816 | 0.078415 | 56.222232 | 2 |
| 0.20706 | 0.787373 | 56.931190 | 1.049831 | 57.981021 | 0 |
| 0.563201 | 0.287059 | 57.218249 | 0.382746 | 57.600995 | 1 |
| 0.830851 | 0.092652 | 57.310901 | 0.123537 | 57.434438 | 2 |
| 0.808159 | 0.106498 | 57.417400 | 0.141998 | 57.559397 | 3 |
| 0.411139 | 0.444412 | 57.861812 | 0.592549 | 58.454361 | 1 |
| 0.117283 | 1.071583 | 58.933394 | 1.428777 | 60.362171 | 0 |
| 0.875958 | 0.066219 | 58.999613 | 0.088291 | 59.087904 | 1 |
| 0.235717 | 0.722562 | 59.722174 | 0.963416 | 60.685590 | 1 |
| 0.190694 | 0.828543 | 60.550717 | 1.104723 | 61.655441 | 0 |
| 0.52744 | 0.319860 | 60.870577 | 0.426480 | 61.297057 | 1 |
| 0.542017 | 0.306229 | 61.176806 | 0.408305 | 61.585111 | 2 |
| 0.191494 | 0.826449 | 62.003256 | 1.101933 | 63.105188 | 0 |
| 0.693463 | 0.183029 | 62.186284 | 0.244038 | 62.430322 | 1 |
| 0.145757 | 0.962907 | 63.149191 | 1.283876 | 64.433068 | 0 |
| 0.682327 | 0.191123 | 63.340315 | 0.254831 | 63.595145 | 1 |
| 0.288605 | 0.621348 | 63.961663 | 0.828464 | 64.790127 | 1 |
| 0.475196 | 0.372014 | 64.333677 | 0.496019 | 64.829695 | 2 |
| 0.684119 | 0.189812 | 64.523488 | 0.253082 | 64.776571 | 0 |
| 0.375545 | 0.489688 | 65.013177 | 0.652918 | 65.666095 | 0 |
| 0.377523 | 0.487062 | 65.500239 | 0.649416 | 66.149655 | 1 |
| 0.956854 | 0.022052 | 65.522291 | 0.029403 | 65.551694 | 2 |
| 0.074681 | 1.297265 | 66.819556 | 1.729686 | 68.549242 | 0 |
| 0.85487 | 0.078403 | 66.897959 | 0.104537 | 67.002496 | 1 |
| 0.610411 | 0.246811 | 67.144770 | 0.329082 | 67.473852 | 1 |
| 0.041024 | 1.596799 | 68.741569 | 2.129065 | 70.870634 | 0 |
| 0.812238 | 0.103981 | 68.845550 | 0.138641 | 68.984191 | 1 |
| 0.194523 | 0.818602 | 69.664152 | 1.091470 | 70.755622 | 1 |
| 0.254728 | 0.683779 | 70.347932 | 0.911706 | 71.259638 | 2 |
| 0.001696 | 3.189741 | 73.537673 | 4.252988 | 77.790662 | 0 |
| 0.811362 | 0.104520 | 73.642194 | 0.139361 | 73.781554 | 1 |
| 0.011785 | 2.220464 | 75.862658 | 2.960618 | 78.823276 | 1 |
| 0.060024 | 1.406505 | 77.269163 | 1.875341 | 79.144504 | 2 |
| 0.408432 | 0.447715 | 77.716878 | 0.596953 | 78.313831 | 3 |
| 0.999221 | 0.000390 | 77.717268 | 0.000520 | 77.717787 | 4 |
| 0.655943 | 0.210841 | 77.928108 | 0.281121 | 78.209229 | 0 |
| 0.88253 | 0.062481 | 77.990590 | 0.083308 | 78.073898 | 4 |
| 0.001309 | 3.319246 | 81.309836 | 4.425661 | 85.735497 | 0 |
| 0.318745 | 0.571682 | 81.881517 | 0.762243 | 82.643760 | 1 |
| 0.962408 | 0.019158 | 81.900676 | 0.025545 | 81.926220 | 2 |
| 0.177485 | 0.864435 | 82.765110 | 1.152579 | 83.917690 | 1 |
| 0.198899 | 0.807479 | 83.572590 | 1.076639 | 84.649228 | 2 |
| 0.821353 | 0.098401 | 83.670991 | 0.131202 | 83.802192 | 3 |
| 0.696383 | 0.180928 | 83.851918 | 0.241237 | 84.093155 | 3 |
| 0.273791 | 0.647695 | 84.499614 | 0.863593 | 85.363207 | 1 |
| 0.11383 | 1.086525 | 85.586138 | 1.448699 | 87.034838 | 1 |
| 0.196136 | 0.814473 | 86.400612 | 1.085965 | 87.486576 | 0 |
| 0.197063 | 0.812116 | 87.212727 | 1.082821 | 88.295549 | 1 |
| 0.785962 | 0.120423 | 87.333151 | 0.160565 | 87.493715 | 2 |
| 0.12751 | 1.029780 | 88.362931 | 1.373040 | 89.735971 | 0 |
| 0.23478 | 0.724553 | 89.087484 | 0.966071 | 90.053555 | 1 |
| 0.949638 | 0.025837 | 89.113322 | 0.034450 | 89.147771 | 2 |
| 0.848258 | 0.082285 | 89.195607 | 0.109714 | 89.305320 | 2 |
| 0.705391 | 0.174502 | 89.370108 | 0.232669 | 89.602777 | 2 |
| 0.066182 | 1.357673 | 90.727782 | 1.810231 | 92.538013 | 0 |
| 0.688979 | 0.186272 | 90.914054 | 0.248363 | 91.162417 | 1 |
| 0.903342 | 0.050827 | 90.964881 | 0.067769 | 91.032650 | 2 |
| 0.744469 | 0.147542 | 91.112423 | 0.196723 | 91.309146 | 2 |
| 0.079691 | 1.264799 | 92.377222 | 1.686399 | 94.063621 | 1 |
| 0.22575 | 0.744164 | 93.121386 | 0.992218 | 94.113604 | 0 |
| 0.802909 | 0.109757 | 93.231143 | 0.146343 | 93.377485 | 2 |
| 0.327045 | 0.558829 | 93.789972 | 0.745105 | 94.535077 | 2 |
| 0.02965 | 1.759147 | 95.549118 | 2.345529 | 97.894647 | 0 |
| 0.079202 | 1.267877 | 96.816995 | 1.690502 | 98.507497 | 1 |
| 0.407051 | 0.449408 | 97.266403 | 0.599211 | 97.865615 | 2 |
| 0.701288 | 0.177418 | 97.443822 | 0.236558 | 97.680379 | 3 |
| 0.939554 | 0.031175 | 97.474997 | 0.041567 | 97.516563 | 4 |
| 0.839296 | 0.087596 | 97.562593 | 0.116795 | 97.679387 | 4 |
| 0.893599 | 0.056249 | 97.618842 | 0.074999 | 97.693840 | отказ |
| 0.130032 | 1.019987 | 98.638829 | 1.359983 | 99.998812 | 0 |
| 0.201013 | 0.802193 | 99.441022 | 1.069590 | 100.510612 | 1 |
| 0.1223 | 1.050639 | 100.491661 | 1.400852 | 101.892513 | 0 |
| 0.132176 | 1.011810 | 101.503471 | 1.349081 | 102.852552 | 1 |
| 0.066913 | 1.352181 | 102.855652 | 1.802908 | 104.658560 | 0 |
| 0.26126 | 0.671120 | 103.526772 | 0.894826 | 104.421598 | 1 |
| 0.8148 | 0.102406 | 103.629178 | 0.136542 | 103.765720 | 2 |
| 0.540726 | 0.307421 | 103.936600 | 0.409895 | 104.346495 | 2 |
| 0.223071 | 0.750133 | 104.686732 | 1.000177 | 105.686909 | 0 |
| 0.579624 | 0.272688 | 104.959420 | 0.363584 | 105.323004 | 1 |
| 0.407424 | 0.448950 | 105.408370 | 0.598601 | 106.006971 | 1 |
| 0.229661 | 0.735575 | 106.143946 | 0.980767 | 107.124713 | 0 |
| 0.273196 | 0.648783 | 106.792729 | 0.865044 | 107.657773 | 1 |
| 0.248947 | 0.695258 | 107.487986 | 0.927010 | 108.414997 | 0 |
| 0.738843 | 0.151335 | 107.639321 | 0.201780 | 107.841101 | 2 |
| 0.383924 | 0.478655 | 108.117977 | 0.638207 | 108.756184 | 1 |
| 0.327677 | 0.557863 | 108.675840 | 0.743818 | 109.419658 | 0 |
| 0.902219 | 0.051449 | 108.727289 | 0.068599 | 108.795888 | 2 |
| 0.289626 | 0.619582 | 109.346872 | 0.826110 | 110.172982 | 1 |
| 0.241824 | 0.709773 | 110.056644 | 0.946363 | 111.003008 | 0 |
| 0.532628 | 0.314966 | 110.371610 | 0.419955 | 110.791565 | 1 |
| 0.192821 | 0.822996 | 111.194607 | 1.097329 | 112.291935 | 0 |
| 0.36673 | 0.501565 | 111.696171 | 0.668753 | 112.364924 | 1 |
| 0.638011 | 0.224700 | 111.920871 | 0.299600 | 112.220471 | 2 |
| 0.645795 | 0.218637 | 112.139508 | 0.291515 | 112.431023 | 3 |
| 0.433654 | 0.417754 | 112.557262 | 0.557006 | 113.114268 | 0 |
| 0.337184 | 0.543563 | 113.100825 | 0.724751 | 113.825576 | 1 |
| 0.971894 | 0.014254 | 113.115079 | 0.019006 | 113.134085 | 0 |
| 0.192838 | 0.822952 | 113.938032 | 1.097270 | 115.035302 | 0 |
| 0.55889 | 0.290901 | 114.228933 | 0.387868 | 114.616802 | 1 |
| 0.03507 | 1.675205 | 115.904138 | 2.233606 | 118.137744 | 0 |
| 0.777751 | 0.125674 | 116.029812 | 0.167566 | 116.197378 | 1 |
| 0.050957 | 1.488387 | 117.518199 | 1.984515 | 119.502714 | 1 |
| 0.791497 | 0.116915 | 117.635113 | 0.155886 | 117.791000 | 2 |
| 0.648372 | 0.216645 | 117.851759 | 0.288860 | 118.140619 | 2 |
| 0.179417 | 0.859021 | 118.710780 | 1.145362 | 119.856142 | 0 |
| 0.31284 | 0.581032 | 119.291812 | 0.774709 | 120.066521 | 2 |
| 0.549594 | 0.299288 | 119.591099 | 0.399050 | 119.990150 | 1 |
| 0.125368 | 1.038251 | 120.629350 | 1.384335 | 122.013685 | 0 |
| 0.063872 | 1.375437 | 122.004787 | 1.833916 | 123.838704 | 1 |
| 0.424882 | 0.427972 | 122.432759 | 0.570629 | 123.003389 | 0 |
| 0.572403 | 0.278956 | 122.711715 | 0.371941 | 123.083657 | 2 |
| 0.649717 | 0.215609 | 122.927325 | 0.287479 | 123.214804 | 3 |
| 0.282177 | 0.632610 | 123.559935 | 0.843480 | 124.403415 | 0 |
| 0.941878 | 0.029940 | 123.589875 | 0.039920 | 123.629794 | 2 |
| 0.312778 | 0.581131 | 124.171006 | 0.774841 | 124.945847 | 1 |
| 0.437775 | 0.413025 | 124.584031 | 0.550700 | 125.134731 | 0 |
| 0.875314 | 0.066586 | 124.650617 | 0.088782 | 124.739399 | 2 |
| 0.475014 | 0.372206 | 125.022822 | 0.496274 | 125.519096 | 1 |
| 0.501757 | 0.344820 | 125.367642 | 0.459760 | 125.827402 | 0 |
| 0.127526 | 1.029718 | 126.397360 | 1.372957 | 127.770316 | 0 |
| 0.434402 | 0.416892 | 126.814252 | 0.555857 | 127.370109 | 1 |
| 0.92474 | 0.039121 | 126.853373 | 0.052162 | 126.905535 | 2 |
| 0.072492 | 1.312140 | 128.165513 | 1.749519 | 129.915032 | 0 |
| 0.043816 | 1.563878 | 129.729391 | 2.085171 | 131.814562 | 1 |
| 0.105277 | 1.125580 | 130.854971 | 1.500774 | 132.355745 | 0 |
| 0.199772 | 0.805289 | 131.660260 | 1.073719 | 132.733980 | 2 |
| 0.69417 | 0.182519 | 131.842780 | 0.243359 | 132.086139 | 1 |
| 0.949856 | 0.025722 | 131.868502 | 0.034297 | 131.902799 | 3 |
| 0.97368 | 0.013336 | 131.881838 | 0.017782 | 131.899620 | 4 |
| 0.986048 | 0.007025 | 131.888864 | 0.009367 | 131.898230 | отказ |
| 0.049141 | 1.506531 | 133.395394 | 2.008708 | 135.404102 | 0 |
| 0.669559 | 0.200568 | 133.595962 | 0.267424 | 133.863386 | 1 |
| 0.258759 | 0.675929 | 134.271891 | 0.901239 | 135.173130 | 1 |
| 0.022468 | 1.897832 | 136.169723 | 2.530442 | 138.700165 | 0 |
| 0.152389 | 0.940659 | 137.110382 | 1.254213 | 138.364595 | 1 |
| 0.504824 | 0.341773 | 137.452155 | 0.455697 | 137.907852 | 2 |
| 0.314367 | 0.578597 | 138.030752 | 0.771463 | 138.802215 | 2 |
| 0.662106 | 0.206165 | 138.236917 | 0.274886 | 138.511803 | 3 |
| 0.172849 | 0.877668 | 139.114585 | 1.170225 | 140.284810 | 0 |
| 0.35271 | 0.521055 | 139.635640 | 0.694739 | 140.330379 | 1 |
| 0.323612 | 0.564105 | 140.199745 | 0.752140 | 140.951885 | 2 |
| 0.935531 | 0.033320 | 140.233065 | 0.044427 | 140.277493 | 3 |
| 0.333601 | 0.548905 | 140.781970 | 0.731873 | 141.513843 | 0 |
| 0.030557 | 1.744081 | 142.526051 | 2.325441 | 144.851492 | 0 |
| 0.159008 | 0.919400 | 143.445451 | 1.225867 | 144.671319 | 1 |
| 0.446934 | 0.402672 | 143.848124 | 0.536896 | 144.385020 | 2 |
| 0.638783 | 0.224095 | 144.072219 | 0.298794 | 144.371012 | 3 |
| 0.957877 | 0.021518 | 144.093737 | 0.028691 | 144.122427 | 4 |
| 0.758984 | 0.137887 | 144.231624 | 0.183850 | 144.415474 | 4 |
| 0.07614 | 1.287591 | 145.519215 | 1.716788 | 147.236003 | 0 |
| 0.218254 | 0.761048 | 146.280263 | 1.014731 | 147.294993 | 1 |
| 0.760004 | 0.137216 | 146.417479 | 0.182954 | 146.600433 | 2 |
| 0.854053 | 0.078881 | 146.496360 | 0.105175 | 146.601534 | 3 |
| 0.396487 | 0.462556 | 146.958916 | 0.616741 | 147.575657 | 2 |
| 0.040957 | 1.597616 | 148.556532 | 2.130155 | 150.686687 | 0 |
| 0.776711 | 0.126343 | 148.682875 | 0.168458 | 148.851333 | 1 |
| 0.88349 | 0.061938 | 148.744813 | 0.082584 | 148.827396 | 2 |
| 0.461473 | 0.386666 | 149.131479 | 0.515554 | 149.647033 | 1 |
| 0.769086 | 0.131276 | 149.262755 | 0.175035 | 149.437790 | 2 |
| 0.891736 | 0.057293 | 149.320048 | 0.076390 | 149.396438 | 3 |
| 0.512191 | 0.334529 | 149.654576 | 0.446038 | 150.100615 | 1 |
| 0.70451 | 0.175126 | 149.829703 | 0.233502 | 150.063205 | 2 |
| 0.382454 | 0.480573 | 150.310276 | 0.640765 | 150.951041 | 1 |
| 0.690449 | 0.185207 | 150.495483 | 0.246942 | 150.742425 | 2 |
| 0.270672 | 0.653424 | 151.148907 | 0.871232 | 152.020138 | 0 |
| 0.510904 | 0.335787 | 151.484693 | 0.447716 | 151.932409 | 1 |
| 0.807211 | 0.107085 | 151.591778 | 0.142780 | 151.734559 | 2 |
| 0.616607 | 0.241762 | 151.833540 | 0.322349 | 152.155889 | 2 |
| 0.578719 | 0.273469 | 152.107009 | 0.364625 | 152.471635 | 0 |
| 0.136247 | 0.996643 | 153.103652 | 1.328857 | 154.432509 | 0 |
| 0.431009 | 0.420813 | 153.524465 | 0.561084 | 154.085550 | 1 |
| 0.516253 | 0.330579 | 153.855045 | 0.440772 | 154.295817 | 2 |
| 0.579653 | 0.272663 | 154.127707 | 0.363550 | 154.491258 | 1 |
| 0.186241 | 0.840357 | 154.968064 | 1.120476 | 156.088540 | 0 |
| 0.649146 | 0.216049 | 155.184113 | 0.288065 | 155.472178 | 1 |
| 0.300376 | 0.601360 | 155.785473 | 0.801814 | 156.587287 | 1 |
| 0.439107 | 0.411506 | 156.196979 | 0.548675 | 156.745654 | 0 |
| 0.547802 | 0.300921 | 156.497900 | 0.401228 | 156.899128 | 2 |
| 0.632009 | 0.229426 | 156.727326 | 0.305901 | 157.033227 | 1 |
| 0.560863 | 0.289139 | 157.016465 | 0.385519 | 157.401984 | 0 |
| 0.289306 | 0.620135 | 157.636600 | 0.826847 | 158.463447 | 0 |
| 0.430755 | 0.421108 | 158.057708 | 0.561477 | 158.619185 | 1 |
| 0.470389 | 0.377098 | 158.434806 | 0.502797 | 158.937603 | 2 |
| 0.685084 | 0.189107 | 158.623913 | 0.252143 | 158.876055 | 0 |
| 0.56746 | 0.283293 | 158.907205 | 0.377723 | 159.284929 | 0 |
| 0.965112 | 0.017756 | 158.924961 | 0.023674 | 158.948635 | 1 |
| 0.250158 | 0.692831 | 159.617792 | 0.923775 | 160.541567 | 0 |
| 0.15116 | 0.944708 | 160.562500 | 1.259611 | 161.822111 | 0 |
| 0.959446 | 0.020700 | 160.583200 | 0.027599 | 160.610799 | 1 |
| 0.551041 | 0.297973 | 160.881173 | 0.397297 | 161.278470 | 1 |
| 0.748346 | 0.144945 | 161.026118 | 0.193260 | 161.219378 | 2 |
| 0.035965 | 1.662605 | 162.688722 | 2.216806 | 164.905528 | 0 |
| 0.83883 | 0.087874 | 162.776596 | 0.117165 | 162.893761 | 1 |
| 0.904267 | 0.050315 | 162.826911 | 0.067087 | 162.893998 | 2 |
| 0.724842 | 0.160901 | 162.987812 | 0.214534 | 163.202346 | 1 |
| 0.676055 | 0.195740 | 163.183552 | 0.260987 | 163.444540 | 2 |
| 0.156463 | 0.927468 | 164.111020 | 1.236624 | 165.347644 | 1 |
| 0.993567 | 0.003227 | 164.114247 | 0.004303 | 164.118550 | 2 |
| 0.629943 | 0.231063 | 164.345310 | 0.308084 | 164.653394 | 2 |
| 0.462179 | 0.385902 | 164.731212 | 0.514535 | 165.245747 | 2 |
| 0.31514 | 0.577369 | 165.308581 | 0.769826 | 166.078406 | 0 |
| 0.21878 | 0.759844 | 166.068425 | 1.013126 | 167.081551 | 1 |
| 0.446053 | 0.403659 | 166.472084 | 0.538212 | 167.010296 | 0 |
| 0.041354 | 1.592793 | 168.064877 | 2.123724 | 170.188601 | 0 |
| 0.109668 | 1.105149 | 169.170026 | 1.473532 | 170.643558 | 1 |
| 0.639749 | 0.223340 | 169.393365 | 0.297786 | 169.691152 | 2 |
| 0.220629 | 0.755636 | 170.149002 | 1.007515 | 171.156517 | 2 |
| 0.856007 | 0.077738 | 170.226740 | 0.103651 | 170.330391 | 0 |
| 0.632583 | 0.228972 | 170.455712 | 0.305296 | 170.761008 | 0 |
| 0.520905 | 0.326094 | 170.781806 | 0.434792 | 171.216598 | 0 |
| 0.677148 | 0.194933 | 170.976739 | 0.259910 | 171.236649 | 1 |
| 0.384022 | 0.478528 | 171.455266 | 0.638037 | 172.093303 | 0 |
| 0.331945 | 0.551393 | 172.006659 | 0.735191 | 172.741850 | 1 |
| 0.042664 | 1.577200 | 173.583859 | 2.102933 | 175.686792 | 0 |
| 0.847582 | 0.082684 | 173.666543 | 0.110245 | 173.776788 | 1 |
| 0.88133 | 0.063162 | 173.729705 | 0.084215 | 173.813920 | 2 |
| 0.306467 | 0.591323 | 174.321027 | 0.788430 | 175.109457 | 1 |
| 0.615211 | 0.242895 | 174.563922 | 0.323860 | 174.887782 | 2 |
| 0.299369 | 0.603039 | 175.166961 | 0.804052 | 175.971014 | 1 |
| 0.887891 | 0.059453 | 175.226415 | 0.079271 | 175.305685 | 2 |
| 0.117571 | 1.070356 | 176.296771 | 1.427142 | 177.723913 | 0 |
| 0.236833 | 0.720200 | 177.016971 | 0.960267 | 177.977238 | 1 |
| 0.239587 | 0.714419 | 177.731390 | 0.952559 | 178.683949 | 0 |
| 0.461158 | 0.387007 | 178.118398 | 0.516010 | 178.634407 | 1 |
| 0.455434 | 0.393252 | 178.511650 | 0.524336 | 179.035986 | 2 |
| 0.958208 | 0.021345 | 178.532995 | 0.028460 | 178.561455 | 3 |
| 0.608783 | 0.248147 | 178.781142 | 0.330862 | 179.112004 | 0 |
| 0.887126 | 0.059884 | 178.841026 | 0.079846 | 178.920871 | 1 |
| 0.611192 | 0.246172 | 179.087198 | 0.328229 | 179.415427 | 1 |
| 0.270019 | 0.654631 | 179.741829 | 0.872842 | 180.614671 | 0 |
| 0.429699 | 0.422335 | 180.164165 | 0.563114 | 180.727278 | 1 |
| 0.80792 | 0.106646 | 180.270811 | 0.142195 | 180.413006 | 2 |
| 0.186645 | 0.839273 | 181.110084 | 1.119031 | 182.229115 | 0 |
| 0.962172 | 0.019281 | 181.129365 | 0.025708 | 181.155073 | 1 |
| 0.749199 | 0.144375 | 181.273740 | 0.192500 | 181.466241 | 1 |
| 0.113282 | 1.088937 | 182.362678 | 1.451917 | 183.814595 | 0 |
| 0.500134 | 0.346440 | 182.709118 | 0.461919 | 183.171037 | 1 |
| 0.983383 | 0.008378 | 182.717496 | 0.011171 | 182.728667 | 2 |
| 0.913838 | 0.045051 | 182.762547 | 0.060068 | 182.822615 | 2 |
| 0.030018 | 1.752979 | 184.515526 | 2.337305 | 186.852831 | 0 |
| 0.213409 | 0.772272 | 185.287798 | 1.029697 | 186.317495 | 1 |
| 0.802304 | 0.110134 | 185.397932 | 0.146845 | 185.544777 | 2 |
| 0.588864 | 0.264780 | 185.662712 | 0.353040 | 186.015752 | 2 |
| 0.257379 | 0.678603 | 186.341315 | 0.904804 | 187.246119 | 1 |
| 0.208783 | 0.783230 | 187.124545 | 1.044307 | 188.168851 | 0 |
| 0.451805 | 0.397252 | 187.521797 | 0.529670 | 188.051467 | 1 |
| 0.80662 | 0.107451 | 187.629248 | 0.143268 | 187.772517 | 2 |
| 0.144248 | 0.968111 | 188.597359 | 1.290814 | 189.888173 | 0 |
| 0.319475 | 0.570538 | 189.167897 | 0.760718 | 189.928615 | 1 |
| 0.549354 | 0.299506 | 189.467403 | 0.399341 | 189.866745 | 2 |
| 0.387224 | 0.474376 | 189.941779 | 0.632501 | 190.574281 | 0 |
| 0.431079 | 0.420732 | 190.362511 | 0.560976 | 190.923487 | 1 |
| 0.70151 | 0.177260 | 190.539771 | 0.236347 | 190.776118 | 2 |
| 0.849795 | 0.081380 | 190.621151 | 0.108507 | 190.729658 | 0 |
| 0.797444 | 0.113172 | 190.734323 | 0.150896 | 190.885219 | 0 |
| 0.333551 | 0.548980 | 191.283303 | 0.731973 | 192.015276 | 0 |
| 0.22532 | 0.745117 | 192.028420 | 0.993489 | 193.021909 | 0 |
| 0.578698 | 0.273487 | 192.301907 | 0.364650 | 192.666557 | 1 |
| 0.120975 | 1.056086 | 193.357993 | 1.408114 | 194.766107 | 0 |
| 0.119225 | 1.063371 | 194.421364 | 1.417829 | 195.839193 | 1 |
| 0.0663 | 1.356783 | 195.778147 | 1.809044 | 197.587190 | 0 |
| 0.547016 | 0.301639 | 196.079785 | 0.402185 | 196.481970 | 1 |
| 0.656563 | 0.210368 | 196.290154 | 0.280491 | 196.570645 | 2 |
| 0.188203 | 0.835117 | 197.125271 | 1.113489 | 198.238760 | 1 |
| 0.638854 | 0.224040 | 197.349311 | 0.298720 | 197.648030 | 2 |
| 0.373675 | 0.492184 | 197.841495 | 0.656246 | 198.497741 | 0 |
| 0.348407 | 0.527192 | 198.368687 | 0.702923 | 199.071610 | 1 |
| 0.681557 | 0.191688 | 198.560375 | 0.255584 | 198.815958 | 0 |
| 0.613059 | 0.244647 | 198.805022 | 0.326196 | 199.131218 | 2 |
| 0.577761 | 0.274297 | 199.079319 | 0.365730 | 199.445049 | 0 |
| 0.220871 | 0.755088 | 199.834407 | 1.006784 | 200.841192 | 0 |
| 0.881691 | 0.062957 | 199.897364 | 0.083942 | 199.981307 | 1 |
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| 0.38827 | 0.473027 | 200.742652 | 0.630703 | 201.373354 | 2 |
| 0.92801 | 0.037356 | 200.780008 | 0.049809 | 200.829816 | 1 |