Replication 8 - Matching

Marina Merlo

5 de junho de 2019

1. What is treatment? What is control? What is the outcome?

The treatment is controling a community radio, the control is to own none. The outcome is the vote share in the next election and the probability of winning.

2. Why do Boas and Hidalgo not use an experiment or natural experiment to estimate the effect of possessing a radio licence?

Because the treatment, the radio license, isn't randomly assigned. The treatment is very likely to be part of the incumbent advantage, so their potential outcomes (winning and vote share) are already higher.

3. Conduct and interpret a basic linear regression of the outcome on treatment with no controls.

In this regression, we can say that owning an radio station increases the vote share in 0.45% in the next election.

Table 1:

	Dependent variable:
	pctVV
treat	0.453***
	(0.137)
Constant	2.296***
	(0.063)
Observations	1,455
R^2	0.007
Adjusted R^2	0.007
Residual Std. Error	2.139 (df = 1453)
F Statistic	10.964*** (df = 1; 1453)
Note:	*$p<0.1$; **$p<0.05$; ***$p<0.01$

4. One potential confounding variable is gender (this could affect the chances of an application being approved if there is bias in the Ministry, and the candidate's vote share if there is bias among voters). Is there balance across control and treatment groups on the male variable?

There are more males in the treated group - this difference is statistically significant at 5% level. This means our results in the basic linear regression is biased.

```
##
##  Welch Two Sample t-test
```

```
## 
## data:  treat by male
## t = -2.4175, df = 209.31, p-value = 0.01648
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.13483909 -0.01370713
## sample estimates:
## mean in group 0 mean in group 1
##       0.1474359       0.2217090
```

5. One way of controlling for gender is to add it as a control variable to your regression in Q3.Interpret the result.

When adding the gender variable, the treatment effect is slightly reduced, but there still might be bias in other variables.

Table 2:

	Dependent variable:
	pctVV
treat	0.446***
	(0.137)
male	0.175
	(0.182)
Constant	2.141***
	(0.172)
Observations	1,455
R^2	0.008
Adjusted R^2	0.007
Residual Std. Error	2.139 (df = 1452)
F Statistic	5.945*** (df = 2; 1452)
Note:	*p<0.1; **p<0.05; ***p<0.01

6. An alternative approach is to use matching. Let's try to do one-to-one exact matching on gender manually. There are 311 treated units but 1144 control units in your data, so one-to-one matching means throwing away 833 control units.

(a) Split your data into four differents datasets: treated males, treated females, control males and control females;

```
t_male <- data %>%
  filter(treat == 1 & male == 1)
c_male <- data %>%
  filter(treat == 0 & male == 1)
t_female <- data %>%
  filter(treat == 1 & male == 0)
c_female <- data %>%
  filter(treat == 0 & male == 0)
```

(b) How many treated males do you have? Reduce your dataset of control males so you have only the same

2

number as the number of treated males - since they are exactly matched on gender it doesn't matter which you pick so choose which ones to keep/drop randomly;

```
c_male <- c_male %>%
  sample_n(size = nrow(t_male))
```

(c) Do the same for control females - reduce the number of control females to the same as the number of treated females;

```
c_female <- c_female %>%
  sample_n(size = nrow(t_female))
```

(d) Join your four datasets back together to make one dataset (this will be smaller than the original datasetas we threw some data away);

```
datamatch <- rbind(c_female,t_female,c_male,t_male)
```

(e) Check for balance in gender on the new dataset - it should be perfectly balanced, right?

```
##
##  Welch Two Sample t-test
##
## data:  treat by male
## t = 0, df = 52.294, p-value = 1
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.1552882  0.1552882
## sample estimates:
## mean in group 0 mean in group 1
##             0.5             0.5
```

7. Using the matched dataset from Q6, conduct two analyses of the difference in outcomes between treated and control groups. One using a difference-in-means t-test and one using a simple linear regression. Interpret the results.

The t-test shows a difference between treated and control groups in the outcome variable significant at 5% level. The regressions tells the same story, with a positive and significant effect of 0.405% in the vote share for the candidates controlling a radio community - this coefficient, however, is smaller than the one estimated with the full data, meaning that some of the previous effect was due to inbalance on gender.

```
##
##  Welch Two Sample t-test
##
## data:  pctVV by treat
## t = -2.4208, df = 598.85, p-value = 0.01578
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.74801664 -0.07793365
## sample estimates:
## mean in group 0 mean in group 1
##        2.335829        2.748805
```

Table 3:

	Dependent variable:
	pctVV
treat	0.413**
	(0.171)
Constant	2.336***
	(0.121)
Observations	622
R^2	0.009
Adjusted R^2	0.008
Residual Std. Error	2.127 (df = 620)
F Statistic	5.860** (df = 1; 620)

Note: *p<0.1; **p<0.05; ***p<0.01

8. To match on continuous or multiple variables it's easier to use matchit. Return to your original full dataset and, using nearest neighbour matching, match on the size of the electorate (log.valid.votes). How many units are matched? Why this number? Conduct a simple balance t-test on the size of the electorate for the full dataset and for your matched dataset (you can recover it withmatch.data(output_of_matchit)). How does balance change after matching?

The matching using nearest neighbour method got us 622 units matched, removing 833 that couldn't be matched. This number was limited to our treated units in the full dataset - each treated variable is matched to a single control unit. The t.test for the full dataset shows we had an imbalance in the total votes variable significant at 5% level. The same test with the trimmed data now shows treated and control groups are balanced.

```
match1 <- matchit(treat ~ log.valid.votes, data = data, method = "nearest")

datamatchit1 <- match.data(match1)
```

```
##
##  Welch Two Sample t-test
##
## data:  log.valid.votes by treat
## t = 2.1829, df = 558.4, p-value = 0.02946
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   0.01860591 0.35279203
## sample estimates:
## mean in group 0 mean in group 1
##        10.11921         9.93351


##
##  Welch Two Sample t-test
##
## data:  log.valid.votes by treat
## t = 0.0072001, df = 620, p-value = 0.9943
## alternative hypothesis: true difference in means is not equal to 0
```

4

```
## 95 percent confidence interval:
##  -0.2013492  0.2028311
## sample estimates:
## mean in group 0 mean in group 1
##        9.934251        9.933510
```

9. Let's see which units were dropped by our matching method in Q8. For the full (unmatched) dataset, create a graph of the size of the electorate against the outcome variable. Colour the points according to treatment status. Make this layer semi-transparent if you can. Finally,add another layer to your graph showing the same variables for the matched data. What does this graph tell you about which units were matched?

The graph shows us that all the treated units were matched, including the ones with higher values of the outcome variable without any nearby control units.
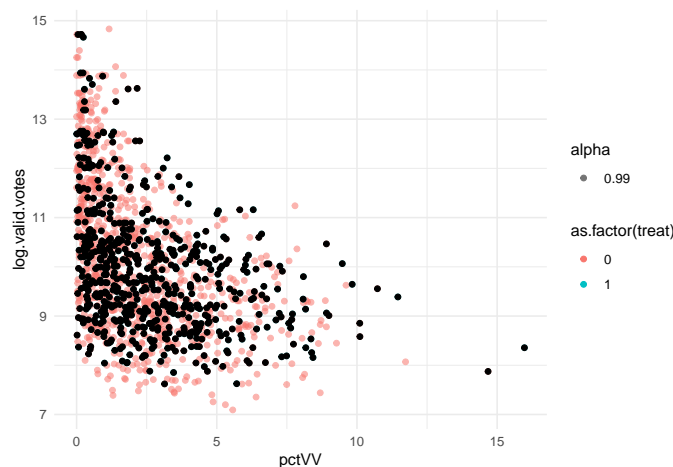
10. Using the matched dataset from Q8, conduct two analyses of the difference in outcomes between treated and control groups. One using a difference-in-means t-test and one using a simple linear regression. Interpret the results.

With the full dataset, we would conclude that the treatment is significant at 1% level, meaning that candidates with a radio community have, on average, 2.74 in vote share agains 2.29 of the candidates without a radio station. However, this effect disappears with the matched data.

```
##
##  Welch Two Sample t-test
##
## data:  pctVV by treat
## t = -3.1184, df = 455.69, p-value = 0.001934
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.7383611 -0.1674980
## sample estimates:
## mean in group 0 mean in group 1
##        2.295875        2.748805
```

```
##
##  Welch Two Sample t-test
##
## data:  pctVV by treat
## t = -1.2694, df = 617.61, p-value = 0.2048
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.5833037  0.1252724
## sample estimates:
## mean in group 0 mean in group 1
##        2.519789        2.748805
```

11. Now let's include all of the matching variables that Boas and Hidalgo use, and use nearest neighbour matching in matchit to construct a matched dataset. Use the list of matching variables provided below to conduct nearest neighbour matching."occBlue.collar, "occEducation, "occGovernment, "occMedia, "occNone, "occOther, "occPolitician, "oc-cWhite.collar, "lat, "long, "ran.prior, "incumbent, "log.valid.votes, "party.prior.pctVV, "prior.pctVV,"elec.year, "match.partyPCB, "match.partyPC.do.B, "match.partyPDT, "match.partyPFL,"match.part "match.partyPMDB, "match.partyPMN, "match.partyPP, "match.partyPPS,"match.partyP "match.partyPSC, "match.partyPSDB, "match.partyPSDC, "match.partyPSL,"match.partyI "match.partyPTB, "match.partyPV, "uf.rs, "uf.sp, "yob, "eduMore.than.Primary..Less.than. "log.total.assets, "pt_pres_1998, "psdb_2000, "hdi_2000, "income_2000,"log.num.apps

```
match2 <- matchit(treat ~  occBlue.collar+  occEducation+
                  occGovernment+  occMedia+  occNone+  occOther+
                  occPolitician+  occWhite.collar+  lat+  long+
                  ran.prior+  incumbent+  log.valid.votes+
                  party.prior.pctVV+  prior.pctVV+ elec.year+
                  match.partyPCB+   match.partyPC.do.B+
                  match.partyPDT+   match.partyPFL+match.partyPL+
                  match.partyPMDB+  match.partyPMN+  match.partyPP+
                  match.partyPPS+match.partyPSB+ match.partyPSC+
                  match.partyPSDB+ match.partyPSDC+ match.partyPSL+
                  match.partyPT+ match.partyPTB+ match.partyPV+
                  uf.rs+ uf.sp+ yob+
                  eduMore.than.Primary..Less.than.Superior+
                  eduSome.Superior.or.More+ log.total.assets+
                  pt_pres_1998+ psdb_2000+ hdi_2000+
                  income_2000+log.num.apps, data = data, method = "nearest")

datamatchit2 <- match.data(match2)
```

12. Using your matched dataset from Q11, conduct a simple linear regression of the outcome on treatment. Interpret the results and compare them to the result in the first column of Table 4 in Boas and Hidalgo (2011) (it probably won't be the same, see the next questions).

The results here a different - we couldn't find a significant effect of owning a radio community in the percentage of votes, while the authors found a positive effect of 0.39 and significant at 5% level.

Table 4:

	Dependent variable:
	pctVV
treat	0.154
	(0.178)
Constant	2.594***
	(0.126)
Observations	622
R^2	0.001
Adjusted R^2	-0.0004
Residual Std. Error	2.220 (df = 620)
F Statistic	0.753 (df = 1; 620)
Note:	*p<0.1; **p<0.05; ***p<0.01

13. With lots of variables it's impossible to get perfect balance on all variables, there are just too many dimensions and too few units. One option to control for 'residual confounding' is to include the matching variables as control variables in our analysis regression. How does this change your estimated treatment effect?

The estimated treatment effect remains statistically insignificant, although now it's higher than the regression in Table 4.

Table 5:

	Dependent variable:
	pctVV
treat	0.181
	(0.142)
Constant	-45.121
	(122.583)
Observations	622
R^2	0.426
Adjusted R^2	0.382
Residual Std. Error	1.745 (df = 577)
F Statistic	9.730*** (df = 44; 577)
Note:	*p<0.1; **p<0.05; ***p<0.01

7

14. One risk with nearest-neighbour matching is that the control unit can still be far away from the treated unit if there are no good matches. Re-run the matching process from Q11 but with a caliper of 0.01 standard deviations, and then re-run the regression from Q12 (nocontrols). How does the number of units and the result change?

Our dataset is even smaller when the caliper is set at 0.01 - now we have 490 units. The main change compared to Table 4 is a higher S.E. for the treatment estimate, but its value is almost the same.

```
match3 <- matchit(treat ~  occBlue.collar+  occEducation+
                  occGovernment+  occMedia+  occNone+  occOther+
                  occPolitician+  occWhite.collar+  lat+  long+
                  ran.prior+  incumbent+  log.valid.votes+
                  party.prior.pctVV+  prior.pctVV+ elec.year+
                  match.partyPCB+   match.partyPC.do.B+
                  match.partyPDT+   match.partyPFL+match.partyPL+
                  match.partyPMDB+  match.partyPMN+  match.partyPP+
                  match.partyPPS+match.partyPSB+ match.partyPSC+
                  match.partyPSDB+ match.partyPSDC+ match.partyPSL+
                  match.partyPT+ match.partyPTB+ match.partyPV+
                  uf.rs+ uf.sp+ yob+
                  eduMore.than.Primary..Less.than.Superior+
                  eduSome.Superior.or.More+ log.total.assets+
                  pt_pres_1998+ psdb_2000+ hdi_2000+
                  income_2000+log.num.apps, data = data, method = "nearest",
              caliper=0.01)

datamatchit3 <- match.data(match3)
```

Table 6:

	Dependent variable:
	pctVV
treat	0.341*
	(0.199)
Constant	2.545***
	(0.141)
Observations	490
R^2	0.006
Adjusted R^2	0.004
Residual Std. Error	2.203 (df = 488)
F Statistic	2.934* (df = 1; 488)
Note:	*p<0.1; **p<0.05; ***p<0.01

8

15. Another problem with nearest neighbour matching is that it is 'greedy' - the first matches might make it harder to match well later. Boas and Hidalgo use genetic matching, which is a complex automated process to try and get the best 'overall' matches for the full dataset.Run genetic matching with the same variables and then run your regression (with no controls)again. Note:Genetic matching might take 10-20 minutes.

Using the matched units selected with the genetic method, our regression results are closer to those found by the authors - a positive effect of 0.42 and significant at 5% level for the owner of the radio station. *[couldn't find how to remove the output of the matching estimation, sorry for the extra pages]*

```
##
##
## Wed Jun 05 21:06:58 2019
## Domains:
##   0.000000e+00    <=  X1   <=     1.000000e+03
##   0.000000e+00    <=  X2   <=     1.000000e+03
##   0.000000e+00    <=  X3   <=     1.000000e+03
##   0.000000e+00    <=  X4   <=     1.000000e+03
##   0.000000e+00    <=  X5   <=     1.000000e+03
##   0.000000e+00    <=  X6   <=     1.000000e+03
##   0.000000e+00    <=  X7   <=     1.000000e+03
##   0.000000e+00    <=  X8   <=     1.000000e+03
##   0.000000e+00    <=  X9   <=     1.000000e+03
##   0.000000e+00    <=  X10  <=     1.000000e+03
##   0.000000e+00    <=  X11  <=     1.000000e+03
##   0.000000e+00    <=  X12  <=     1.000000e+03
##   0.000000e+00    <=  X13  <=     1.000000e+03
##   0.000000e+00    <=  X14  <=     1.000000e+03
##   0.000000e+00    <=  X15  <=     1.000000e+03
##   0.000000e+00    <=  X16  <=     1.000000e+03
##   0.000000e+00    <=  X17  <=     1.000000e+03
##   0.000000e+00    <=  X18  <=     1.000000e+03
##   0.000000e+00    <=  X19  <=     1.000000e+03
##   0.000000e+00    <=  X20  <=     1.000000e+03
##   0.000000e+00    <=  X21  <=     1.000000e+03
##   0.000000e+00    <=  X22  <=     1.000000e+03
##   0.000000e+00    <=  X23  <=     1.000000e+03
##   0.000000e+00    <=  X24  <=     1.000000e+03
##   0.000000e+00    <=  X25  <=     1.000000e+03
##   0.000000e+00    <=  X26  <=     1.000000e+03
##   0.000000e+00    <=  X27  <=     1.000000e+03
##   0.000000e+00    <=  X28  <=     1.000000e+03
##   0.000000e+00    <=  X29  <=     1.000000e+03
##   0.000000e+00    <=  X30  <=     1.000000e+03
##   0.000000e+00    <=  X31  <=     1.000000e+03
##   0.000000e+00    <=  X32  <=     1.000000e+03
##   0.000000e+00    <=  X33  <=     1.000000e+03
##   0.000000e+00    <=  X34  <=     1.000000e+03
##   0.000000e+00    <=  X35  <=     1.000000e+03
##   0.000000e+00    <=  X36  <=     1.000000e+03
##   0.000000e+00    <=  X37  <=     1.000000e+03
##   0.000000e+00    <=  X38  <=     1.000000e+03
```

```
##   0.000000e+00    <=   X39   <=    1.000000e+03
##   0.000000e+00    <=   X40   <=    1.000000e+03
##   0.000000e+00    <=   X41   <=    1.000000e+03
##   0.000000e+00    <=   X42   <=    1.000000e+03
##   0.000000e+00    <=   X43   <=    1.000000e+03
##   0.000000e+00    <=   X44   <=    1.000000e+03
##   0.000000e+00    <=   X45   <=    1.000000e+03
##
## Data Type: Floating Point
## Operators (code number, name, population)
##   (1) Cloning.......................... 15
##   (2) Uniform Mutation.................. 12
##   (3) Boundary Mutation................ 12
##   (4) Non-Uniform Mutation............. 12
##   (5) Polytope Crossover............... 12
##   (6) Simple Crossover................. 12
##   (7) Whole Non-Uniform Mutation....... 12
##   (8) Heuristic Crossover.............. 12
##   (9) Local-Minimum Crossover.......... 0
##
## SOFT Maximum Number of Generations: 100
## Maximum Nonchanging Generations: 4
## Population size        : 100
## Convergence Tolerance: 1.000000e-03
##
## Not Using the BFGS Derivative Based Optimizer on the Best Individual Each Generation.
## Not Checking Gradients before Stopping.
## Using Out of Bounds Individuals.
##
## Maximization Problem.
## GENERATION: 0 (initializing the population)
## Lexical Fit..... 4.840572e-14  3.136970e-08  2.754254e-05  5.397690e-04  5.397690e-04  1.064940e-03
## #unique......... 100, #Total UniqueCount: 100
## var 1:
## best............ 9.157525e+02
## mean............ 4.685202e+02
## variance........ 8.253417e+04
## var 2:
## best............ 6.252681e+02
## mean............ 4.932169e+02
## variance........ 8.180819e+04
## var 3:
## best............ 9.086391e+02
## mean............ 4.997848e+02
## variance........ 8.694898e+04
## var 4:
## best............ 3.106055e+02
## mean............ 4.898202e+02
## variance........ 8.390545e+04
## var 5:
## best............ 5.275081e+02
## mean............ 4.536814e+02
## variance........ 8.349687e+04
## var 6:
```

```
## best............ 5.009612e+02
## mean............ 5.053608e+02
## variance........ 8.775968e+04
## var 7:
## best............ 8.795406e+02
## mean............ 4.945197e+02
## variance........ 8.051650e+04
## var 8:
## best............ 9.129328e+02
## mean............ 5.557360e+02
## variance........ 8.085227e+04
## var 9:
## best............ 1.908465e+01
## mean............ 5.574915e+02
## variance........ 8.913910e+04
## var 10:
## best............ 4.609773e+02
## mean............ 5.061495e+02
## variance........ 7.967931e+04
## var 11:
## best............ 7.680843e+02
## mean............ 5.169704e+02
## variance........ 9.052824e+04
## var 12:
## best............ 8.802343e+02
## mean............ 4.781501e+02
## variance........ 7.423498e+04
## var 13:
## best............ 9.898330e+02
## mean............ 5.016997e+02
## variance........ 8.493175e+04
## var 14:
## best............ 4.097039e+02
## mean............ 5.142045e+02
## variance........ 8.464386e+04
## var 15:
## best............ 1.212329e+02
## mean............ 4.684427e+02
## variance........ 8.002572e+04
## var 16:
## best............ 4.599899e+02
## mean............ 5.144085e+02
## variance........ 6.960487e+04
## var 17:
## best............ 7.777276e+02
## mean............ 4.951432e+02
## variance........ 7.616623e+04
## var 18:
## best............ 8.524849e+02
## mean............ 4.927268e+02
## variance........ 8.586109e+04
## var 19:
## best............ 3.142492e+02
## mean............ 5.190348e+02
```

```
## variance........ 7.856956e+04
## var 20:
## best........... 7.183121e+02
## mean........... 5.182665e+02
## variance........ 8.756815e+04
## var 21:
## best........... 8.882693e+02
## mean........... 4.803548e+02
## variance........ 6.460077e+04
## var 22:
## best........... 9.685443e+02
## mean........... 5.292066e+02
## variance........ 9.649028e+04
## var 23:
## best........... 1.199528e+02
## mean........... 4.716530e+02
## variance........ 6.829197e+04
## var 24:
## best........... 8.738679e+02
## mean........... 4.670161e+02
## variance........ 8.228941e+04
## var 25:
## best........... 8.293454e+01
## mean........... 4.704571e+02
## variance........ 9.231983e+04
## var 26:
## best........... 4.719789e+02
## mean........... 5.098467e+02
## variance........ 7.673731e+04
## var 27:
## best........... 9.403132e+02
## mean........... 5.124856e+02
## variance........ 8.403951e+04
## var 28:
## best........... 4.372535e+02
## mean........... 4.948387e+02
## variance........ 9.676001e+04
## var 29:
## best........... 9.480691e+02
## mean........... 5.109114e+02
## variance........ 8.022971e+04
## var 30:
## best........... 2.242920e+02
## mean........... 4.716088e+02
## variance........ 8.035251e+04
## var 31:
## best........... 2.652830e+02
## mean........... 5.174164e+02
## variance........ 8.700463e+04
## var 32:
## best........... 4.183890e+02
## mean........... 4.593708e+02
## variance........ 6.722040e+04
## var 33:
```

```
## best............ 8.726932e+02
## mean............ 5.391529e+02
## variance........ 8.399086e+04
## var 34:
## best............ 4.781214e+02
## mean............ 5.103103e+02
## variance........ 8.226203e+04
## var 35:
## best............ 4.374692e+02
## mean............ 5.481421e+02
## variance........ 7.423729e+04
## var 36:
## best............ 4.814227e+02
## mean............ 4.411797e+02
## variance........ 9.155694e+04
## var 37:
## best............ 9.623621e+02
## mean............ 5.150692e+02
## variance........ 6.833361e+04
## var 38:
## best............ 6.887654e+02
## mean............ 4.857820e+02
## variance........ 8.012488e+04
## var 39:
## best............ 9.874180e+02
## mean............ 4.758997e+02
## variance........ 8.711761e+04
## var 40:
## best............ 8.409507e+02
## mean............ 4.880168e+02
## variance........ 8.524596e+04
## var 41:
## best............ 8.261398e+01
## mean............ 4.943243e+02
## variance........ 9.323250e+04
## var 42:
## best............ 4.394318e+02
## mean............ 4.919783e+02
## variance........ 9.018728e+04
## var 43:
## best............ 4.799570e+02
## mean............ 4.864600e+02
## variance........ 7.550769e+04
## var 44:
## best............ 9.820195e+02
## mean............ 4.728979e+02
## variance........ 9.881169e+04
## var 45:
## best............ 9.125135e+02
## mean............ 5.261277e+02
## variance........ 8.015397e+04
##
## GENERATION: 1
## Lexical Fit..... 2.959410e-12  4.228143e-09  1.193392e-04  1.645441e-03  2.248251e-03  1.105689e-02
```

```
## #unique......... 74, #Total UniqueCount: 174
## var 1:
## best............ 8.473910e+02
## mean............ 7.821659e+02
## variance........ 2.562475e+04
## var 2:
## best............ 1.388429e+02
## mean............ 4.316382e+02
## variance........ 5.817843e+04
## var 3:
## best............ 5.206629e+02
## mean............ 6.401898e+02
## variance........ 5.585475e+04
## var 4:
## best............ 5.414736e+02
## mean............ 4.622048e+02
## variance........ 5.095264e+04
## var 5:
## best............ 1.671500e+02
## mean............ 3.957429e+02
## variance........ 5.042076e+04
## var 6:
## best............ 1.873017e+02
## mean............ 4.192664e+02
## variance........ 4.792603e+04
## var 7:
## best............ 1.671523e+02
## mean............ 5.645939e+02
## variance........ 7.908916e+04
## var 8:
## best............ 5.316644e+02
## mean............ 7.004736e+02
## variance........ 5.393624e+04
## var 9:
## best............ 8.410554e+02
## mean............ 4.579109e+02
## variance........ 1.177507e+05
## var 10:
## best............ 3.786899e+02
## mean............ 4.243568e+02
## variance........ 3.824994e+04
## var 11:
## best............ 7.878851e+02
## mean............ 6.238929e+02
## variance........ 6.196300e+04
## var 12:
## best............ 6.615691e+02
## mean............ 6.674312e+02
## variance........ 5.614038e+04
## var 13:
## best............ 1.164829e+02
## mean............ 5.387334e+02
## variance........ 1.311094e+05
## var 14:
```

```
## best............ 5.599718e+02
## mean............ 4.400792e+02
## variance........ 4.067222e+04
## var 15:
## best............ 1.498743e+02
## mean............ 3.352386e+02
## variance........ 8.461953e+04
## var 16:
## best............ 1.538766e+02
## mean............ 4.071345e+02
## variance........ 4.603684e+04
## var 17:
## best............ 8.997392e+02
## mean............ 7.023226e+02
## variance........ 5.255165e+04
## var 18:
## best............ 9.313124e+02
## mean............ 7.173693e+02
## variance........ 7.627083e+04
## var 19:
## best............ 8.417520e+02
## mean............ 5.738475e+02
## variance........ 5.509311e+04
## var 20:
## best............ 1.385053e+01
## mean............ 4.584187e+02
## variance........ 9.659250e+04
## var 21:
## best............ 6.517893e+02
## mean............ 6.120698e+02
## variance........ 5.761261e+04
## var 22:
## best............ 8.515415e+02
## mean............ 7.227057e+02
## variance........ 8.290317e+04
## var 23:
## best............ 4.019823e+02
## mean............ 3.681610e+02
## variance........ 4.891761e+04
## var 24:
## best............ 1.885077e+01
## mean............ 5.330635e+02
## variance........ 1.169568e+05
## var 25:
## best............ 9.863778e+02
## mean............ 4.582804e+02
## variance........ 1.439849e+05
## var 26:
## best............ 4.086403e+02
## mean............ 4.308664e+02
## variance........ 3.360509e+04
## var 27:
## best............ 4.406212e+02
## mean............ 6.037815e+02
```

```
## variance........ 6.762238e+04
## var 28:
## best........... 2.427430e+02
## mean........... 4.680804e+02
## variance........ 6.859431e+04
## var 29:
## best........... 4.026731e+02
## mean........... 5.950596e+02
## variance........ 7.009338e+04
## var 30:
## best........... 8.711957e+02
## mean........... 4.752536e+02
## variance........ 7.496156e+04
## var 31:
## best........... 4.702200e+02
## mean........... 4.491649e+02
## variance........ 5.991749e+04
## var 32:
## best........... 1.845029e+02
## mean........... 3.978659e+02
## variance........ 4.077423e+04
## var 33:
## best........... 3.813922e+02
## mean........... 5.876538e+02
## variance........ 6.121022e+04
## var 34:
## best........... 1.033002e+02
## mean........... 3.798965e+02
## variance........ 5.065427e+04
## var 35:
## best........... 8.145935e+02
## mean........... 5.791248e+02
## variance........ 4.918762e+04
## var 36:
## best........... 4.503958e+01
## mean........... 3.099819e+02
## variance........ 4.957126e+04
## var 37:
## best........... 3.732898e+02
## mean........... 5.986682e+02
## variance........ 7.903358e+04
## var 38:
## best........... 3.875059e+02
## mean........... 4.860390e+02
## variance........ 8.446360e+04
## var 39:
## best........... 4.827351e+02
## mean........... 7.541864e+02
## variance........ 7.102198e+04
## var 40:
## best........... 2.896857e+02
## mean........... 5.493008e+02
## variance........ 7.901345e+04
## var 41:
```

```
## best............ 1.782865e+02
## mean............ 2.652275e+02
## variance........ 5.122924e+04
## var 42:
## best............ 2.456514e+02
## mean............ 4.898765e+02
## variance........ 3.799910e+04
## var 43:
## best............ 6.138026e+02
## mean............ 5.521636e+02
## variance........ 4.518695e+04
## var 44:
## best............ 9.113682e+02
## mean............ 7.066626e+02
## variance........ 7.729468e+04
## var 45:
## best............ 7.395821e+02
## mean............ 7.927939e+02
## variance........ 2.898253e+04
##
## GENERATION: 2
## Lexical Fit..... 4.447553e-12  9.624767e-09  1.193392e-04  1.814316e-03  2.218972e-03  6.379196e-03
## #unique........ 73, #Total UniqueCount: 247
## var 1:
## best............ 8.473910e+02
## mean............ 8.739335e+02
## variance........ 9.416513e+03
## var 2:
## best............ 1.388429e+02
## mean............ 4.220929e+02
## variance........ 5.051583e+04
## var 3:
## best............ 5.206629e+02
## mean............ 7.357750e+02
## variance........ 3.634463e+04
## var 4:
## best............ 5.414736e+02
## mean............ 4.073927e+02
## variance........ 1.558287e+04
## var 5:
## best............ 1.671500e+02
## mean............ 3.811236e+02
## variance........ 3.060096e+04
## var 6:
## best............ 1.873017e+02
## mean............ 3.609756e+02
## variance........ 2.011662e+04
## var 7:
## best............ 1.671523e+02
## mean............ 5.701640e+02
## variance........ 1.061108e+05
## var 8:
## best............ 5.316644e+02
## mean............ 7.439089e+02
```

```
## variance........ 3.450722e+04
## var 9:
## best........... 8.410554e+02
## mean........... 3.995930e+02
## variance........ 1.315740e+05
## var 10:
## best........... 3.786899e+02
## mean........... 4.288294e+02
## variance........ 3.838275e+03
## var 11:
## best........... 7.878851e+02
## mean........... 7.393870e+02
## variance........ 1.610458e+04
## var 12:
## best........... 6.615691e+02
## mean........... 7.780628e+02
## variance........ 1.109503e+04
## var 13:
## best........... 1.164829e+02
## mean........... 6.023888e+02
## variance........ 1.573811e+05
## var 14:
## best........... 5.599718e+02
## mean........... 4.846552e+02
## variance........ 1.025766e+04
## var 15:
## best........... 1.498743e+02
## mean........... 1.572515e+02
## variance........ 1.108862e+04
## var 16:
## best........... 1.538766e+02
## mean........... 3.285753e+02
## variance........ 1.887210e+04
## var 17:
## best........... 8.997392e+02
## mean........... 8.125067e+02
## variance........ 1.069905e+04
## var 18:
## best........... 9.313124e+02
## mean........... 8.457730e+02
## variance........ 1.909657e+04
## var 19:
## best........... 8.417520e+02
## mean........... 5.281028e+02
## variance........ 5.912045e+04
## var 20:
## best........... 1.385053e+01
## mean........... 4.416790e+02
## variance........ 1.028547e+05
## var 21:
## best........... 6.517893e+02
## mean........... 7.673058e+02
## variance........ 2.096840e+04
## var 22:
```

```
## best............ 8.515415e+02
## mean............ 8.835012e+02
## variance........ 1.743008e+04
## var 23:
## best............ 4.019823e+02
## mean............ 2.383772e+02
## variance........ 1.934789e+04
## var 24:
## best............ 1.885077e+01
## mean............ 5.158949e+02
## variance........ 1.329044e+05
## var 25:
## best............ 9.863778e+02
## mean............ 4.573152e+02
## variance........ 1.471330e+05
## var 26:
## best............ 4.086403e+02
## mean............ 4.495828e+02
## variance........ 1.060406e+04
## var 27:
## best............ 4.406212e+02
## mean............ 7.102683e+02
## variance........ 5.255334e+04
## var 28:
## best............ 2.427430e+02
## mean............ 3.685483e+02
## variance........ 1.718895e+04
## var 29:
## best............ 4.026731e+02
## mean............ 7.172686e+02
## variance........ 5.670439e+04
## var 30:
## best............ 8.711957e+02
## mean............ 5.067648e+02
## variance........ 8.002559e+04
## var 31:
## best............ 4.702200e+02
## mean............ 3.573457e+02
## variance........ 1.571010e+04
## var 32:
## best............ 1.845029e+02
## mean............ 3.264947e+02
## variance........ 1.569987e+04
## var 33:
## best............ 3.813922e+02
## mean............ 6.543932e+02
## variance........ 4.797866e+04
## var 34:
## best............ 1.033002e+02
## mean............ 3.297338e+02
## variance........ 3.382110e+04
## var 35:
## best............ 8.145935e+02
## mean............ 5.928096e+02
```

```
## variance........ 3.119244e+04
## var 36:
## best............ 4.503958e+01
## mean............ 2.995850e+02
## variance........ 4.182062e+04
## var 37:
## best............ 4.242729e+02
## mean............ 7.042296e+02
## variance........ 6.982929e+04
## var 38:
## best............ 3.875059e+02
## mean............ 5.163741e+02
## variance........ 4.612774e+04
## var 39:
## best............ 4.827351e+02
## mean............ 8.001225e+02
## variance........ 4.427018e+04
## var 40:
## best............ 2.896857e+02
## mean............ 5.883277e+02
## variance........ 7.113080e+04
## var 41:
## best............ 1.782865e+02
## mean............ 1.618084e+02
## variance........ 2.111021e+04
## var 42:
## best............ 2.456514e+02
## mean............ 4.011496e+02
## variance........ 1.526826e+04
## var 43:
## best............ 6.138026e+02
## mean............ 6.331403e+02
## variance........ 1.736671e+04
## var 44:
## best............ 9.113682e+02
## mean............ 8.224058e+02
## variance........ 2.938005e+04
## var 45:
## best............ 7.395821e+02
## mean............ 8.324265e+02
## variance........ 4.853418e+03
##
## GENERATION: 3
## Lexical Fit..... 6.893330e-11  2.204313e-07  2.390095e-04  2.127839e-03  1.031191e-02  1.166051e-02
## #unique......... 64, #Total UniqueCount: 311
## var 1:
## best............ 8.473895e+02
## mean............ 8.512779e+02
## variance........ 1.207337e+03
## var 2:
## best............ 1.098012e+02
## mean............ 1.704199e+02
## variance........ 2.270261e+04
## var 3:
```

```
## best............ 6.083426e+02
## mean............ 5.952015e+02
## variance........ 2.165625e+04
## var 4:
## best............ 5.414786e+02
## mean............ 5.208074e+02
## variance........ 9.218125e+03
## var 5:
## best............ 1.262890e+02
## mean............ 1.777647e+02
## variance........ 1.587881e+04
## var 6:
## best............ 1.872951e+02
## mean............ 2.149533e+02
## variance........ 8.778128e+03
## var 7:
## best............ 1.671373e+02
## mean............ 2.361026e+02
## variance........ 3.945953e+04
## var 8:
## best............ 6.502345e+02
## mean............ 6.338766e+02
## variance........ 2.217284e+04
## var 9:
## best............ 8.410728e+02
## mean............ 7.519498e+02
## variance........ 5.257396e+04
## var 10:
## best............ 3.786881e+02
## mean............ 3.962268e+02
## variance........ 9.411259e+03
## var 11:
## best............ 7.878854e+02
## mean............ 7.617760e+02
## variance........ 1.220213e+04
## var 12:
## best............ 6.184483e+02
## mean............ 6.370891e+02
## variance........ 9.590139e+03
## var 13:
## best............ 1.164644e+02
## mean............ 1.914837e+02
## variance........ 5.237010e+04
## var 14:
## best............ 5.599750e+02
## mean............ 5.430436e+02
## variance........ 5.384779e+03
## var 15:
## best............ 1.498751e+02
## mean............ 1.652075e+02
## variance........ 7.352000e+03
## var 16:
## best............ 1.538701e+02
## mean............ 1.960065e+02
```

```
## variance........ 1.200300e+04
## var 17:
## best........... 8.997418e+02
## mean........... 8.714836e+02
## variance........ 1.059911e+04
## var 18:
## best........... 9.390031e+02
## mean........... 9.036124e+02
## variance........ 1.475626e+04
## var 19:
## best........... 8.417632e+02
## mean........... 7.791712e+02
## variance........ 2.708091e+04
## var 20:
## best........... 1.383571e+01
## mean........... 9.436418e+01
## variance........ 4.199726e+04
## var 21:
## best........... 4.731947e+02
## mean........... 5.496868e+02
## variance........ 4.250593e+04
## var 22:
## best........... 8.515390e+02
## mean........... 8.321323e+02
## variance........ 1.143747e+04
## var 23:
## best........... 4.019884e+02
## mean........... 3.766542e+02
## variance........ 6.534311e+03
## var 24:
## best........... 1.883276e+01
## mean........... 9.635350e+01
## variance........ 5.163027e+04
## var 25:
## best........... 8.643513e+02
## mean........... 8.231720e+02
## variance........ 6.093770e+04
## var 26:
## best........... 2.904164e+02
## mean........... 3.434986e+02
## variance........ 2.046765e+04
## var 27:
## best........... 4.406107e+02
## mean........... 4.793566e+02
## variance........ 2.184738e+04
## var 28:
## best........... 2.427390e+02
## mean........... 2.694505e+02
## variance........ 1.049493e+04
## var 29:
## best........... 4.026616e+02
## mean........... 4.463365e+02
## variance........ 2.487822e+04
## var 30:
```

```
## best............ 8.712094e+02
## mean............ 7.986887e+02
## variance........ 3.548677e+04
## var 31:
## best............ 4.702244e+02
## mean............ 4.664332e+02
## variance........ 6.802814e+03
## var 32:
## best............ 1.844981e+02
## mean............ 2.316848e+02
## variance........ 1.318128e+04
## var 33:
## best............ 3.813818e+02
## mean............ 4.362721e+02
## variance........ 2.256558e+04
## var 34:
## best............ 1.032922e+02
## mean............ 1.497480e+02
## variance........ 1.600526e+04
## var 35:
## best............ 7.774782e+02
## mean............ 7.442649e+02
## variance........ 1.470181e+04
## var 36:
## best............ 4.503034e+01
## mean............ 9.409172e+01
## variance........ 1.836261e+04
## var 37:
## best............ 3.874887e+02
## mean............ 4.406841e+02
## variance........ 2.957036e+04
## var 38:
## best............ 3.874995e+02
## mean............ 4.119802e+02
## variance........ 9.157670e+03
## var 39:
## best............ 4.827244e+02
## mean............ 5.327584e+02
## variance........ 2.410463e+04
## var 40:
## best............ 4.580223e+02
## mean............ 4.588168e+02
## variance........ 4.637619e+04
## var 41:
## best............ 1.782886e+02
## mean............ 1.993890e+02
## variance........ 1.128522e+04
## var 42:
## best............ 2.023794e+02
## mean............ 2.528640e+02
## variance........ 1.297981e+04
## var 43:
## best............ 6.138054e+02
## mean............ 6.142822e+02
```

```
## variance........ 7.156848e+03
## var 44:
## best............ 9.113667e+02
## mean............ 8.856798e+02
## variance........ 6.289699e+03
## var 45:
## best............ 7.395785e+02
## mean............ 7.409711e+02
## variance........ 6.256765e+03
##
## GENERATION: 4
## Lexical Fit..... 2.853843e-09  4.649014e-09  6.379196e-03  6.379196e-03  8.986808e-03  9.662391e-03
## #unique......... 75, #Total UniqueCount: 386
## var 1:
## best............ 9.615169e+02
## mean............ 8.449256e+02
## variance........ 8.046871e+03
## var 2:
## best............ 1.101154e+02
## mean............ 1.394710e+02
## variance........ 1.083555e+04
## var 3:
## best............ 5.140653e+02
## mean............ 5.754523e+02
## variance........ 7.077314e+03
## var 4:
## best............ 9.416877e+02
## mean............ 6.247828e+02
## variance........ 2.096643e+04
## var 5:
## best............ 4.879817e+02
## mean............ 1.967881e+02
## variance........ 1.722082e+04
## var 6:
## best............ 1.278623e+02
## mean............ 1.953587e+02
## variance........ 7.872303e+03
## var 7:
## best............ 1.996137e+02
## mean............ 1.874075e+02
## variance........ 7.030545e+03
## var 8:
## best............ 5.873719e+02
## mean............ 6.114581e+02
## variance........ 9.148722e+03
## var 9:
## best............ 3.095434e+02
## mean............ 7.386672e+02
## variance........ 3.132877e+04
## var 10:
## best............ 4.144580e+02
## mean............ 4.172300e+02
## variance........ 1.274457e+04
## var 11:
```

```
## best............ 8.353860e+02
## mean............ 7.747414e+02
## variance........ 6.762787e+03
## var 12:
## best............ 6.407883e+02
## mean............ 6.197901e+02
## variance........ 3.025550e+03
## var 13:
## best............ 1.024418e+02
## mean............ 1.381831e+02
## variance........ 1.065769e+04
## var 14:
## best............ 3.584847e+02
## mean............ 5.191252e+02
## variance........ 1.069954e+04
## var 15:
## best............ 2.331778e+02
## mean............ 1.764979e+02
## variance........ 7.699279e+03
## var 16:
## best............ 9.393357e+01
## mean............ 1.810208e+02
## variance........ 1.192926e+04
## var 17:
## best............ 9.761627e+02
## mean............ 8.913215e+02
## variance........ 7.801318e+03
## var 18:
## best............ 9.065966e+02
## mean............ 9.123785e+02
## variance........ 1.070465e+04
## var 19:
## best............ 2.745208e+02
## mean............ 7.215392e+02
## variance........ 3.910216e+04
## var 20:
## best............ 1.263170e+01
## mean............ 2.450516e+01
## variance........ 1.920595e+03
## var 21:
## best............ 4.373546e+02
## mean............ 4.885228e+02
## variance........ 1.487591e+04
## var 22:
## best............ 8.384156e+02
## mean............ 8.215389e+02
## variance........ 1.055948e+04
## var 23:
## best............ 4.562825e+02
## mean............ 4.153539e+02
## variance........ 4.357647e+03
## var 24:
## best............ 1.827961e+01
## mean............ 4.463221e+01
```

```
## variance........ 6.946517e+03
## var 25:
## best........... 4.981351e+02
## mean........... 7.957459e+02
## variance........ 2.736769e+04
## var 26:
## best........... 2.905035e+02
## mean........... 3.063346e+02
## variance........ 8.651696e+03
## var 27:
## best........... 3.606507e+02
## mean........... 4.278834e+02
## variance........ 5.156581e+03
## var 28:
## best........... 2.370096e+02
## mean........... 2.639720e+02
## variance........ 8.389215e+03
## var 29:
## best........... 3.999863e+02
## mean........... 4.042304e+02
## variance........ 4.211133e+03
## var 30:
## best........... 9.135889e+02
## mean........... 8.582924e+02
## variance........ 7.718984e+03
## var 31:
## best........... 4.649510e+02
## mean........... 4.704022e+02
## variance........ 2.870156e+03
## var 32:
## best........... 8.720830e+01
## mean........... 2.326132e+02
## variance........ 1.335992e+04
## var 33:
## best........... 4.063947e+02
## mean........... 4.053592e+02
## variance........ 7.527444e+03
## var 34:
## best........... 1.362306e+02
## mean........... 1.166663e+02
## variance........ 2.161683e+03
## var 35:
## best........... 6.891770e+02
## mean........... 7.618208e+02
## variance........ 4.919932e+03
## var 36:
## best........... 2.659986e+01
## mean........... 6.041614e+01
## variance........ 7.996080e+03
## var 37:
## best........... 3.549976e+02
## mean........... 3.948972e+02
## variance........ 7.338694e+03
## var 38:
```

```
## best............ 7.100184e+02
## mean............ 4.421722e+02
## variance........ 1.098163e+04
## var 39:
## best............ 2.209357e+02
## mean............ 4.412245e+02
## variance........ 1.445288e+04
## var 40:
## best............ 2.603924e+02
## mean............ 4.158918e+02
## variance........ 2.271347e+04
## var 41:
## best............ 1.796469e+02
## mean............ 1.908777e+02
## variance........ 8.759476e+03
## var 42:
## best............ 1.827878e+02
## mean............ 2.276178e+02
## variance........ 8.563536e+03
## var 43:
## best............ 7.501795e+02
## mean............ 6.032542e+02
## variance........ 1.421756e+04
## var 44:
## best............ 9.228763e+02
## mean............ 8.883342e+02
## variance........ 7.342651e+03
## var 45:
## best............ 7.544129e+02
## mean............ 7.308261e+02
## variance........ 3.178155e+03
##
## GENERATION: 5
## Lexical Fit..... 2.853843e-09  4.649014e-09  6.379196e-03  6.379196e-03  8.986808e-03  9.662391e-03
## #unique......... 74, #Total UniqueCount: 460
## var 1:
## best............ 9.615169e+02
## mean............ 8.657398e+02
## variance........ 1.442557e+04
## var 2:
## best............ 1.101154e+02
## mean............ 1.332551e+02
## variance........ 8.341193e+03
## var 3:
## best............ 5.140653e+02
## mean............ 5.454654e+02
## variance........ 8.291854e+03
## var 4:
## best............ 9.416877e+02
## mean............ 6.990725e+02
## variance........ 5.160746e+04
## var 5:
## best............ 4.879817e+02
## mean............ 2.825804e+02
```

```
## variance........ 3.985191e+04
## var 6:
## best........... 1.278623e+02
## mean........... 1.711249e+02
## variance........ 4.714100e+03
## var 7:
## best........... 1.996137e+02
## mean........... 1.921416e+02
## variance........ 6.821968e+03
## var 8:
## best........... 5.873719e+02
## mean........... 6.058432e+02
## variance........ 4.894481e+03
## var 9:
## best........... 3.095434e+02
## mean........... 6.301334e+02
## variance........ 7.963433e+04
## var 10:
## best........... 4.144580e+02
## mean........... 4.140595e+02
## variance........ 7.401196e+03
## var 11:
## best........... 8.353860e+02
## mean........... 7.925760e+02
## variance........ 4.559752e+03
## var 12:
## best........... 6.407883e+02
## mean........... 6.165062e+02
## variance........ 5.072397e+03
## var 13:
## best........... 1.024418e+02
## mean........... 1.308945e+02
## variance........ 5.295251e+03
## var 14:
## best........... 3.584847e+02
## mean........... 4.966955e+02
## variance........ 1.722187e+04
## var 15:
## best........... 2.331778e+02
## mean........... 1.945912e+02
## variance........ 7.206186e+03
## var 16:
## best........... 9.393357e+01
## mean........... 1.453949e+02
## variance........ 4.301622e+03
## var 17:
## best........... 9.761627e+02
## mean........... 8.897650e+02
## variance........ 1.701918e+04
## var 18:
## best........... 9.065966e+02
## mean........... 9.169645e+02
## variance........ 1.939484e+03
## var 19:
```

```
## best............ 2.745208e+02
## mean............ 6.102042e+02
## variance........ 8.531853e+04
## var 20:
## best............ 1.263170e+01
## mean............ 4.955381e+01
## variance........ 1.574280e+04
## var 21:
## best............ 4.373546e+02
## mean............ 4.614148e+02
## variance........ 2.166570e+03
## var 22:
## best............ 8.384156e+02
## mean............ 8.156901e+02
## variance........ 9.816899e+03
## var 23:
## best............ 4.562825e+02
## mean............ 4.389945e+02
## variance........ 6.881319e+03
## var 24:
## best............ 1.827961e+01
## mean............ 5.523046e+01
## variance........ 1.490217e+04
## var 25:
## best............ 4.981351e+02
## mean............ 7.070353e+02
## variance........ 3.976691e+04
## var 26:
## best............ 2.905035e+02
## mean............ 3.020350e+02
## variance........ 8.618917e+03
## var 27:
## best............ 3.606507e+02
## mean............ 4.255502e+02
## variance........ 9.504188e+03
## var 28:
## best............ 2.370096e+02
## mean............ 2.681725e+02
## variance........ 1.169213e+04
## var 29:
## best............ 3.999863e+02
## mean............ 4.150614e+02
## variance........ 5.892588e+03
## var 30:
## best............ 9.135889e+02
## mean............ 8.617997e+02
## variance........ 9.796362e+03
## var 31:
## best............ 4.649510e+02
## mean............ 4.617753e+02
## variance........ 4.719760e+03
## var 32:
## best............ 8.720830e+01
## mean............ 1.601985e+02
```

```
## variance........ 7.609509e+03
## var 33:
## best........... 4.063947e+02
## mean........... 4.102594e+02
## variance........ 6.161264e+03
## var 34:
## best........... 1.362306e+02
## mean........... 1.385115e+02
## variance........ 1.109254e+04
## var 35:
## best........... 6.891770e+02
## mean........... 7.302256e+02
## variance........ 6.437208e+03
## var 36:
## best........... 2.659986e+01
## mean........... 7.603460e+01
## variance........ 1.799588e+04
## var 37:
## best........... 3.549976e+02
## mean........... 3.767749e+02
## variance........ 4.238834e+03
## var 38:
## best........... 7.100184e+02
## mean........... 5.159671e+02
## variance........ 3.393995e+04
## var 39:
## best........... 2.209357e+02
## mean........... 3.899647e+02
## variance........ 2.494347e+04
## var 40:
## best........... 2.603924e+02
## mean........... 3.769272e+02
## variance........ 1.368977e+04
## var 41:
## best........... 1.796469e+02
## mean........... 2.008035e+02
## variance........ 6.709009e+03
## var 42:
## best........... 1.827878e+02
## mean........... 2.093153e+02
## variance........ 4.506670e+03
## var 43:
## best........... 7.501795e+02
## mean........... 6.612127e+02
## variance........ 7.361106e+03
## var 44:
## best........... 9.228763e+02
## mean........... 8.859407e+02
## variance........ 1.263744e+04
## var 45:
## best........... 7.544129e+02
## mean........... 7.244135e+02
## variance........ 6.018635e+03
##
```

```
## GENERATION: 6
## Lexical Fit..... 3.096860e-09  1.354309e-07  3.349978e-04  5.236037e-03  5.994391e-03  1.632592e-02
## #unique......... 73, #Total UniqueCount: 533
## var 1:
## best............ 8.240461e+02
## mean............ 8.897172e+02
## variance........ 8.019384e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.124194e+02
## variance........ 1.534132e+03
## var 3:
## best............ 6.326810e+02
## mean............ 5.698683e+02
## variance........ 8.077278e+03
## var 4:
## best............ 4.596208e+02
## mean............ 7.269303e+02
## variance........ 4.934613e+04
## var 5:
## best............ 4.995327e+01
## mean............ 3.124838e+02
## variance........ 4.290433e+04
## var 6:
## best............ 1.994509e+02
## mean............ 1.743479e+02
## variance........ 5.473526e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.868322e+02
## variance........ 1.303296e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.249051e+02
## variance........ 2.903290e+03
## var 9:
## best............ 9.497919e+02
## mean............ 5.814849e+02
## variance........ 8.832751e+04
## var 10:
## best............ 3.713717e+02
## mean............ 4.063393e+02
## variance........ 4.436105e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.951471e+02
## variance........ 5.908996e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.127764e+02
## variance........ 6.030363e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.210775e+02
```

```
## variance........ 4.034851e+03
## var 14:
## best........... 6.011877e+02
## mean........... 4.585374e+02
## variance........ 1.536773e+04
## var 15:
## best........... 1.328365e+02
## mean........... 2.006144e+02
## variance........ 5.021193e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.606649e+02
## variance........ 1.162058e+04
## var 17:
## best........... 8.877037e+02
## mean........... 9.151279e+02
## variance........ 9.372451e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.015138e+02
## variance........ 6.222403e+03
## var 19:
## best........... 9.311189e+02
## mean........... 5.651252e+02
## variance........ 9.702994e+04
## var 20:
## best........... 1.402471e+01
## mean........... 3.530536e+01
## variance........ 8.593851e+03
## var 21:
## best........... 4.709105e+02
## mean........... 4.518122e+02
## variance........ 5.898806e+03
## var 22:
## best........... 8.536062e+02
## mean........... 8.212893e+02
## variance........ 9.837932e+03
## var 23:
## best........... 3.934359e+02
## mean........... 4.418272e+02
## variance........ 7.027368e+03
## var 24:
## best........... 1.891909e+01
## mean........... 3.359302e+01
## variance........ 4.011787e+03
## var 25:
## best........... 9.166215e+02
## mean........... 6.794975e+02
## variance........ 4.225997e+04
## var 26:
## best........... 2.851533e+02
## mean........... 2.916764e+02
## variance........ 1.825478e+03
## var 27:
```

```
## best............ 4.532059e+02
## mean............ 4.121089e+02
## variance........ 6.897446e+03
## var 28:
## best............ 2.436413e+02
## mean............ 2.656990e+02
## variance........ 7.420731e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.036353e+02
## variance........ 1.698872e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.686181e+02
## variance........ 1.424560e+04
## var 31:
## best............ 4.710553e+02
## mean............ 4.633557e+02
## variance........ 3.850286e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.554845e+02
## variance........ 1.055823e+04
## var 33:
## best............ 3.763827e+02
## mean............ 4.023450e+02
## variance........ 4.899233e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.396060e+02
## variance........ 1.269708e+04
## var 35:
## best............ 7.930334e+02
## mean............ 7.245377e+02
## variance........ 4.514605e+03
## var 36:
## best............ 4.871291e+01
## mean............ 7.027000e+01
## variance........ 1.553152e+04
## var 37:
## best............ 3.919096e+02
## mean............ 3.857202e+02
## variance........ 7.081959e+03
## var 38:
## best............ 3.230480e+02
## mean............ 5.254380e+02
## variance........ 3.606186e+04
## var 39:
## best............ 5.350388e+02
## mean............ 3.635702e+02
## variance........ 2.338527e+04
## var 40:
## best............ 5.069983e+02
## mean............ 3.724137e+02
```

```
## variance........ 1.643268e+04
## var 41:
## best............ 1.670743e+02
## mean............ 1.866545e+02
## variance........ 3.510794e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.169493e+02
## variance........ 9.962488e+03
## var 43:
## best............ 5.865530e+02
## mean............ 6.706144e+02
## variance........ 1.091508e+04
## var 44:
## best............ 9.090666e+02
## mean............ 9.004133e+02
## variance........ 6.534295e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.296848e+02
## variance........ 5.557565e+03
##
## GENERATION: 7
## Lexical Fit..... 3.096860e-09  1.354309e-07  3.349978e-04  5.236037e-03  5.994391e-03  1.632592e-02
## #unique......... 69, #Total UniqueCount: 602
## var 1:
## best............ 8.240461e+02
## mean............ 8.553191e+02
## variance........ 7.631460e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.408224e+02
## variance........ 1.149004e+04
## var 3:
## best............ 6.326810e+02
## mean............ 5.901604e+02
## variance........ 1.093297e+04
## var 4:
## best............ 4.596208e+02
## mean............ 5.929325e+02
## variance........ 4.311602e+04
## var 5:
## best............ 4.995327e+01
## mean............ 1.956818e+02
## variance........ 4.028457e+04
## var 6:
## best............ 1.994509e+02
## mean............ 1.936294e+02
## variance........ 7.406386e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.949018e+02
## variance........ 7.233015e+03
## var 8:
```

```
## best............ 6.699284e+02
## mean............ 6.469968e+02
## variance........ 3.813227e+03
## var 9:
## best............ 9.497919e+02
## mean............ 7.494308e+02
## variance........ 7.521071e+04
## var 10:
## best............ 3.713717e+02
## mean............ 3.797966e+02
## variance........ 2.890233e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.721496e+02
## variance........ 8.242398e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.111105e+02
## variance........ 4.820166e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.254906e+02
## variance........ 1.969461e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.348966e+02
## variance........ 1.594364e+04
## var 15:
## best............ 1.328365e+02
## mean............ 1.692945e+02
## variance........ 4.731278e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.525564e+02
## variance........ 7.315073e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.897480e+02
## variance........ 7.831289e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.065803e+02
## variance........ 8.246866e+03
## var 19:
## best............ 9.311189e+02
## mean............ 7.263261e+02
## variance........ 8.448649e+04
## var 20:
## best............ 1.402471e+01
## mean............ 5.593097e+01
## variance........ 1.790794e+04
## var 21:
## best............ 4.709105e+02
## mean............ 4.662232e+02
```

```
## variance........ 2.672055e+03
## var 22:
## best............ 8.536062e+02
## mean............ 8.458812e+02
## variance........ 6.806240e+02
## var 23:
## best............ 3.934359e+02
## mean............ 4.218495e+02
## variance........ 6.789299e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.283433e+01
## variance........ 2.255123e+03
## var 25:
## best............ 9.166215e+02
## mean............ 7.783396e+02
## variance........ 3.799116e+04
## var 26:
## best............ 2.851533e+02
## mean............ 2.985911e+02
## variance........ 6.833714e+03
## var 27:
## best............ 4.532059e+02
## mean............ 4.381638e+02
## variance........ 1.114652e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.540817e+02
## variance........ 4.865234e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.113156e+02
## variance........ 6.036731e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.577503e+02
## variance........ 6.567306e+03
## var 31:
## best............ 4.710553e+02
## mean............ 4.724327e+02
## variance........ 3.583761e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.666299e+02
## variance........ 2.474108e+03
## var 33:
## best............ 3.763827e+02
## mean............ 4.035952e+02
## variance........ 7.910690e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.288475e+02
## variance........ 8.732304e+03
## var 35:
```

```
## best............ 7.930334e+02
## mean............ 7.512771e+02
## variance........ 6.704535e+03
## var 36:
## best............ 4.871291e+01
## mean............ 7.653321e+01
## variance........ 1.189929e+04
## var 37:
## best............ 3.919096e+02
## mean............ 3.769915e+02
## variance........ 3.031376e+03
## var 38:
## best............ 3.230480e+02
## mean............ 4.432061e+02
## variance........ 3.239728e+04
## var 39:
## best............ 5.350388e+02
## mean............ 4.486106e+02
## variance........ 2.527178e+04
## var 40:
## best............ 5.069983e+02
## mean............ 4.423842e+02
## variance........ 1.355862e+04
## var 41:
## best........... 1.670743e+02
## mean........... 1.831910e+02
## variance........ 4.029728e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.103090e+02
## variance........ 4.727750e+03
## var 43:
## best............ 5.865530e+02
## mean............ 6.331219e+02
## variance........ 6.219266e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.821114e+02
## variance........ 1.239487e+04
## var 45:
## best............ 7.366138e+02
## mean............ 7.385418e+02
## variance........ 4.811064e+03
##
## GENERATION: 8
## Lexical Fit..... 3.096860e-09  1.354309e-07  3.349978e-04  5.236037e-03  5.994391e-03  1.632592e-02
## #unique......... 61, #Total UniqueCount: 663
## var 1:
## best............ 8.240461e+02
## mean............ 8.197967e+02
## variance........ 3.661075e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.240289e+02
```

```
## variance........ 4.045757e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.174055e+02
## variance........ 3.114261e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.871118e+02
## variance........ 1.459872e+04
## var 5:
## best............ 4.995327e+01
## mean............ 7.732923e+01
## variance........ 9.609153e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.024361e+02
## variance........ 2.668322e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.914334e+02
## variance........ 1.188040e+04
## var 8:
## best............ 6.699284e+02
## mean............ 6.556911e+02
## variance........ 2.836392e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.015513e+02
## variance........ 2.352454e+04
## var 10:
## best............ 3.713717e+02
## mean............ 3.736558e+02
## variance........ 4.698764e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.729044e+02
## variance........ 2.430602e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.134730e+02
## variance........ 1.271207e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.232364e+02
## variance........ 1.337817e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.823517e+02
## variance........ 5.867555e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.467210e+02
## variance........ 3.630868e+03
## var 16:
```

```
## best............ 1.633113e+02
## mean............ 1.800893e+02
## variance........ 7.208721e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.640029e+02
## variance........ 1.151953e+04
## var 18:
## best............ 9.444495e+02
## mean............ 9.269555e+02
## variance........ 3.894510e+03
## var 19:
## best............ 9.311189e+02
## mean............ 8.838531e+02
## variance........ 2.804370e+04
## var 20:
## best............ 1.402471e+01
## mean............ 3.643758e+01
## variance........ 5.780116e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.659175e+02
## variance........ 1.724049e+03
## var 22:
## best............ 8.536062e+02
## mean............ 8.430262e+02
## variance........ 3.826623e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.916954e+02
## variance........ 1.180755e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.752265e+01
## variance........ 5.779495e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.850339e+02
## variance........ 1.176946e+04
## var 26:
## best............ 2.851533e+02
## mean............ 2.980345e+02
## variance........ 5.653051e+03
## var 27:
## best............ 4.532059e+02
## mean............ 4.620731e+02
## variance........ 8.741469e+03
## var 28:
## best............ 2.436413e+02
## mean............ 2.396328e+02
## variance........ 8.867402e+02
## var 29:
## best............ 4.030825e+02
## mean............ 4.079070e+02
```

```
## variance........ 4.495162e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.483208e+02
## variance........ 8.963055e+03
## var 31:
## best........... 4.710553e+02
## mean........... 4.728865e+02
## variance........ 1.788400e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.835977e+02
## variance........ 8.766151e+02
## var 33:
## best........... 3.763827e+02
## mean........... 3.860635e+02
## variance........ 2.973871e+03
## var 34:
## best........... 9.670946e+01
## mean........... 1.111025e+02
## variance........ 5.830549e+03
## var 35:
## best........... 7.930334e+02
## mean........... 7.829715e+02
## variance........ 1.050761e+03
## var 36:
## best........... 4.871291e+01
## mean........... 6.137443e+01
## variance........ 3.526016e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.892828e+02
## variance........ 2.201146e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.454366e+02
## variance........ 1.413616e+04
## var 39:
## best........... 5.350388e+02
## mean........... 5.113709e+02
## variance........ 7.275462e+03
## var 40:
## best........... 5.069983e+02
## mean........... 4.850053e+02
## variance........ 4.861539e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.784086e+02
## variance........ 3.738136e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.191523e+02
## variance........ 4.880386e+03
## var 43:
```

```
## best............ 5.865530e+02
## mean............ 5.959087e+02
## variance........ 1.995045e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.778112e+02
## variance........ 1.411993e+04
## var 45:
## best............ 7.366138e+02
## mean............ 7.415082e+02
## variance........ 1.089180e+03
##
## GENERATION: 9
## Lexical Fit..... 6.003753e-09  1.990021e-07  4.665260e-04  6.350776e-03  6.881776e-03  1.571646e-02
## #unique......... 63, #Total UniqueCount: 726
## var 1:
## best............ 8.240461e+02
## mean............ 8.034749e+02
## variance........ 8.438410e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.223456e+02
## variance........ 6.722232e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.243067e+02
## variance........ 8.832207e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.718169e+02
## variance........ 1.772807e+03
## var 5:
## best............ 4.995327e+01
## mean............ 5.756327e+01
## variance........ 1.406876e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.121104e+02
## variance........ 4.026981e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.756414e+02
## variance........ 4.026911e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.642420e+02
## variance........ 1.735909e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.266128e+02
## variance........ 1.136328e+04
## var 10:
## best............ 3.713717e+02
## mean............ 3.765324e+02
```

```
## variance........ 2.691608e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.684308e+02
## variance........ 4.228573e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.023072e+02
## variance........ 3.111633e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.431783e+02
## variance........ 1.510817e+04
## var 14:
## best............ 6.011877e+02
## mean............ 5.923060e+02
## variance........ 3.280812e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.431031e+02
## variance........ 3.760885e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.877319e+02
## variance........ 9.492822e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.656710e+02
## variance........ 6.520001e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.179766e+02
## variance........ 1.148096e+04
## var 19:
## best............ 9.311189e+02
## mean............ 9.146990e+02
## variance........ 5.200159e+03
## var 20:
## best............ 1.402471e+01
## mean............ 4.360147e+01
## variance........ 1.164016e+04
## var 21:
## best............ 4.709105e+02
## mean............ 4.698721e+02
## variance........ 1.074171e+03
## var 22:
## best............ 8.536062e+02
## mean............ 8.331754e+02
## variance........ 8.803717e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.927636e+02
## variance........ 2.288492e+03
## var 24:
```

```
## best............ 1.891909e+01
## mean............ 5.488718e+01
## variance........ 1.252101e+04
## var 25:
## best............ 9.166215e+02
## mean............ 9.101563e+02
## variance........ 6.831255e+02
## var 26:
## best............ 2.851533e+02
## mean............ 3.007593e+02
## variance........ 8.017820e+03
## var 27:
## best............ 1.944866e+02
## mean............ 4.603113e+02
## variance........ 5.810529e+03
## var 28:
## best............ 2.436413e+02
## mean............ 2.501084e+02
## variance........ 1.462102e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.099540e+02
## variance........ 4.255769e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.449337e+02
## variance........ 6.305705e+03
## var 31:
## best............ 4.710553e+02
## mean............ 4.615670e+02
## variance........ 2.386936e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.947564e+02
## variance........ 2.943274e+03
## var 33:
## best............ 3.763827e+02
## mean............ 3.918865e+02
## variance........ 6.292556e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.112750e+02
## variance........ 8.163868e+03
## var 35:
## best............ 7.966563e+02
## mean............ 7.785119e+02
## variance........ 4.482523e+03
## var 36:
## best............ 4.871291e+01
## mean............ 7.369606e+01
## variance........ 9.089296e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.934210e+02
```

```
## variance........ 2.634367e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.402491e+02
## variance........ 5.498373e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.354532e+02
## variance........ 5.231284e+02
## var 40:
## best............ 5.069983e+02
## mean............ 5.120283e+02
## variance........ 2.548123e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.774824e+02
## variance........ 2.265953e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.109850e+02
## variance........ 2.608574e+03
## var 43:
## best............ 5.865530e+02
## mean............ 5.855664e+02
## variance........ 3.792938e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.947033e+02
## variance........ 3.666168e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.391464e+02
## variance........ 2.124326e+03
##
## GENERATION: 10
## Lexical Fit..... 7.522495e-08  9.125587e-07  2.218972e-03  4.325153e-03  1.503268e-02  2.044109e-02
## #unique......... 72, #Total UniqueCount: 798
## var 1:
## best............ 8.240461e+02
## mean............ 8.135501e+02
## variance........ 4.578537e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.274918e+02
## variance........ 5.637410e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.137545e+02
## variance........ 7.471387e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.581572e+02
## variance........ 1.949334e+03
## var 5:
```

```
## best............ 4.995327e+01
## mean............ 6.416940e+01
## variance........ 3.672736e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.152774e+02
## variance........ 6.977513e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.705164e+02
## variance........ 2.438147e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.648384e+02
## variance........ 2.784269e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.225007e+02
## variance........ 8.751076e+03
## var 10:
## best............ 3.713717e+02
## mean............ 3.838035e+02
## variance........ 4.257113e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.681789e+02
## variance........ 2.758527e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.147668e+02
## variance........ 9.622408e+02
## var 13:
## best............ 1.193314e+02
## mean............ 1.334901e+02
## variance........ 5.679873e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.975560e+02
## variance........ 1.077189e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.498140e+02
## variance........ 9.286161e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.824640e+02
## variance........ 8.686482e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.714903e+02
## variance........ 3.987132e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.277592e+02
```

```
## variance........ 4.169144e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.061458e+02
## variance........ 7.600037e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.306551e+01
## variance........ 7.511332e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.708226e+02
## variance........ 1.764416e+03
## var 22:
## best............ 8.536062e+02
## mean............ 8.377480e+02
## variance........ 6.222053e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.982136e+02
## variance........ 1.455597e+03
## var 24:
## best............ 1.891909e+01
## mean............ 5.203034e+01
## variance........ 1.323278e+04
## var 25:
## best............ 9.166215e+02
## mean............ 8.976621e+02
## variance........ 7.095353e+03
## var 26:
## best............ 2.851533e+02
## mean............ 2.906075e+02
## variance........ 1.749522e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.306881e+02
## variance........ 2.451766e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.541892e+02
## variance........ 4.915190e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.111581e+02
## variance........ 4.980031e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.396586e+02
## variance........ 6.634001e+03
## var 31:
## best............ 4.710553e+02
## mean............ 4.765897e+02
## variance........ 2.438907e+03
## var 32:
```

```
## best............ 1.878311e+02
## mean............ 2.049099e+02
## variance........ 5.960316e+03
## var 33:
## best............ 3.763827e+02
## mean............ 3.801507e+02
## variance........ 2.335213e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.094232e+02
## variance........ 3.053243e+03
## var 35:
## best............ 7.989593e+02
## mean............ 7.967661e+02
## variance........ 4.541916e+02
## var 36:
## best............ 4.871291e+01
## mean............ 9.119235e+01
## variance........ 2.265453e+04
## var 37:
## best............ 3.919096e+02
## mean............ 3.928710e+02
## variance........ 1.122693e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.315301e+02
## variance........ 1.266553e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.301328e+02
## variance........ 3.794905e+03
## var 40:
## best............ 5.069983e+02
## mean............ 5.039438e+02
## variance........ 2.642918e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.807090e+02
## variance........ 3.904841e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.132292e+02
## variance........ 1.888179e+03
## var 43:
## best............ 5.865530e+02
## mean............ 5.729979e+02
## variance........ 4.688883e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.979569e+02
## variance........ 3.065799e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.335816e+02
```

```
## variance........ 7.757450e+03
##
## GENERATION: 11
## Lexical Fit..... 7.886968e-08  1.312444e-06  2.218972e-03  3.461435e-03  1.343682e-02  1.925585e-02
## #unique......... 66, #Total UniqueCount: 864
## var 1:
## best........... 8.240461e+02
## mean........... 8.192192e+02
## variance........ 1.882423e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.268532e+02
## variance........ 9.380583e+03
## var 3:
## best........... 6.326810e+02
## mean........... 6.296422e+02
## variance........ 3.414709e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.672921e+02
## variance........ 3.544846e+03
## var 5:
## best........... 4.995327e+01
## mean........... 6.787288e+01
## variance........ 4.092779e+03
## var 6:
## best........... 1.994509e+02
## mean........... 2.031109e+02
## variance........ 1.522423e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.800581e+02
## variance........ 7.600354e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.748510e+02
## variance........ 1.568453e+03
## var 9:
## best........... 9.497919e+02
## mean........... 9.305279e+02
## variance........ 6.647265e+03
## var 10:
## best........... 3.713717e+02
## mean........... 3.736764e+02
## variance........ 1.957956e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.628381e+02
## variance........ 6.050391e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.082907e+02
## variance........ 1.879504e+03
## var 13:
```

```
## best............ 1.193314e+02
## mean............ 1.339366e+02
## variance........ 3.802499e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.017187e+02
## variance........ 6.764870e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.514564e+02
## variance........ 5.608252e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.778698e+02
## variance........ 4.631722e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.617172e+02
## variance........ 1.258283e+04
## var 18:
## best............ 9.444495e+02
## mean............ 9.306040e+02
## variance........ 4.250335e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.200445e+02
## variance........ 4.439964e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.581814e+01
## variance........ 2.583242e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.729329e+02
## variance........ 4.755156e+03
## var 22:
## best............ 4.807116e+01
## mean............ 8.271879e+02
## variance........ 1.409088e+04
## var 23:
## best............ 3.934359e+02
## mean............ 4.037877e+02
## variance........ 3.546602e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.683325e+01
## variance........ 3.377127e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.849887e+02
## variance........ 1.554568e+04
## var 26:
## best............ 2.851533e+02
## mean............ 3.022526e+02
```

```
## variance........ 7.146639e+03
## var 27:
## best............ 3.002178e+01
## mean............ 1.226851e+02
## variance........ 2.213737e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.457327e+02
## variance........ 1.511531e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.083153e+02
## variance........ 3.633278e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.347325e+02
## variance........ 9.780434e+03
## var 31:
## best............ 4.710553e+02
## mean............ 4.693782e+02
## variance........ 1.051035e+03
## var 32:
## best............ 1.878311e+02
## mean............ 2.028482e+02
## variance........ 5.385176e+03
## var 33:
## best............ 3.763827e+02
## mean............ 3.819718e+02
## variance........ 3.536730e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.165617e+02
## variance........ 4.283185e+03
## var 35:
## best............ 7.989593e+02
## mean............ 7.892399e+02
## variance........ 4.024407e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.190524e+01
## variance........ 3.085594e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.983304e+02
## variance........ 3.379811e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.326402e+02
## variance........ 3.235156e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.248866e+02
## variance........ 5.336125e+03
## var 40:
```

```
## best............ 5.069983e+02
## mean............ 5.157247e+02
## variance........ 3.361237e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.923191e+02
## variance........ 1.062807e+04
## var 42:
## best............ 2.038571e+02
## mean............ 2.211344e+02
## variance........ 5.842862e+03
## var 43:
## best............ 5.865530e+02
## mean............ 5.864633e+02
## variance........ 1.754242e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.873835e+02
## variance........ 1.321769e+04
## var 45:
## best............ 7.366138e+02
## mean............ 7.285889e+02
## variance........ 6.141116e+03
##
## GENERATION: 12
## Lexical Fit..... 1.563035e-07  1.312444e-06  3.958329e-03  4.264410e-03  1.116792e-02  1.925585e-02
## #unique......... 60, #Total UniqueCount: 924
## var 1:
## best............ 8.240461e+02
## mean............ 8.110146e+02
## variance........ 3.189548e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.317063e+02
## variance........ 8.324284e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.213877e+02
## variance........ 5.232998e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.612380e+02
## variance........ 2.607698e+03
## var 5:
## best............ 4.995327e+01
## mean............ 5.768712e+01
## variance........ 9.690369e+02
## var 6:
## best............ 1.994509e+02
## mean............ 2.084802e+02
## variance........ 1.939615e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.825482e+02
```

```
## variance........ 7.788669e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.732000e+02
## variance........ 7.161570e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.253998e+02
## variance........ 6.519032e+03
## var 10:
## best............ 3.713717e+02
## mean............ 3.722564e+02
## variance........ 4.707965e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.642298e+02
## variance........ 5.977568e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.041675e+02
## variance........ 1.827498e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.298532e+02
## variance........ 2.098007e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.990678e+02
## variance........ 2.521774e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.433478e+02
## variance........ 2.047100e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.896074e+02
## variance........ 1.128885e+04
## var 17:
## best............ 8.877037e+02
## mean............ 8.746166e+02
## variance........ 2.446623e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.091543e+02
## variance........ 2.194200e+04
## var 19:
## best............ 9.311189e+02
## mean............ 9.080461e+02
## variance........ 9.358494e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.820596e+01
## variance........ 8.870524e+03
## var 21:
```

```
## best............ 4.709105e+02
## mean............ 4.718180e+02
## variance........ 6.654028e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.628318e+02
## variance........ 1.281425e+05
## var 23:
## best............ 3.934359e+02
## mean............ 3.970968e+02
## variance........ 3.388436e+03
## var 24:
## best............ 1.891909e+01
## mean............ 4.053423e+01
## variance........ 7.438096e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.969716e+02
## variance........ 5.378973e+03
## var 26:
## best............ 2.851533e+02
## mean............ 2.985729e+02
## variance........ 4.775011e+03
## var 27:
## best............ 3.002178e+01
## mean............ 6.331052e+01
## variance........ 1.139231e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.596848e+02
## variance........ 5.714502e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.098891e+02
## variance........ 1.467181e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.064714e+02
## variance........ 1.813271e+04
## var 31:
## best............ 4.710553e+02
## mean............ 4.742685e+02
## variance........ 2.564883e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.951523e+02
## variance........ 2.175250e+03
## var 33:
## best............ 3.763827e+02
## mean............ 3.800891e+02
## variance........ 2.907817e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.257843e+02
```

```
## variance........ 8.229244e+03
## var 35:
## best........... 1.635908e+02
## mean........... 7.750778e+02
## variance........ 1.046431e+04
## var 36:
## best........... 4.871291e+01
## mean........... 6.141457e+01
## variance........ 6.141337e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.857795e+02
## variance........ 1.613572e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.217565e+02
## variance........ 1.657581e+03
## var 39:
## best........... 5.350388e+02
## mean........... 5.333368e+02
## variance........ 2.844868e+03
## var 40:
## best........... 5.069983e+02
## mean........... 5.045017e+02
## variance........ 1.686417e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.830515e+02
## variance........ 5.125240e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.160194e+02
## variance........ 4.526185e+03
## var 43:
## best........... 5.865530e+02
## mean........... 5.870902e+02
## variance........ 1.274597e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.893061e+02
## variance........ 6.780972e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.289130e+02
## variance........ 2.225057e+03
##
## GENERATION: 13
## Lexical Fit..... 3.076929e-07  4.033200e-06  4.509630e-03  1.166051e-02  2.355862e-02  2.487761e-02
## #unique......... 64, #Total UniqueCount: 988
## var 1:
## best........... 8.240461e+02
## mean........... 8.054727e+02
## variance........ 5.419220e+03
## var 2:
```

```
## best............ 1.080625e+02
## mean............ 1.352736e+02
## variance........ 8.599850e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.276207e+02
## variance........ 2.617626e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.542541e+02
## variance........ 8.960101e+02
## var 5:
## best............ 4.995327e+01
## mean............ 6.966537e+01
## variance........ 6.800525e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.156532e+02
## variance........ 5.153653e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.791482e+02
## variance........ 6.883858e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.642267e+02
## variance........ 3.450899e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.363274e+02
## variance........ 3.013379e+03
## var 10:
## best............ 3.713717e+02
## mean............ 3.798580e+02
## variance........ 3.125727e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.629155e+02
## variance........ 6.669696e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.072975e+02
## variance........ 1.171191e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.513418e+02
## variance........ 8.980400e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.003539e+02
## variance........ 3.450775e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.517662e+02
```

```
## variance........ 1.070765e+04
## var 16:
## best............ 1.633113e+02
## mean............ 1.678217e+02
## variance........ 2.701100e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.682781e+02
## variance........ 5.759277e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.131556e+02
## variance........ 1.288084e+04
## var 19:
## best............ 9.311189e+02
## mean............ 9.100245e+02
## variance........ 1.265357e+04
## var 20:
## best............ 1.402471e+01
## mean............ 2.988345e+01
## variance........ 3.137505e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.750372e+02
## variance........ 1.611883e+03
## var 22:
## best............ 4.807116e+01
## mean............ 2.824947e+02
## variance........ 1.098094e+05
## var 23:
## best............ 3.934359e+02
## mean............ 3.941200e+02
## variance........ 1.954672e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.830708e+01
## variance........ 6.523001e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.971033e+02
## variance........ 6.764117e+03
## var 26:
## best............ 2.851533e+02
## mean............ 3.053167e+02
## variance........ 5.651562e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.738465e+01
## variance........ 7.926073e+02
## var 28:
## best............ 2.436413e+02
## mean............ 2.485382e+02
## variance........ 1.170449e+03
## var 29:
```

```
## best............ 4.030825e+02
## mean............ 4.099783e+02
## variance........ 3.185090e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.395563e+02
## variance........ 5.627692e+03
## var 31:
## best............ 8.645241e+02
## mean............ 4.696882e+02
## variance........ 5.143810e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.933277e+02
## variance........ 1.054470e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.810210e+02
## variance........ 2.075378e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.098149e+02
## variance........ 3.497366e+03
## var 35:
## best............ 1.635908e+02
## mean............ 4.151541e+02
## variance........ 9.093137e+04
## var 36:
## best............ 4.871291e+01
## mean............ 5.608785e+01
## variance........ 9.326952e+02
## var 37:
## best............ 3.919096e+02
## mean............ 4.033898e+02
## variance........ 2.589210e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.271845e+02
## variance........ 8.932852e+02
## var 39:
## best............ 5.350388e+02
## mean............ 5.260891e+02
## variance........ 2.082034e+03
## var 40:
## best............ 1.481206e+02
## mean............ 5.029983e+02
## variance........ 3.163257e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.882389e+02
## variance........ 5.124405e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.112385e+02
```

```
## variance........ 3.119497e+03
## var 43:
## best........... 3.092410e+02
## mean........... 5.672863e+02
## variance........ 6.125506e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.930656e+02
## variance........ 5.662616e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.324999e+02
## variance........ 1.268345e+03
##
## GENERATION: 14
## Lexical Fit..... 4.039826e-07  3.820847e-06  9.716536e-03  1.503268e-02  2.450731e-02  2.485274e-02
## #unique......... 66, #Total UniqueCount: 1054
## var 1:
## best........... 8.240461e+02
## mean........... 8.180734e+02
## variance........ 1.826426e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.230484e+02
## variance........ 7.710789e+03
## var 3:
## best........... 6.326810e+02
## mean........... 6.368574e+02
## variance........ 5.177877e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.509609e+02
## variance........ 2.040173e+03
## var 5:
## best........... 4.995327e+01
## mean........... 6.455024e+01
## variance........ 7.681078e+03
## var 6:
## best........... 1.994509e+02
## mean........... 2.000290e+02
## variance........ 4.077276e+02
## var 7:
## best........... 1.604937e+02
## mean........... 1.733368e+02
## variance........ 3.522211e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.699426e+02
## variance........ 1.125857e+03
## var 9:
## best........... 9.497919e+02
## mean........... 9.442418e+02
## variance........ 1.512694e+03
## var 10:
```

```
## best............ 3.713717e+02
## mean............ 3.791242e+02
## variance........ 2.712665e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.672662e+02
## variance........ 5.180486e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.078647e+02
## variance........ 2.217594e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.262254e+02
## variance........ 1.356507e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.032546e+02
## variance........ 8.303152e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.465099e+02
## variance........ 4.582324e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.707323e+02
## variance........ 2.045360e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.721019e+02
## variance........ 3.277214e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.288937e+02
## variance........ 4.790605e+03
## var 19:
## best............ 9.311189e+02
## mean............ 8.878184e+02
## variance........ 1.877332e+04
## var 20:
## best............ 1.402471e+01
## mean............ 3.871903e+01
## variance........ 7.438945e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.752171e+02
## variance........ 2.313608e+03
## var 22:
## best............ 4.807116e+01
## mean............ 1.161771e+02
## variance........ 4.090493e+04
## var 23:
## best............ 3.934359e+02
## mean............ 3.965319e+02
```

```
## variance........ 3.183005e+03
## var 24:
## best............ 1.891909e+01
## mean............ 5.775231e+01
## variance........ 2.084615e+04
## var 25:
## best............ 9.166215e+02
## mean............ 9.063980e+02
## variance........ 1.812802e+03
## var 26:
## best............ 2.851533e+02
## mean............ 2.955452e+02
## variance........ 6.645706e+03
## var 27:
## best............ 3.002178e+01
## mean............ 5.817168e+01
## variance........ 1.178049e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.574209e+02
## variance........ 6.320354e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.091203e+02
## variance........ 2.050055e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.425736e+02
## variance........ 8.480320e+03
## var 31:
## best............ 8.645241e+02
## mean............ 6.454424e+02
## variance........ 3.762357e+04
## var 32:
## best............ 1.878311e+02
## mean............ 1.941745e+02
## variance........ 2.343464e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.877619e+02
## variance........ 7.874861e+02
## var 34:
## best............ 9.670946e+01
## mean............ 1.271995e+02
## variance........ 1.407706e+04
## var 35:
## best............ 1.635908e+02
## mean............ 2.088177e+02
## variance........ 2.671039e+04
## var 36:
## best............ 4.871291e+01
## mean............ 8.494790e+01
## variance........ 1.874837e+04
## var 37:
```

```
## best............ 3.919096e+02
## mean............ 4.081969e+02
## variance........ 4.063002e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.294450e+02
## variance........ 3.048080e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.352951e+02
## variance........ 1.517178e+03
## var 40:
## best............ 1.481206e+02
## mean............ 3.420312e+02
## variance........ 3.128525e+04
## var 41:
## best............ 1.670743e+02
## mean............ 1.821179e+02
## variance........ 3.296275e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.285895e+02
## variance........ 1.044058e+04
## var 43:
## best............ 1.983163e+02
## mean............ 4.576934e+02
## variance........ 2.273040e+04
## var 44:
## best............ 9.090666e+02
## mean............ 8.992597e+02
## variance........ 1.507288e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.201686e+02
## variance........ 6.038585e+03
##
## GENERATION: 15
## Lexical Fit..... 6.278100e-07  5.543594e-06  5.018034e-03  1.503268e-02  2.280732e-02  2.487761e-02
## #unique......... 57, #Total UniqueCount: 1111
## var 1:
## best............ 8.240461e+02
## mean............ 8.162872e+02
## variance........ 1.079218e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.204441e+02
## variance........ 2.721193e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.341528e+02
## variance........ 1.631565e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.606853e+02
```

```
## variance........ 1.326083e+03
## var 5:
## best........... 4.995327e+01
## mean........... 6.374977e+01
## variance........ 3.483898e+03
## var 6:
## best........... 1.994509e+02
## mean........... 2.015131e+02
## variance........ 4.045325e+02
## var 7:
## best........... 1.604937e+02
## mean........... 1.672942e+02
## variance........ 1.641793e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.680711e+02
## variance........ 5.730935e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.362055e+02
## variance........ 4.096008e+03
## var 10:
## best........... 3.713717e+02
## mean........... 3.818626e+02
## variance........ 4.684050e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.675239e+02
## variance........ 2.546094e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.085138e+02
## variance........ 2.891915e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.268542e+02
## variance........ 1.588946e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.985333e+02
## variance........ 7.592872e+02
## var 15:
## best........... 1.328365e+02
## mean........... 1.382058e+02
## variance........ 1.141457e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.827413e+02
## variance........ 7.444789e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.674421e+02
## variance........ 8.132822e+03
## var 18:
```

```
## best............ 9.444495e+02
## mean............ 9.342377e+02
## variance........ 1.927053e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.047519e+02
## variance........ 8.375376e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.463830e+01
## variance........ 1.748692e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.794867e+02
## variance........ 3.079693e+03
## var 22:
## best............ 4.807116e+01
## mean............ 6.708206e+01
## variance........ 7.592075e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.940714e+02
## variance........ 2.380011e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.009246e+01
## variance........ 2.415135e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.067259e+02
## variance........ 3.199389e+03
## var 26:
## best............ 2.851533e+02
## mean............ 2.922234e+02
## variance........ 3.756253e+03
## var 27:
## best............ 3.002178e+01
## mean............ 5.498878e+01
## variance........ 6.602192e+03
## var 28:
## best............ 2.436413e+02
## mean............ 2.473250e+02
## variance........ 1.260488e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.093935e+02
## variance........ 4.851099e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.450592e+02
## variance........ 5.051977e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.186351e+02
```

```
## variance........ 1.619670e+04
## var 32:
## best........... 1.878311e+02
## mean........... 1.984539e+02
## variance........ 2.166250e+03
## var 33:
## best........... 3.948430e+02
## mean........... 3.963037e+02
## variance........ 1.407352e+03
## var 34:
## best........... 9.670946e+01
## mean........... 1.046195e+02
## variance........ 2.965188e+03
## var 35:
## best........... 1.635908e+02
## mean........... 1.802849e+02
## variance........ 3.449796e+03
## var 36:
## best........... 4.871291e+01
## mean........... 6.208550e+01
## variance........ 3.121232e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.917816e+02
## variance........ 1.392361e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.222245e+02
## variance........ 1.906100e+03
## var 39:
## best........... 5.350388e+02
## mean........... 5.322943e+02
## variance........ 2.045387e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.907528e+02
## variance........ 1.354742e+04
## var 41:
## best........... 1.670743e+02
## mean........... 1.814551e+02
## variance........ 2.481525e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.089008e+02
## variance........ 8.128125e+02
## var 43:
## best........... 2.450767e+02
## mean........... 2.838753e+02
## variance........ 1.602092e+04
## var 44:
## best........... 9.090666e+02
## mean........... 9.010582e+02
## variance........ 1.997215e+03
## var 45:
```

```
## best............ 7.366138e+02
## mean............ 7.317899e+02
## variance........ 1.882202e+03
##
## GENERATION: 16
## Lexical Fit..... 6.278100e-07  5.543594e-06  5.018034e-03  1.503268e-02  2.280732e-02  2.487761e-02
## #unique......... 70, #Total UniqueCount: 1181
## var 1:
## best............ 8.240461e+02
## mean............ 8.119154e+02
## variance........ 3.125166e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.280813e+02
## variance........ 8.215285e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.301901e+02
## variance........ 2.255986e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.551797e+02
## variance........ 2.587231e+03
## var 5:
## best............ 4.995327e+01
## mean............ 7.886914e+01
## variance........ 9.632035e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.176879e+02
## variance........ 6.452445e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.769069e+02
## variance........ 2.880149e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.649174e+02
## variance........ 7.359386e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.307875e+02
## variance........ 4.388359e+03
## var 10:
## best............ 3.713717e+02
## mean............ 3.724743e+02
## variance........ 1.028953e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.569320e+02
## variance........ 6.025474e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.087023e+02
```

```
## variance........ 1.255112e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.340124e+02
## variance........ 4.633501e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.956219e+02
## variance........ 4.313728e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.468100e+02
## variance........ 6.705510e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.806429e+02
## variance........ 4.736036e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.764093e+02
## variance........ 5.557714e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.202480e+02
## variance........ 1.094444e+04
## var 19:
## best............ 9.311189e+02
## mean............ 9.045738e+02
## variance........ 1.008013e+04
## var 20:
## best............ 1.402471e+01
## mean............ 2.889842e+01
## variance........ 2.514795e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.819949e+02
## variance........ 3.329856e+03
## var 22:
## best............ 4.807116e+01
## mean............ 6.992788e+01
## variance........ 4.504620e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.956674e+02
## variance........ 2.291782e+03
## var 24:
## best............ 1.891909e+01
## mean............ 4.484806e+01
## variance........ 8.154838e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.144541e+02
## variance........ 2.511450e+02
## var 26:
```

```
## best............ 2.851533e+02
## mean............ 3.015819e+02
## variance........ 1.078912e+04
## var 27:
## best............ 3.002178e+01
## mean............ 5.143497e+01
## variance........ 3.099176e+03
## var 28:
## best............ 2.436413e+02
## mean............ 2.655238e+02
## variance........ 9.177358e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.111618e+02
## variance........ 3.058320e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.552097e+02
## variance........ 1.313569e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.455310e+02
## variance........ 5.958464e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.921459e+02
## variance........ 8.402219e+02
## var 33:
## best............ 3.948430e+02
## mean............ 4.128091e+02
## variance........ 4.955252e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.033208e+02
## variance........ 1.044634e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.754720e+02
## variance........ 2.337136e+03
## var 36:
## best............ 4.871291e+01
## mean............ 7.244444e+01
## variance........ 1.092543e+04
## var 37:
## best............ 3.919096e+02
## mean............ 3.950949e+02
## variance........ 1.977872e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.269359e+02
## variance........ 1.526570e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.338013e+02
```

```
## variance........ 1.974104e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.711132e+02
## variance........ 7.536097e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.895548e+02
## variance........ 5.815526e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.139732e+02
## variance........ 2.770191e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.403163e+02
## variance........ 4.525802e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.896562e+02
## variance........ 4.690780e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.225698e+02
## variance........ 3.206290e+03
##
## GENERATION: 17
## Lexical Fit..... 2.624366e-06  1.221116e-05  3.635369e-03  3.099098e-02  3.099098e-02  3.662785e-02
## #unique......... 70, #Total UniqueCount: 1251
## var 1:
## best........... 8.240461e+02
## mean........... 8.070683e+02
## variance........ 4.618670e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.283641e+02
## variance........ 9.871210e+03
## var 3:
## best........... 6.326810e+02
## mean........... 6.252039e+02
## variance........ 1.810181e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.570441e+02
## variance........ 3.395514e+03
## var 5:
## best........... 4.995327e+01
## mean........... 6.622813e+01
## variance........ 4.716981e+03
## var 6:
## best........... 1.994509e+02
## mean........... 2.065546e+02
## variance........ 2.732502e+03
## var 7:
```

```
## best............ 1.604937e+02
## mean............ 1.799062e+02
## variance........ 5.070348e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.658578e+02
## variance........ 6.798972e+02
## var 9:
## best............ 9.497919e+02
## mean............ 9.270441e+02
## variance........ 1.130370e+04
## var 10:
## best............ 3.713717e+02
## mean............ 3.762219e+02
## variance........ 9.713730e+02
## var 11:
## best............ 7.781697e+02
## mean............ 7.601214e+02
## variance........ 8.555075e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.029390e+02
## variance........ 2.597868e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.454481e+02
## variance........ 1.025128e+04
## var 14:
## best............ 6.011877e+02
## mean............ 6.034198e+02
## variance........ 2.291475e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.359450e+02
## variance........ 6.899606e+02
## var 16:
## best............ 1.633113e+02
## mean............ 1.747124e+02
## variance........ 3.084598e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.718913e+02
## variance........ 5.008780e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.202976e+02
## variance........ 7.324587e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.264041e+02
## variance........ 4.285627e+02
## var 20:
## best............ 1.402471e+01
## mean............ 3.551007e+01
```

```
## variance........ 5.898746e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.682507e+02
## variance........ 9.499110e+02
## var 22:
## best............ 4.807116e+01
## mean............ 6.146369e+01
## variance........ 1.446941e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.995400e+02
## variance........ 9.861251e+02
## var 24:
## best............ 1.891909e+01
## mean............ 4.194902e+01
## variance........ 1.064708e+04
## var 25:
## best............ 9.166215e+02
## mean............ 9.075629e+02
## variance........ 3.072845e+03
## var 26:
## best............ 2.292040e+01
## mean............ 2.936210e+02
## variance........ 4.961958e+03
## var 27:
## best............ 3.002178e+01
## mean............ 5.816722e+01
## variance........ 1.133126e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.509832e+02
## variance........ 1.995443e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.007611e+02
## variance........ 3.750598e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.517642e+02
## variance........ 2.211734e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.524552e+02
## variance........ 4.080665e+03
## var 32:
## best............ 1.878311e+02
## mean............ 2.085963e+02
## variance........ 6.181841e+03
## var 33:
## best............ 3.948430e+02
## mean............ 4.001194e+02
## variance........ 1.290380e+03
## var 34:
```

```
## best............ 9.670946e+01
## mean............ 1.191418e+02
## variance........ 8.232131e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.742273e+02
## variance........ 4.027696e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.735486e+01
## variance........ 4.504790e+03
## var 37:
## best............ 3.919096e+02
## mean............ 4.008983e+02
## variance........ 2.843089e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.278371e+02
## variance........ 2.540200e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.363757e+02
## variance........ 2.654582e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.579432e+02
## variance........ 2.177451e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.748441e+02
## variance........ 2.158764e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.148975e+02
## variance........ 3.235834e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.586065e+02
## variance........ 6.953233e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.988841e+02
## variance........ 1.418874e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.340917e+02
## variance........ 8.042039e+02
##
## GENERATION: 18
## Lexical Fit..... 2.624366e-06  1.221116e-05  3.635369e-03  3.099098e-02  3.099098e-02  3.662785e-02
## #unique......... 62, #Total UniqueCount: 1313
## var 1:
## best............ 8.240461e+02
## mean............ 8.122176e+02
```

```
## variance........ 3.736936e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.267614e+02
## variance........ 1.426556e+03
## var 3:
## best........... 6.326810e+02
## mean........... 6.252613e+02
## variance........ 1.835165e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.591977e+02
## variance........ 2.066394e+03
## var 5:
## best........... 4.995327e+01
## mean........... 5.572041e+01
## variance........ 3.353976e+03
## var 6:
## best........... 1.994509e+02
## mean........... 2.199956e+02
## variance........ 4.178531e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.804174e+02
## variance........ 9.797287e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.699460e+02
## variance........ 1.035951e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.351025e+02
## variance........ 2.318911e+03
## var 10:
## best........... 3.713717e+02
## mean........... 3.773298e+02
## variance........ 1.423182e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.671250e+02
## variance........ 3.457094e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.079059e+02
## variance........ 1.421449e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.411836e+02
## variance........ 6.094378e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.949096e+02
## variance........ 2.855894e+03
## var 15:
```

```
## best............ 1.328365e+02
## mean............ 1.502302e+02
## variance........ 4.849210e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.719965e+02
## variance........ 1.411816e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.732258e+02
## variance........ 4.121339e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.234527e+02
## variance........ 8.436534e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.188431e+02
## variance........ 2.638232e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.238802e+01
## variance........ 5.879928e+03
## var 21:
## best............ 4.709105e+02
## mean............ 4.783506e+02
## variance........ 7.843013e+02
## var 22:
## best............ 4.807116e+01
## mean............ 6.848229e+01
## variance........ 8.304244e+03
## var 23:
## best............ 3.934359e+02
## mean............ 4.037557e+02
## variance........ 1.553666e+03
## var 24:
## best............ 1.891909e+01
## mean............ 2.627418e+01
## variance........ 1.348231e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.060460e+02
## variance........ 3.041275e+03
## var 26:
## best............ 2.292040e+01
## mean............ 2.040351e+02
## variance........ 1.192816e+04
## var 27:
## best............ 3.002178e+01
## mean............ 5.030047e+01
## variance........ 1.073017e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.565945e+02
```

```
## variance........ 6.685470e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.116234e+02
## variance........ 3.606588e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.486155e+02
## variance........ 3.039174e+03
## var 31:
## best........... 8.645241e+02
## mean........... 8.427084e+02
## variance........ 8.025736e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.996626e+02
## variance........ 3.255189e+03
## var 33:
## best........... 3.948430e+02
## mean........... 3.954528e+02
## variance........ 4.634583e+02
## var 34:
## best........... 9.670946e+01
## mean........... 1.091970e+02
## variance........ 2.052335e+03
## var 35:
## best........... 1.635908e+02
## mean........... 1.756124e+02
## variance........ 4.032123e+03
## var 36:
## best........... 4.871291e+01
## mean........... 5.224271e+01
## variance........ 6.595160e+02
## var 37:
## best........... 3.919096e+02
## mean........... 4.029636e+02
## variance........ 2.458210e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.311218e+02
## variance........ 2.793777e+03
## var 39:
## best........... 5.350388e+02
## mean........... 5.346719e+02
## variance........ 3.147420e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.668934e+02
## variance........ 8.011136e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.744844e+02
## variance........ 2.009254e+03
## var 42:
```

```
## best............ 2.038571e+02
## mean............ 2.166713e+02
## variance........ 3.052928e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.499060e+02
## variance........ 1.448924e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.968191e+02
## variance........ 2.367979e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.314357e+02
## variance........ 9.226568e+02
##
## GENERATION: 19
## Lexical Fit..... 2.921564e-06  1.653168e-05  3.300819e-03  3.099098e-02  3.099098e-02  3.662785e-02
## #unique......... 67, #Total UniqueCount: 1380
## var 1:
## best............ 8.240461e+02
## mean............ 8.148096e+02
## variance........ 1.811593e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.281741e+02
## variance........ 6.811191e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.192864e+02
## variance........ 4.652235e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.681643e+02
## variance........ 1.849576e+03
## var 5:
## best............ 4.995327e+01
## mean............ 6.418204e+01
## variance........ 3.843805e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.184914e+02
## variance........ 4.814394e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.613751e+02
## variance........ 3.564366e+02
## var 8:
## best............ 6.699284e+02
## mean............ 6.629292e+02
## variance........ 3.772031e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.336818e+02
```

```
## variance........ 7.691247e+03
## var 10:
## best........... 3.713717e+02
## mean........... 3.774090e+02
## variance........ 4.750043e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.690748e+02
## variance........ 3.407865e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.061935e+02
## variance........ 3.115472e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.295054e+02
## variance........ 3.668108e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.987961e+02
## variance........ 7.969523e+02
## var 15:
## best........... 1.328365e+02
## mean........... 1.462529e+02
## variance........ 5.929377e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.705928e+02
## variance........ 1.407237e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.725112e+02
## variance........ 3.959384e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.226106e+02
## variance........ 8.730205e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.096978e+02
## variance........ 9.222611e+03
## var 20:
## best........... 1.402471e+01
## mean........... 2.148461e+01
## variance........ 2.577034e+03
## var 21:
## best........... 4.709105e+02
## mean........... 4.742530e+02
## variance........ 9.746891e+02
## var 22:
## best........... 4.807116e+01
## mean........... 7.166528e+01
## variance........ 1.079133e+04
## var 23:
```

```
## best............ 9.090861e+02
## mean............ 4.075955e+02
## variance........ 4.653462e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.836792e+01
## variance........ 9.547266e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.082701e+02
## variance........ 1.421292e+03
## var 26:
## best............ 2.292040e+01
## mean............ 4.628487e+01
## variance........ 3.670783e+03
## var 27:
## best............ 3.002178e+01
## mean............ 5.990865e+01
## variance........ 1.289797e+04
## var 28:
## best............ 2.436413e+02
## mean............ 2.456530e+02
## variance........ 9.116471e+02
## var 29:
## best............ 4.030825e+02
## mean............ 4.068320e+02
## variance........ 1.287611e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.583565e+02
## variance........ 7.261518e+02
## var 31:
## best............ 8.645241e+02
## mean............ 8.499408e+02
## variance........ 3.265063e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.988710e+02
## variance........ 3.574781e+03
## var 33:
## best............ 3.948430e+02
## mean............ 4.022515e+02
## variance........ 4.145705e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.151406e+02
## variance........ 7.186073e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.700579e+02
## variance........ 3.379628e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.641866e+01
```

```
## variance........ 5.910151e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.991280e+02
## variance........ 2.583483e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.309495e+02
## variance........ 2.027282e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.257376e+02
## variance........ 3.795498e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.555642e+02
## variance........ 2.797218e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.803782e+02
## variance........ 2.973623e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.223542e+02
## variance........ 5.931925e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.484939e+02
## variance........ 4.528807e+02
## var 44:
## best............ 9.090666e+02
## mean............ 8.975591e+02
## variance........ 3.247023e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.304422e+02
## variance........ 8.543184e+02
##
## GENERATION: 20
## Lexical Fit..... 3.437331e-06  2.638058e-05  2.585492e-03  3.099098e-02  3.780078e-02  4.498021e-02
## #unique......... 70, #Total UniqueCount: 1450
## var 1:
## best............ 8.240461e+02
## mean............ 8.088564e+02
## variance........ 4.754524e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.191338e+02
## variance........ 2.739069e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.303082e+02
## variance........ 2.664675e+03
## var 4:
```

```
## best............ 4.596208e+02
## mean............ 4.640192e+02
## variance........ 1.581433e+03
## var 5:
## best............ 5.093254e+01
## mean............ 5.616897e+01
## variance........ 1.185947e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.273893e+02
## variance........ 1.134092e+04
## var 7:
## best............ 1.604937e+02
## mean............ 1.687142e+02
## variance........ 1.118525e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.670715e+02
## variance........ 2.414901e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.256335e+02
## variance........ 1.073506e+04
## var 10:
## best............ 1.195810e+02
## mean............ 3.350666e+02
## variance........ 1.181342e+04
## var 11:
## best............ 7.781697e+02
## mean............ 7.538143e+02
## variance........ 1.000119e+04
## var 12:
## best............ 6.113928e+02
## mean............ 6.089448e+02
## variance........ 3.280111e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.369722e+02
## variance........ 7.531994e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.949976e+02
## variance........ 1.073735e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.558290e+02
## variance........ 9.872234e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.789376e+02
## variance........ 4.558223e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.675991e+02
```

```
## variance........ 9.134345e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.214275e+02
## variance........ 9.631041e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.174645e+02
## variance........ 1.912486e+03
## var 20:
## best........... 1.402471e+01
## mean........... 2.595025e+01
## variance........ 3.461385e+03
## var 21:
## best........... 2.682507e+02
## mean........... 4.696168e+02
## variance........ 3.133869e+03
## var 22:
## best........... 4.807116e+01
## mean........... 6.109914e+01
## variance........ 3.149088e+03
## var 23:
## best........... 3.934359e+02
## mean........... 6.388981e+02
## variance........ 6.257889e+04
## var 24:
## best........... 1.891909e+01
## mean........... 3.870612e+01
## variance........ 7.255196e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.045920e+02
## variance........ 3.989930e+03
## var 26:
## best........... 1.748745e+01
## mean........... 3.384445e+01
## variance........ 5.450371e+03
## var 27:
## best........... 3.002178e+01
## mean........... 4.348177e+01
## variance........ 3.896605e+03
## var 28:
## best........... 2.436413e+02
## mean........... 2.501090e+02
## variance........ 1.731361e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.133680e+02
## variance........ 3.306459e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.474519e+02
## variance........ 5.929103e+03
## var 31:
```

```
## best............ 8.645241e+02
## mean............ 8.580918e+02
## variance........ 5.768854e+02
## var 32:
## best............ 1.878311e+02
## mean............ 2.105853e+02
## variance........ 8.994656e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.930756e+02
## variance........ 6.451399e+02
## var 34:
## best............ 9.670946e+01
## mean............ 1.108499e+02
## variance........ 3.108545e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.757509e+02
## variance........ 2.351046e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.135419e+01
## variance........ 2.179840e+03
## var 37:
## best............ 3.919096e+02
## mean............ 4.011044e+02
## variance........ 3.503411e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.347374e+02
## variance........ 4.360974e+03
## var 39:
## best............ 5.350388e+02
## mean............ 5.363635e+02
## variance........ 5.670161e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.659970e+02
## variance........ 5.418469e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.799291e+02
## variance........ 7.367291e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.235155e+02
## variance........ 6.480343e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.452052e+02
## variance........ 4.972915e+02
## var 44:
## best............ 9.090666e+02
## mean............ 8.786170e+02
```

```
## variance........ 1.317224e+04
## var 45:
## best............ 7.366138e+02
## mean............ 7.245669e+02
## variance........ 3.099850e+03
##
## GENERATION: 21
## Lexical Fit..... 5.714703e-06  1.373098e-04  1.683652e-03  3.684583e-03  3.684583e-03  3.099098e-02
## #unique......... 65, #Total UniqueCount: 1515
## var 1:
## best............ 8.240461e+02
## mean............ 8.102786e+02
## variance........ 3.611757e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.199004e+02
## variance........ 2.074563e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.293577e+02
## variance........ 1.670928e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.596497e+02
## variance........ 7.842006e+02
## var 5:
## best............ 5.093254e+01
## mean............ 6.878071e+01
## variance........ 8.901420e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.044881e+02
## variance........ 1.037696e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.773325e+02
## variance........ 7.159021e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.686624e+02
## variance........ 2.237930e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.365684e+02
## variance........ 3.979390e+03
## var 10:
## best............ 1.195810e+02
## mean............ 2.037908e+02
## variance........ 1.256111e+04
## var 11:
## best............ 7.781697e+02
## mean............ 7.732922e+02
## variance........ 6.284498e+02
## var 12:
```

```
## best............ 6.113928e+02
## mean............ 6.004568e+02
## variance........ 2.638831e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.261431e+02
## variance........ 1.192273e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.024164e+02
## variance........ 3.841098e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.490108e+02
## variance........ 4.613840e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.698429e+02
## variance........ 1.310636e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.720970e+02
## variance........ 4.485666e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.337379e+02
## variance........ 1.947378e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.202955e+02
## variance........ 1.410604e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.144268e+01
## variance........ 5.300175e+03
## var 21:
## best............ 2.682507e+02
## mean............ 3.768255e+02
## variance........ 1.401438e+04
## var 22:
## best............ 4.807116e+01
## mean............ 6.451907e+01
## variance........ 7.970537e+03
## var 23:
## best............ 3.934359e+02
## mean............ 5.905782e+02
## variance........ 6.324416e+04
## var 24:
## best............ 1.891909e+01
## mean............ 3.777832e+01
## variance........ 5.025596e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.136748e+02
```

```
## variance........ 2.171993e+02
## var 26:
## best............ 1.748745e+01
## mean............ 3.797054e+01
## variance........ 5.627220e+03
## var 27:
## best............ 3.002178e+01
## mean............ 5.680747e+01
## variance........ 1.407371e+04
## var 28:
## best............ 8.944014e+01
## mean............ 2.464813e+02
## variance........ 3.028940e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.042426e+02
## variance........ 4.334591e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.537327e+02
## variance........ 2.879591e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.471102e+02
## variance........ 5.504068e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.991037e+02
## variance........ 1.994312e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.939419e+02
## variance........ 6.418301e+02
## var 34:
## best............ 9.670946e+01
## mean............ 1.024541e+02
## variance........ 1.179730e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.703679e+02
## variance........ 1.330958e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.311088e+01
## variance........ 5.657777e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.987401e+02
## variance........ 2.777448e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.305787e+02
## variance........ 1.736381e+03
## var 39:
```

```
## best............ 5.350388e+02
## mean............ 5.370840e+02
## variance........ 7.880944e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.597759e+02
## variance........ 2.757455e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.721600e+02
## variance........ 1.044112e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.162793e+02
## variance........ 3.211100e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.505130e+02
## variance........ 1.444962e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.972542e+02
## variance........ 2.533868e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.276774e+02
## variance........ 2.225578e+03
##
## GENERATION: 22
## Lexical Fit..... 8.412475e-06  2.218113e-04  2.129796e-03  2.129796e-03  5.574887e-03  2.487761e-02
## #unique......... 65, #Total UniqueCount: 1580
## var 1:
## best............ 8.240461e+02
## mean............ 8.146641e+02
## variance........ 3.481631e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.173112e+02
## variance........ 2.858510e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.193601e+02
## variance........ 1.689414e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.571537e+02
## variance........ 9.024178e+02
## var 5:
## best............ 5.093254e+01
## mean............ 6.431585e+01
## variance........ 3.996789e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.071002e+02
```

```
## variance........ 1.425377e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.627192e+02
## variance........ 2.089709e+02
## var 8:
## best........... 6.699284e+02
## mean........... 6.653831e+02
## variance........ 6.892943e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.469034e+02
## variance........ 3.246517e+02
## var 10:
## best........... 1.195810e+02
## mean........... 1.700379e+02
## variance........ 1.246130e+04
## var 11:
## best........... 7.781697e+02
## mean........... 7.741636e+02
## variance........ 3.804310e+02
## var 12:
## best........... 6.113928e+02
## mean........... 6.117163e+02
## variance........ 8.235956e+02
## var 13:
## best........... 1.193314e+02
## mean........... 1.276079e+02
## variance........ 2.689462e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.941896e+02
## variance........ 2.617555e+03
## var 15:
## best........... 1.328365e+02
## mean........... 1.468975e+02
## variance........ 4.692217e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.689484e+02
## variance........ 8.447329e+02
## var 17:
## best........... 8.877037e+02
## mean........... 8.776218e+02
## variance........ 2.918152e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.313878e+02
## variance........ 5.136021e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.276840e+02
## variance........ 2.425995e+02
## var 20:
```

```
## best............ 1.402471e+01
## mean............ 2.894782e+01
## variance........ 4.860466e+03
## var 21:
## best............ 2.682507e+02
## mean............ 3.413431e+02
## variance........ 9.225643e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.346029e+01
## variance........ 9.805522e+02
## var 23:
## best............ 3.934359e+02
## mean............ 5.339358e+02
## variance........ 3.861681e+04
## var 24:
## best............ 1.891909e+01
## mean............ 2.735321e+01
## variance........ 5.203554e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.134356e+02
## variance........ 3.442859e+02
## var 26:
## best............ 1.748745e+01
## mean............ 2.477366e+01
## variance........ 5.310180e+02
## var 27:
## best............ 3.002178e+01
## mean............ 3.060836e+01
## variance........ 2.100479e+01
## var 28:
## best............ 8.944014e+01
## mean............ 1.488640e+02
## variance........ 7.200548e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.045627e+02
## variance........ 4.293470e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.549467e+02
## variance........ 1.133010e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.588009e+02
## variance........ 1.430376e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.916529e+02
## variance........ 4.558736e+02
## var 33:
## best............ 3.948430e+02
## mean............ 3.955119e+02
```

```
## variance........ 2.611154e+02
## var 34:
## best............ 9.670946e+01
## mean............ 9.918474e+01
## variance........ 1.622977e+02
## var 35:
## best............ 1.635908e+02
## mean............ 1.705264e+02
## variance........ 1.411522e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.808508e+01
## variance........ 4.988549e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.948662e+02
## variance........ 1.362749e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.238199e+02
## variance........ 1.300431e+03
## var 39:
## best............ 6.672147e+02
## mean............ 5.365872e+02
## variance........ 4.908224e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.563095e+02
## variance........ 1.772910e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.724006e+02
## variance........ 1.337747e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.071702e+02
## variance........ 3.434452e+02
## var 43:
## best............ 2.450767e+02
## mean............ 2.467632e+02
## variance........ 2.020816e+02
## var 44:
## best............ 9.090666e+02
## mean............ 9.005803e+02
## variance........ 6.239421e+02
## var 45:
## best............ 7.366138e+02
## mean............ 7.268053e+02
## variance........ 5.519965e+03
##
## GENERATION: 23
## Lexical Fit..... 1.390177e-05  2.646263e-04  1.950192e-03  1.205139e-02  1.205139e-02  4.498021e-02
## #unique........ 60, #Total UniqueCount: 1640
## var 1:
```

```
## best............ 8.240461e+02
## mean............ 7.982037e+02
## variance........ 1.223599e+04
## var 2:
## best............ 1.080625e+02
## mean............ 1.202326e+02
## variance........ 2.758581e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.180580e+02
## variance........ 5.319188e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.587795e+02
## variance........ 2.806739e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.267427e+01
## variance........ 5.514423e+03
## var 6:
## best............ 1.994509e+02
## mean............ 2.080324e+02
## variance........ 2.557164e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.654315e+02
## variance........ 6.595649e+02
## var 8:
## best............ 6.699284e+02
## mean............ 6.555501e+02
## variance........ 4.550667e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.379419e+02
## variance........ 3.855073e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.382965e+02
## variance........ 4.344735e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.761509e+02
## variance........ 1.961043e+02
## var 12:
## best............ 6.113928e+02
## mean............ 6.083405e+02
## variance........ 2.206338e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.292497e+02
## variance........ 1.725278e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.961295e+02
```

```
## variance........ 5.107433e+03
## var 15:
## best........... 1.328365e+02
## mean........... 1.391563e+02
## variance........ 1.616322e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.729581e+02
## variance........ 1.437708e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.650465e+02
## variance........ 1.041601e+04
## var 18:
## best........... 9.444495e+02
## mean........... 9.386229e+02
## variance........ 1.877250e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.226809e+02
## variance........ 1.495862e+03
## var 20:
## best........... 1.402471e+01
## mean........... 3.627887e+01
## variance........ 7.233774e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.929382e+02
## variance........ 6.155804e+03
## var 22:
## best........... 4.807116e+01
## mean........... 6.113168e+01
## variance........ 3.558726e+03
## var 23:
## best........... 3.934359e+02
## mean........... 4.277432e+02
## variance........ 1.011278e+04
## var 24:
## best........... 1.891909e+01
## mean........... 2.634759e+01
## variance........ 1.160512e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.078815e+02
## variance........ 2.033517e+03
## var 26:
## best........... 1.748745e+01
## mean........... 2.389084e+01
## variance........ 1.292042e+03
## var 27:
## best........... 3.002178e+01
## mean........... 3.599166e+01
## variance........ 4.713533e+02
## var 28:
```

```
## best............ 3.973238e+01
## mean............ 1.031459e+02
## variance........ 6.559003e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.014127e+02
## variance........ 8.552908e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.549334e+02
## variance........ 2.576768e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.405443e+02
## variance........ 1.256908e+04
## var 32:
## best............ 1.878311e+02
## mean............ 2.075420e+02
## variance........ 1.066843e+04
## var 33:
## best............ 3.948430e+02
## mean............ 4.016961e+02
## variance........ 1.353203e+03
## var 34:
## best............ 9.670946e+01
## mean............ 1.197259e+02
## variance........ 9.023377e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.740683e+02
## variance........ 3.498236e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.284822e+01
## variance........ 4.302529e+03
## var 37:
## best............ 3.919096e+02
## mean............ 4.040062e+02
## variance........ 4.392522e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.276022e+02
## variance........ 4.053698e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.827773e+02
## variance........ 8.952743e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.671040e+02
## variance........ 6.621689e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.823958e+02
```

```
## variance........ 4.394086e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.120704e+02
## variance........ 2.859581e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.517015e+02
## variance........ 3.703723e+03
## var 44:
## best........... 9.090666e+02
## mean........... 9.031928e+02
## variance........ 5.897939e+02
## var 45:
## best........... 7.366138e+02
## mean........... 7.269272e+02
## variance........ 4.708383e+03
##
## GENERATION: 24
## Lexical Fit..... 1.411019e-05  3.155177e-04  1.651269e-03  7.337181e-03  7.337181e-03  3.893869e-02
## #unique......... 68, #Total UniqueCount: 1708
## var 1:
## best........... 8.240461e+02
## mean........... 8.208738e+02
## variance........ 6.575060e+02
## var 2:
## best........... 1.080625e+02
## mean........... 1.201390e+02
## variance........ 4.705479e+03
## var 3:
## best........... 6.326810e+02
## mean........... 6.226485e+02
## variance........ 2.994523e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.568063e+02
## variance........ 1.546540e+03
## var 5:
## best........... 5.093254e+01
## mean........... 7.003369e+01
## variance........ 1.016510e+04
## var 6:
## best........... 1.994509e+02
## mean........... 2.059205e+02
## variance........ 6.203149e+02
## var 7:
## best........... 1.604937e+02
## mean........... 1.700129e+02
## variance........ 1.727391e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.631260e+02
## variance........ 1.712899e+03
## var 9:
```

```
## best............ 9.497919e+02
## mean............ 9.484230e+02
## variance........ 6.937263e+01
## var 10:
## best............ 1.195810e+02
## mean............ 1.266465e+02
## variance........ 1.457530e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.748241e+02
## variance........ 5.173417e+02
## var 12:
## best............ 6.113928e+02
## mean............ 6.122251e+02
## variance........ 2.387395e+02
## var 13:
## best............ 1.193314e+02
## mean............ 1.343094e+02
## variance........ 4.024215e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.990637e+02
## variance........ 4.957115e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.411573e+02
## variance........ 1.827856e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.685431e+02
## variance........ 1.044223e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.724239e+02
## variance........ 6.277594e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.372169e+02
## variance........ 1.363570e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.203710e+02
## variance........ 3.464331e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.457789e+01
## variance........ 2.723799e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.746052e+02
## variance........ 2.318556e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.931616e+01
```

```
## variance........ 6.996392e+03
## var 23:
## best............ 3.934359e+02
## mean............ 3.985425e+02
## variance........ 1.287248e+03
## var 24:
## best............ 1.891909e+01
## mean............ 2.816970e+01
## variance........ 1.750239e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.052463e+02
## variance........ 3.237341e+03
## var 26:
## best............ 1.748745e+01
## mean............ 2.724009e+01
## variance........ 2.443829e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.463080e+01
## variance........ 5.294090e+02
## var 28:
## best............ 3.451081e+01
## mean............ 8.353881e+01
## variance........ 6.647819e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.039540e+02
## variance........ 1.781409e+02
## var 30:
## best............ 8.645336e+02
## mean............ 8.586142e+02
## variance........ 3.320926e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.477117e+02
## variance........ 8.620673e+03
## var 32:
## best............ 1.878311e+02
## mean............ 2.011437e+02
## variance........ 4.201863e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.959327e+02
## variance........ 2.233003e+02
## var 34:
## best............ 9.670946e+01
## mean............ 1.156626e+02
## variance........ 6.674233e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.666390e+02
## variance........ 3.797092e+02
## var 36:
```

```
## best............ 4.871291e+01
## mean............ 5.764814e+01
## variance........ 2.495924e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.942838e+02
## variance........ 2.883226e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.251497e+02
## variance........ 1.120961e+03
## var 39:
## best............ 5.478877e+02
## mean............ 6.113437e+02
## variance........ 3.176050e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.537003e+02
## variance........ 1.405226e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.784088e+02
## variance........ 6.113815e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.098051e+02
## variance........ 1.040800e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.490280e+02
## variance........ 3.103986e+02
## var 44:
## best............ 9.090666e+02
## mean............ 9.082991e+02
## variance........ 1.317633e+02
## var 45:
## best............ 7.366138e+02
## mean............ 7.374913e+02
## variance........ 5.607108e+02
##
## GENERATION: 25
## Lexical Fit..... 5.249596e-05  2.646263e-04  2.506449e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 65, #Total UniqueCount: 1773
## var 1:
## best............ 8.240461e+02
## mean............ 8.030161e+02
## variance........ 7.867401e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.206422e+02
## variance........ 3.259616e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.315869e+02
```

```
## variance........ 1.026805e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.567203e+02
## variance........ 2.203945e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.003282e+01
## variance........ 2.261181e+03
## var 6:
## best............ 1.506793e+02
## mean............ 2.256912e+02
## variance........ 1.480145e+04
## var 7:
## best............ 1.604937e+02
## mean............ 1.711120e+02
## variance........ 2.667796e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.609214e+02
## variance........ 2.905089e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.449120e+02
## variance........ 6.074645e+02
## var 10:
## best............ 1.195810e+02
## mean............ 1.228392e+02
## variance........ 2.279928e+02
## var 11:
## best............ 7.781697e+02
## mean............ 7.730614e+02
## variance........ 2.536554e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.142313e+02
## variance........ 4.522444e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.335250e+02
## variance........ 4.588350e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.911796e+02
## variance........ 7.581726e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.467173e+02
## variance........ 2.823436e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.769025e+02
## variance........ 4.708579e+03
## var 17:
```

```
## best............. 8.877037e+02
## mean............. 8.833800e+02
## variance........ 7.797663e+02
## var 18:
## best............. 9.444495e+02
## mean............. 9.315611e+02
## variance........ 5.976203e+03
## var 19:
## best............. 9.311189e+02
## mean............. 9.239058e+02
## variance........ 9.384801e+02
## var 20:
## best............. 1.402471e+01
## mean............. 2.474930e+01
## variance........ 3.541391e+03
## var 21:
## best............. 2.682507e+02
## mean............. 2.798539e+02
## variance........ 6.934980e+03
## var 22:
## best............. 4.807116e+01
## mean............. 7.110402e+01
## variance........ 8.061455e+03
## var 23:
## best............. 3.934359e+02
## mean............. 3.941787e+02
## variance........ 5.689043e+02
## var 24:
## best............. 1.891909e+01
## mean............. 3.068923e+01
## variance........ 3.134963e+03
## var 25:
## best............. 9.166215e+02
## mean............. 9.149735e+02
## variance........ 3.804298e+02
## var 26:
## best............. 1.748745e+01
## mean............. 2.409066e+01
## variance........ 1.789080e+03
## var 27:
## best............. 3.002178e+01
## mean............. 3.707561e+01
## variance........ 6.493138e+02
## var 28:
## best............. 3.973238e+01
## mean............. 6.172125e+01
## variance........ 8.674737e+03
## var 29:
## best............. 4.030825e+02
## mean............. 4.024663e+02
## variance........ 8.470124e+02
## var 30:
## best............. 8.645341e+02
## mean............. 8.401517e+02
```

```
## variance........ 1.128603e+04
## var 31:
## best............ 8.645241e+02
## mean............ 8.526736e+02
## variance........ 3.899091e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.936488e+02
## variance........ 2.576098e+03
## var 33:
## best............ 3.948430e+02
## mean............ 4.054371e+02
## variance........ 4.121560e+03
## var 34:
## best............ 9.670946e+01
## mean............ 9.946553e+01
## variance........ 2.990444e+02
## var 35:
## best............ 1.635908e+02
## mean............ 1.701954e+02
## variance........ 9.513977e+02
## var 36:
## best............ 4.871291e+01
## mean............ 5.792599e+01
## variance........ 1.681888e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.959380e+02
## variance........ 9.884151e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.337289e+02
## variance........ 4.049331e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.598078e+02
## variance........ 3.742476e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.607346e+02
## variance........ 5.406501e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.733703e+02
## variance........ 5.173287e+02
## var 42:
## best............ 2.038571e+02
## mean............ 2.129387e+02
## variance........ 3.302725e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.528549e+02
## variance........ 2.174480e+03
## var 44:
```

```
## best............ 9.090666e+02
## mean............ 9.028130e+02
## variance........ 1.089648e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.273817e+02
## variance........ 3.241753e+03
##
## GENERATION: 26
## Lexical Fit..... 6.006662e-05  3.542770e-04  1.859730e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 64, #Total UniqueCount: 1837
## var 1:
## best............ 8.240461e+02
## mean............ 8.122884e+02
## variance........ 4.440273e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.210194e+02
## variance........ 3.412222e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.274931e+02
## variance........ 3.630005e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.608741e+02
## variance........ 5.746934e+02
## var 5:
## best............ 5.093254e+01
## mean............ 8.034412e+01
## variance........ 1.512976e+04
## var 6:
## best............ 1.506793e+02
## mean............ 1.836772e+02
## variance........ 2.477657e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.694149e+02
## variance........ 3.943145e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.645161e+02
## variance........ 4.077880e+02
## var 9:
## best............ 9.497919e+02
## mean............ 9.357158e+02
## variance........ 7.641746e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.311567e+02
## variance........ 3.615000e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.690455e+02
```

```
## variance........ 2.954503e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.095595e+02
## variance........ 1.878506e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.250421e+02
## variance........ 8.538210e+02
## var 14:
## best........... 6.011877e+02
## mean........... 5.960605e+02
## variance........ 8.962147e+02
## var 15:
## best........... 1.328365e+02
## mean........... 1.496205e+02
## variance........ 9.067665e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.775458e+02
## variance........ 3.111811e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.773614e+02
## variance........ 4.696339e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.262285e+02
## variance........ 6.606723e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.136977e+02
## variance........ 6.093063e+03
## var 20:
## best........... 1.402471e+01
## mean........... 2.001378e+01
## variance........ 1.889597e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.793016e+02
## variance........ 4.138430e+03
## var 22:
## best........... 4.807116e+01
## mean........... 5.588331e+01
## variance........ 1.099584e+03
## var 23:
## best........... 3.934359e+02
## mean........... 3.961038e+02
## variance........ 6.646220e+02
## var 24:
## best........... 1.891909e+01
## mean........... 3.383350e+01
## variance........ 5.586452e+03
## var 25:
```

```
## best............ 9.166215e+02
## mean............ 9.096332e+02
## variance........ 1.389121e+03
## var 26:
## best............ 1.748745e+01
## mean............ 3.221484e+01
## variance........ 6.145518e+03
## var 27:
## best............ 3.002178e+01
## mean............ 5.059165e+01
## variance........ 7.049697e+03
## var 28:
## best............ 3.973238e+01
## mean............ 4.986017e+01
## variance........ 3.974730e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.029067e+02
## variance........ 6.909348e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.616448e+02
## variance........ 2.607405e+02
## var 31:
## best............ 8.645241e+02
## mean............ 8.522566e+02
## variance........ 5.276726e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.915105e+02
## variance........ 1.128454e+03
## var 33:
## best............ 3.948430e+02
## mean............ 4.054668e+02
## variance........ 4.889360e+03
## var 34:
## best............ 6.856318e+01
## mean............ 9.934154e+01
## variance........ 4.381546e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.754103e+02
## variance........ 5.766641e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.419253e+01
## variance........ 6.132790e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.989052e+02
## variance........ 4.495910e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.320130e+02
```

```
## variance........ 2.913328e+03
## var 39:
## best........... 5.592648e+02
## mean........... 5.498279e+02
## variance........ 7.805796e+02
## var 40:
## best........... 1.481206e+02
## mean........... 1.532100e+02
## variance........ 1.906483e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.696194e+02
## variance........ 3.717471e+02
## var 42:
## best........... 2.038571e+02
## mean........... 2.221434e+02
## variance........ 6.556536e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.583417e+02
## variance........ 6.514971e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.992204e+02
## variance........ 3.220476e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.370029e+02
## variance........ 1.415763e+03
##
## GENERATION: 27
## Lexical Fit..... 1.326970e-04  3.542770e-04  1.614896e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 68, #Total UniqueCount: 1905
## var 1:
## best........... 8.240461e+02
## mean........... 8.125651e+02
## variance........ 3.545706e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.213921e+02
## variance........ 4.757304e+03
## var 3:
## best........... 6.326810e+02
## mean........... 6.344852e+02
## variance........ 7.103669e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.555260e+02
## variance........ 1.649899e+03
## var 5:
## best........... 5.093254e+01
## mean........... 6.808243e+01
## variance........ 6.813218e+03
## var 6:
```

```
## best............ 1.506793e+02
## mean............ 1.647109e+02
## variance........ 2.461166e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.683748e+02
## variance........ 1.862870e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.655670e+02
## variance........ 1.884815e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.337602e+02
## variance........ 4.366988e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.262123e+02
## variance........ 1.436803e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.625111e+02
## variance........ 5.463071e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.117285e+02
## variance........ 1.227619e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.310532e+02
## variance........ 4.618019e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.970315e+02
## variance........ 3.807473e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.406307e+02
## variance........ 8.135137e+02
## var 16:
## best............ 1.633113e+02
## mean............ 1.796066e+02
## variance........ 6.192161e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.652318e+02
## variance........ 1.216530e+04
## var 18:
## best............ 9.444495e+02
## mean............ 9.251167e+02
## variance........ 5.535597e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.172874e+02
```

```
## variance........ 5.916512e+03
## var 20:
## best........... 1.402471e+01
## mean........... 4.162428e+01
## variance........ 1.229410e+04
## var 21:
## best........... 2.682507e+02
## mean........... 2.750250e+02
## variance........ 2.444101e+03
## var 22:
## best........... 4.807116e+01
## mean........... 7.270106e+01
## variance........ 1.186812e+04
## var 23:
## best........... 3.934359e+02
## mean........... 3.925190e+02
## variance........ 1.823618e+03
## var 24:
## best........... 1.891909e+01
## mean........... 2.251961e+01
## variance........ 2.735083e+02
## var 25:
## best........... 9.166215e+02
## mean........... 9.000158e+02
## variance........ 5.335395e+03
## var 26:
## best........... 1.748745e+01
## mean........... 3.354495e+01
## variance........ 5.793672e+03
## var 27:
## best........... 3.002178e+01
## mean........... 4.361590e+01
## variance........ 5.148682e+03
## var 28:
## best........... 3.973238e+01
## mean........... 5.900924e+01
## variance........ 9.842423e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.035870e+02
## variance........ 2.443633e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.518986e+02
## variance........ 4.778746e+03
## var 31:
## best........... 8.645241e+02
## mean........... 8.456991e+02
## variance........ 7.134671e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.930145e+02
## variance........ 3.110291e+03
## var 33:
```

```
## best............ 3.948430e+02
## mean............ 3.919671e+02
## variance........ 4.158670e+03
## var 34:
## best............ 4.923904e+01
## mean............ 9.380739e+01
## variance........ 6.854601e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.752906e+02
## variance........ 2.667137e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.649149e+01
## variance........ 3.905859e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.945363e+02
## variance........ 6.314526e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.455420e+02
## variance........ 8.052797e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.509466e+02
## variance........ 2.530028e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.659517e+02
## variance........ 7.597058e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.852086e+02
## variance........ 7.287468e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.118059e+02
## variance........ 4.285843e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.531857e+02
## variance........ 3.316922e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.922439e+02
## variance........ 6.524798e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.304752e+02
## variance........ 2.322386e+03
##
## GENERATION: 28
## Lexical Fit..... 1.446488e-04  4.530342e-04  1.451957e-03  1.205139e-02  1.205139e-02  1.391657e-02
```

```
## #unique......... 69, #Total UniqueCount: 1974
## var 1:
## best............ 8.240461e+02
## mean............ 8.158898e+02
## variance........ 1.305171e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.164479e+02
## variance........ 2.311096e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.285765e+02
## variance........ 1.610637e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.651055e+02
## variance........ 1.207510e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.802922e+01
## variance........ 6.954913e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.622437e+02
## variance........ 3.925505e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.711392e+02
## variance........ 2.221469e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.675526e+02
## variance........ 3.632386e+02
## var 9:
## best............ 9.497919e+02
## mean............ 9.372802e+02
## variance........ 3.199892e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.314808e+02
## variance........ 4.307882e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.732420e+02
## variance........ 9.523947e+02
## var 12:
## best............ 6.113928e+02
## mean............ 6.101376e+02
## variance........ 5.040010e+02
## var 13:
## best............ 1.193314e+02
## mean............ 1.371602e+02
## variance........ 9.305865e+03
## var 14:
```

```
## best............ 6.011877e+02
## mean............ 5.990199e+02
## variance........ 2.739359e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.443903e+02
## variance........ 3.613879e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.758705e+02
## variance........ 3.103256e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.801969e+02
## variance........ 2.888426e+03
## var 18:
## best............ 9.444495e+02
## mean............ 9.362359e+02
## variance........ 3.871707e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.202744e+02
## variance........ 3.770724e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.657641e+01
## variance........ 8.911502e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.740018e+02
## variance........ 2.951957e+03
## var 22:
## best............ 4.807116e+01
## mean............ 6.140225e+01
## variance........ 3.408472e+03
## var 23:
## best............ 8.226479e+02
## mean............ 3.979809e+02
## variance........ 2.247860e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.322760e+01
## variance........ 6.298956e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.983299e+02
## variance........ 7.751804e+03
## var 26:
## best............ 1.748745e+01
## mean............ 3.182222e+01
## variance........ 5.599628e+03
## var 27:
## best............ 3.002178e+01
## mean............ 4.547598e+01
```

```
## variance........ 7.328354e+03
## var 28:
## best........... 3.973238e+01
## mean........... 5.343560e+01
## variance........ 5.314325e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.024560e+02
## variance........ 3.157587e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.562874e+02
## variance........ 8.680478e+02
## var 31:
## best........... 8.645241e+02
## mean........... 8.459778e+02
## variance........ 6.451181e+03
## var 32:
## best........... 1.878311e+02
## mean........... 2.092335e+02
## variance........ 9.698773e+03
## var 33:
## best........... 3.948430e+02
## mean........... 3.950624e+02
## variance........ 1.855302e+03
## var 34:
## best........... 4.828850e+01
## mean........... 7.027157e+01
## variance........ 5.890311e+03
## var 35:
## best........... 1.635908e+02
## mean........... 1.815546e+02
## variance........ 1.068749e+04
## var 36:
## best........... 4.871291e+01
## mean........... 5.690797e+01
## variance........ 2.856563e+03
## var 37:
## best........... 3.919096e+02
## mean........... 4.010157e+02
## variance........ 1.375340e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.291848e+02
## variance........ 1.196389e+03
## var 39:
## best........... 5.592648e+02
## mean........... 5.590196e+02
## variance........ 6.510359e+02
## var 40:
## best........... 1.481206e+02
## mean........... 1.528240e+02
## variance........ 8.909780e+02
## var 41:
```

```
## best............ 1.670743e+02
## mean............ 1.709160e+02
## variance........ 6.137521e+02
## var 42:
## best............ 2.038571e+02
## mean............ 2.147207e+02
## variance........ 2.672410e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.476467e+02
## variance........ 8.329448e+02
## var 44:
## best............ 9.090666e+02
## mean............ 8.906270e+02
## variance........ 6.297509e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.247204e+02
## variance........ 2.703571e+03
##
## GENERATION: 29
## Lexical Fit..... 1.446488e-04  4.530342e-04  1.451957e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 67, #Total UniqueCount: 2041
## var 1:
## best............ 8.240461e+02
## mean............ 8.210283e+02
## variance........ 4.743689e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.215262e+02
## variance........ 7.385090e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.320681e+02
## variance........ 2.966593e+02
## var 4:
## best............ 4.596208e+02
## mean............ 4.593755e+02
## variance........ 1.011421e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.920651e+01
## variance........ 7.651851e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.651855e+02
## variance........ 3.554386e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.654000e+02
## variance........ 3.724867e+02
## var 8:
## best............ 6.699284e+02
## mean............ 6.587127e+02
```

```
## variance........ 4.802742e+03
## var 9:
## best........... 9.497919e+02
## mean........... 9.409118e+02
## variance........ 2.030442e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.277075e+02
## variance........ 2.280471e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.750912e+02
## variance........ 5.205096e+02
## var 12:
## best........... 6.113928e+02
## mean........... 6.027862e+02
## variance........ 5.653846e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.332181e+02
## variance........ 2.109657e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.876496e+02
## variance........ 4.027300e+03
## var 15:
## best........... 1.328365e+02
## mean........... 1.441274e+02
## variance........ 5.373347e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.762436e+02
## variance........ 2.981001e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.777917e+02
## variance........ 2.475235e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.385153e+02
## variance........ 7.930340e+02
## var 19:
## best........... 9.311189e+02
## mean........... 9.098473e+02
## variance........ 1.018193e+04
## var 20:
## best........... 1.402471e+01
## mean........... 3.506116e+01
## variance........ 7.630689e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.710130e+02
## variance........ 6.788537e+02
## var 22:
```

```
## best............ 4.807116e+01
## mean............ 5.397439e+01
## variance........ 7.962903e+02
## var 23:
## best............ 8.226479e+02
## mean............ 5.445582e+02
## variance........ 3.772297e+04
## var 24:
## best............ 1.891909e+01
## mean............ 3.151862e+01
## variance........ 3.123051e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.074691e+02
## variance........ 2.306021e+03
## var 26:
## best............ 1.748745e+01
## mean............ 4.053822e+01
## variance........ 1.131060e+04
## var 27:
## best............ 3.002178e+01
## mean............ 4.689534e+01
## variance........ 7.773672e+03
## var 28:
## best............ 3.973238e+01
## mean............ 5.111626e+01
## variance........ 3.575629e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.157260e+02
## variance........ 6.354391e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.581488e+02
## variance........ 1.217239e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.378980e+02
## variance........ 1.145258e+04
## var 32:
## best............ 1.878311e+02
## mean............ 2.008405e+02
## variance........ 4.786329e+03
## var 33:
## best............ 3.948430e+02
## mean............ 4.027402e+02
## variance........ 1.783295e+03
## var 34:
## best............ 4.828850e+01
## mean............ 5.785971e+01
## variance........ 2.537033e+03
## var 35:
## best............ 1.635908e+02
## mean............ 1.748376e+02
```

```
## variance........ 5.147269e+03
## var 36:
## best........... 4.871291e+01
## mean........... 6.431445e+01
## variance........ 5.606599e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.905738e+02
## variance........ 1.582872e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.223908e+02
## variance........ 1.474694e+03
## var 39:
## best........... 5.592648e+02
## mean........... 5.543918e+02
## variance........ 2.462780e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.615210e+02
## variance........ 3.809604e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.716765e+02
## variance........ 1.549834e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.169302e+02
## variance........ 3.915368e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.473823e+02
## variance........ 1.134594e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.954955e+02
## variance........ 4.568405e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.181386e+02
## variance........ 8.492350e+03
##
## GENERATION: 30
## Lexical Fit..... 1.680233e-04  4.530342e-04  1.171854e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 64, #Total UniqueCount: 2105
## var 1:
## best........... 8.240461e+02
## mean........... 8.143319e+02
## variance........ 3.401027e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.214266e+02
## variance........ 4.232769e+03
## var 3:
```

```
## best............ 6.326810e+02
## mean............ 6.202798e+02
## variance........ 3.717873e+03
## var 4:
## best............ 4.596208e+02
## mean............ 4.599827e+02
## variance........ 5.046369e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.060013e+01
## variance........ 7.397553e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.563377e+02
## variance........ 1.758050e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.719071e+02
## variance........ 5.215994e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.602949e+02
## variance........ 2.357768e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.326743e+02
## variance........ 9.155475e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.291342e+02
## variance........ 3.003603e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.805467e+02
## variance........ 4.539583e+02
## var 12:
## best............ 6.113928e+02
## mean............ 5.998153e+02
## variance........ 4.046948e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.218442e+02
## variance........ 2.147237e+02
## var 14:
## best............ 6.011877e+02
## mean............ 5.949460e+02
## variance........ 5.122203e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.459667e+02
## variance........ 3.875647e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.641066e+02
```

```
## variance........ 4.027542e+01
## var 17:
## best........... 8.877037e+02
## mean........... 8.733313e+02
## variance........ 7.021297e+03
## var 18:
## best........... 9.444495e+02
## mean........... 9.217931e+02
## variance........ 1.122625e+04
## var 19:
## best........... 9.311189e+02
## mean........... 9.227797e+02
## variance........ 3.601351e+03
## var 20:
## best........... 1.402471e+01
## mean........... 2.318313e+01
## variance........ 2.953276e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.793492e+02
## variance........ 4.833163e+03
## var 22:
## best........... 4.807116e+01
## mean........... 5.343260e+01
## variance........ 7.171756e+02
## var 23:
## best........... 8.226479e+02
## mean........... 7.579747e+02
## variance........ 1.714617e+04
## var 24:
## best........... 1.891909e+01
## mean........... 3.357938e+01
## variance........ 3.882731e+03
## var 25:
## best........... 9.166215e+02
## mean........... 8.952948e+02
## variance........ 1.289061e+04
## var 26:
## best........... 1.748745e+01
## mean........... 3.288576e+01
## variance........ 6.869880e+03
## var 27:
## best........... 3.002178e+01
## mean........... 3.050287e+01
## variance........ 4.052397e+01
## var 28:
## best........... 3.973238e+01
## mean........... 5.266000e+01
## variance........ 4.738753e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.019552e+02
## variance........ 7.767252e+02
## var 30:
```

```
## best............ 8.645341e+02
## mean............ 8.623566e+02
## variance........ 3.023953e+02
## var 31:
## best............ 8.645241e+02
## mean............ 8.532725e+02
## variance........ 3.469411e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.901648e+02
## variance........ 2.060928e+02
## var 33:
## best............ 3.948430e+02
## mean............ 4.099094e+02
## variance........ 6.686328e+03
## var 34:
## best............ 4.828850e+01
## mean............ 5.428893e+01
## variance........ 1.025529e+03
## var 35:
## best............ 2.748278e+02
## mean............ 1.680549e+02
## variance........ 8.643515e+02
## var 36:
## best............ 4.871291e+01
## mean............ 5.647078e+01
## variance........ 1.751053e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.973097e+02
## variance........ 1.967753e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.274866e+02
## variance........ 2.515221e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.552617e+02
## variance........ 4.717919e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.493731e+02
## variance........ 4.224214e+02
## var 41:
## best............ 1.670743e+02
## mean............ 1.719819e+02
## variance........ 1.390957e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.177826e+02
## variance........ 4.058837e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.629449e+02
```

```
## variance........ 9.183956e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.859094e+02
## variance........ 1.351609e+04
## var 45:
## best........... 7.366138e+02
## mean........... 7.249557e+02
## variance........ 4.452304e+03
##
## GENERATION: 31
## Lexical Fit..... 1.680233e-04  4.530342e-04  1.171854e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 64, #Total UniqueCount: 2169
## var 1:
## best........... 8.240461e+02
## mean........... 8.238570e+02
## variance........ 9.860737e+01
## var 2:
## best........... 1.080625e+02
## mean........... 1.082741e+02
## variance........ 1.863586e+01
## var 3:
## best........... 6.326810e+02
## mean........... 6.284236e+02
## variance........ 3.052578e+03
## var 4:
## best........... 4.596208e+02
## mean........... 4.574579e+02
## variance........ 3.114296e+03
## var 5:
## best........... 5.093254e+01
## mean........... 5.350683e+01
## variance........ 1.130271e+02
## var 6:
## best........... 1.506793e+02
## mean........... 1.569573e+02
## variance........ 1.540329e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.629159e+02
## variance........ 1.637389e+02
## var 8:
## best........... 6.699284e+02
## mean........... 6.675375e+02
## variance........ 1.511449e+03
## var 9:
## best........... 9.497919e+02
## mean........... 9.444698e+02
## variance........ 2.054794e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.216170e+02
## variance........ 9.941181e+01
## var 11:
```

```
## best............ 7.781697e+02
## mean............ 7.684810e+02
## variance........ 4.206965e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.022043e+02
## variance........ 4.233114e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.309512e+02
## variance........ 4.314595e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.019790e+02
## variance........ 3.894180e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.360973e+02
## variance........ 1.562527e+02
## var 16:
## best............ 1.633113e+02
## mean............ 1.662631e+02
## variance........ 1.353985e+02
## var 17:
## best............ 8.877037e+02
## mean............ 8.861515e+02
## variance........ 1.193454e+02
## var 18:
## best............ 9.444495e+02
## mean............ 9.338049e+02
## variance........ 4.857616e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.240884e+02
## variance........ 4.252881e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.123715e+01
## variance........ 2.401333e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.789858e+02
## variance........ 4.934774e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.469741e+01
## variance........ 2.413305e+03
## var 23:
## best............ 8.226479e+02
## mean............ 7.905555e+02
## variance........ 4.658229e+03
## var 24:
## best............ 1.891909e+01
## mean............ 2.380733e+01
```

```
## variance........ 2.612910e+02
## var 25:
## best............ 9.166215e+02
## mean............ 9.103565e+02
## variance........ 1.779073e+03
## var 26:
## best............ 1.748745e+01
## mean............ 2.380534e+01
## variance........ 1.224292e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.509328e+01
## variance........ 9.133785e+02
## var 28:
## best............ 3.973238e+01
## mean............ 4.989376e+01
## variance........ 4.544966e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.069730e+02
## variance........ 1.496104e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.529783e+02
## variance........ 4.843153e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.587924e+02
## variance........ 1.994499e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.963701e+02
## variance........ 2.724934e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.979252e+02
## variance........ 4.387615e+02
## var 34:
## best............ 4.828850e+01
## mean............ 6.008238e+01
## variance........ 6.425484e+03
## var 35:
## best............ 2.748278e+02
## mean............ 2.186948e+02
## variance........ 4.290198e+03
## var 36:
## best............ 4.871291e+01
## mean............ 5.245352e+01
## variance........ 3.031771e+02
## var 37:
## best............ 3.919096e+02
## mean............ 3.911547e+02
## variance........ 3.608516e+02
## var 38:
```

```
## best............ 3.230480e+02
## mean............ 3.282237e+02
## variance........ 3.077135e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.591465e+02
## variance........ 6.423544e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.545509e+02
## variance........ 1.094469e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.748464e+02
## variance........ 3.171404e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.135788e+02
## variance........ 5.122765e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.450721e+02
## variance........ 1.646109e+02
## var 44:
## best............ 9.090666e+02
## mean............ 8.976956e+02
## variance........ 4.611945e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.308982e+02
## variance........ 1.675448e+03
##
## GENERATION: 32
## Lexical Fit..... 2.094864e-04  2.915814e-04  8.633368e-04  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 69, #Total UniqueCount: 2238
## var 1:
## best............ 8.240461e+02
## mean............ 8.029745e+02
## variance........ 9.510132e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.221583e+02
## variance........ 3.913750e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.266039e+02
## variance........ 1.735704e+03
## var 4:
## best............ 9.932837e+02
## mean............ 4.636356e+02
## variance........ 4.522001e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.221720e+01
```

```
## variance........ 3.841157e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.552737e+02
## variance........ 1.766123e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.613285e+02
## variance........ 2.249739e+02
## var 8:
## best............ 6.699284e+02
## mean............ 6.676165e+02
## variance........ 1.598908e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.375212e+02
## variance........ 6.398499e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.361563e+02
## variance........ 6.792494e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.703127e+02
## variance........ 3.389016e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.145841e+02
## variance........ 6.656428e+02
## var 13:
## best............ 1.193314e+02
## mean............ 1.301550e+02
## variance........ 2.878492e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.965665e+02
## variance........ 3.552808e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.350537e+02
## variance........ 3.698485e+02
## var 16:
## best............ 1.633113e+02
## mean............ 1.726947e+02
## variance........ 4.280795e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.741568e+02
## variance........ 4.871823e+03
## var 18:
## best............ 3.197400e+02
## mean............ 7.625749e+02
## variance........ 7.501172e+04
## var 19:
```

```
## best............ 9.311189e+02
## mean............ 9.107054e+02
## variance........ 1.181716e+04
## var 20:
## best............ 1.402471e+01
## mean............ 2.301158e+01
## variance........ 2.161598e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.693325e+02
## variance........ 1.178552e+03
## var 22:
## best............ 4.807116e+01
## mean............ 4.956622e+01
## variance........ 8.468823e+01
## var 23:
## best............ 8.226479e+02
## mean............ 8.054450e+02
## variance........ 3.144714e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.544266e+01
## variance........ 7.041206e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.920080e+02
## variance........ 1.109434e+04
## var 26:
## best............ 1.748745e+01
## mean............ 3.850441e+01
## variance........ 1.084560e+04
## var 27:
## best............ 3.002178e+01
## mean............ 5.089700e+01
## variance........ 1.253687e+04
## var 28:
## best............ 3.973238e+01
## mean............ 5.723614e+01
## variance........ 1.277577e+04
## var 29:
## best............ 4.030825e+02
## mean............ 4.098224e+02
## variance........ 5.189079e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.382918e+02
## variance........ 1.433441e+04
## var 31:
## best............ 8.645241e+02
## mean............ 8.526825e+02
## variance........ 4.065231e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.922338e+02
```

```
## variance........ 1.139843e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.986220e+02
## variance........ 1.295187e+03
## var 34:
## best............ 4.828850e+01
## mean............ 6.056319e+01
## variance........ 6.107509e+03
## var 35:
## best............ 2.748278e+02
## mean............ 2.704209e+02
## variance........ 5.032982e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.680086e+01
## variance........ 5.222903e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.981302e+02
## variance........ 1.851738e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.275872e+02
## variance........ 2.125545e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.618436e+02
## variance........ 2.712244e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.506819e+02
## variance........ 1.514230e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.719416e+02
## variance........ 7.701179e+02
## var 42:
## best............ 2.038571e+02
## mean............ 2.081826e+02
## variance........ 9.109588e+02
## var 43:
## best............ 2.450767e+02
## mean............ 2.491442e+02
## variance........ 2.097882e+03
## var 44:
## best............ 9.090666e+02
## mean............ 9.025805e+02
## variance........ 3.098600e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.274356e+02
## variance........ 5.800249e+03
##
```

```
## GENERATION: 33
## Lexical Fit..... 2.540867e-04  4.530342e-04  1.021089e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 64, #Total UniqueCount: 2302
## var 1:
## best............ 8.240461e+02
## mean............ 8.213449e+02
## variance........ 4.664815e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.190158e+02
## variance........ 5.801268e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.300086e+02
## variance........ 3.672044e+02
## var 4:
## best............ 7.505777e+02
## mean............ 6.807425e+02
## variance........ 5.990915e+04
## var 5:
## best............ 5.093254e+01
## mean............ 6.398742e+01
## variance........ 7.612685e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.538833e+02
## variance........ 6.392998e+02
## var 7:
## best............ 1.604937e+02
## mean............ 1.707720e+02
## variance........ 4.632815e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.689199e+02
## variance........ 3.915384e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.272598e+02
## variance........ 8.963263e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.286205e+02
## variance........ 3.866789e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.801655e+02
## variance........ 7.193741e+02
## var 12:
## best............ 6.113928e+02
## mean............ 6.078167e+02
## variance........ 1.971396e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.296346e+02
```

```
## variance........ 2.595941e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.946119e+02
## variance........ 2.534126e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.468499e+02
## variance........ 5.643652e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.733528e+02
## variance........ 4.350117e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.725631e+02
## variance........ 7.127462e+03
## var 18:
## best............ 5.749947e+02
## mean............ 5.871161e+02
## variance........ 8.190324e+04
## var 19:
## best............ 9.311189e+02
## mean............ 9.149921e+02
## variance........ 5.507709e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.848858e+01
## variance........ 1.008633e+04
## var 21:
## best............ 2.682507e+02
## mean............ 2.811812e+02
## variance........ 5.316891e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.509479e+01
## variance........ 1.135264e+03
## var 23:
## best............ 8.225830e+02
## mean............ 8.018622e+02
## variance........ 7.729136e+03
## var 24:
## best............ 1.891909e+01
## mean............ 3.794735e+01
## variance........ 7.478997e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.096334e+02
## variance........ 2.701474e+03
## var 26:
## best............ 1.748745e+01
## mean............ 3.559606e+01
## variance........ 8.141463e+03
## var 27:
```

```
## best............ 3.002178e+01
## mean............ 4.907584e+01
## variance........ 1.023894e+04
## var 28:
## best............ 3.973238e+01
## mean............ 5.040569e+01
## variance........ 7.536990e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.057991e+02
## variance........ 4.309405e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.486424e+02
## variance........ 1.003786e+04
## var 31:
## best............ 8.645241e+02
## mean............ 8.615952e+02
## variance........ 3.723084e+02
## var 32:
## best............ 1.878311e+02
## mean............ 2.050797e+02
## variance........ 7.069835e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.968251e+02
## variance........ 5.981956e+02
## var 34:
## best............ 4.828862e+01
## mean............ 7.395227e+01
## variance........ 1.313797e+04
## var 35:
## best............ 2.692335e+02
## mean............ 2.741448e+02
## variance........ 3.284737e+02
## var 36:
## best............ 4.871291e+01
## mean............ 6.934711e+01
## variance........ 1.066611e+04
## var 37:
## best............ 3.919096e+02
## mean............ 3.936767e+02
## variance........ 4.291176e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.329262e+02
## variance........ 4.409245e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.591990e+02
## variance........ 4.975574e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.512921e+02
```

```
## variance........ 2.120717e+02
## var 41:
## best........... 1.670743e+02
## mean........... 1.837907e+02
## variance........ 5.373796e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.201584e+02
## variance........ 7.965214e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.455993e+02
## variance........ 1.636234e+02
## var 44:
## best........... 9.090666e+02
## mean........... 9.058522e+02
## variance........ 4.969514e+02
## var 45:
## best........... 7.366138e+02
## mean........... 7.290407e+02
## variance........ 2.680089e+03
##
## GENERATION: 34
## Lexical Fit..... 2.540867e-04  4.530342e-04  1.021089e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 69, #Total UniqueCount: 2371
## var 1:
## best........... 8.240461e+02
## mean........... 8.200018e+02
## variance........ 5.043169e+02
## var 2:
## best........... 1.080625e+02
## mean........... 1.336096e+02
## variance........ 1.245784e+04
## var 3:
## best........... 6.326810e+02
## mean........... 6.259972e+02
## variance........ 1.400979e+03
## var 4:
## best........... 7.505777e+02
## mean........... 7.724485e+02
## variance........ 1.369541e+04
## var 5:
## best........... 5.093254e+01
## mean........... 6.625779e+01
## variance........ 5.191375e+03
## var 6:
## best........... 1.506793e+02
## mean........... 1.674692e+02
## variance........ 7.292686e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.722732e+02
## variance........ 4.062872e+03
## var 8:
```

```
## best............ 6.699284e+02
## mean............ 6.647699e+02
## variance........ 2.066313e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.330983e+02
## variance........ 6.277510e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.261452e+02
## variance........ 1.554561e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.789921e+02
## variance........ 9.180471e+01
## var 12:
## best............ 6.113928e+02
## mean............ 6.071432e+02
## variance........ 3.530141e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.274115e+02
## variance........ 3.324781e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.974117e+02
## variance........ 3.360107e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.397167e+02
## variance........ 1.523744e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.766018e+02
## variance........ 4.531968e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.823932e+02
## variance........ 8.127130e+02
## var 18:
## best............ 5.749947e+02
## mean............ 5.383268e+02
## variance........ 9.612273e+03
## var 19:
## best............ 9.311189e+02
## mean............ 8.962807e+02
## variance........ 1.799107e+04
## var 20:
## best............ 1.402471e+01
## mean............ 2.628917e+01
## variance........ 5.323883e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.809980e+02
```

```
## variance........ 3.400698e+03
## var 22:
## best........... 4.807116e+01
## mean........... 6.026002e+01
## variance........ 2.565305e+03
## var 23:
## best........... 8.225830e+02
## mean........... 8.185680e+02
## variance........ 5.412952e+02
## var 24:
## best........... 1.891909e+01
## mean........... 3.295469e+01
## variance........ 8.184807e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.120972e+02
## variance........ 6.804955e+02
## var 26:
## best........... 1.748745e+01
## mean........... 2.663980e+01
## variance........ 3.750378e+03
## var 27:
## best........... 3.002178e+01
## mean........... 3.838594e+01
## variance........ 1.785255e+03
## var 28:
## best........... 3.973238e+01
## mean........... 5.359624e+01
## variance........ 5.433662e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.092336e+02
## variance........ 5.795435e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.604887e+02
## variance........ 8.901688e+02
## var 31:
## best........... 8.645241e+02
## mean........... 8.527648e+02
## variance........ 3.922012e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.918859e+02
## variance........ 9.603308e+02
## var 33:
## best........... 3.948430e+02
## mean........... 3.961718e+02
## variance........ 1.878581e+03
## var 34:
## best........... 4.828862e+01
## mean........... 6.850686e+01
## variance........ 1.144392e+04
## var 35:
```

```
## best............ 2.692335e+02
## mean............ 2.770270e+02
## variance........ 4.053622e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.958637e+01
## variance........ 8.360161e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.886714e+02
## variance........ 7.509083e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.235586e+02
## variance........ 3.464879e+01
## var 39:
## best............ 5.592648e+02
## mean............ 5.583110e+02
## variance........ 1.120473e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.569004e+02
## variance........ 2.657849e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.809221e+02
## variance........ 4.522666e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.083302e+02
## variance........ 9.463852e+02
## var 43:
## best............ 2.450767e+02
## mean............ 2.576880e+02
## variance........ 6.301193e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.934958e+02
## variance........ 5.566614e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.321958e+02
## variance........ 2.084443e+03
##
## GENERATION: 35
## Lexical Fit..... 2.540867e-04  4.530342e-04  1.021089e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 70, #Total UniqueCount: 2441
## var 1:
## best............ 8.240461e+02
## mean............ 8.148778e+02
## variance........ 3.199908e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.113867e+02
```

```
## variance........ 1.584614e+02
## var 3:
## best........... 6.326810e+02
## mean........... 6.248500e+02
## variance........ 3.497067e+03
## var 4:
## best........... 7.505777e+02
## mean........... 7.418880e+02
## variance........ 3.622586e+02
## var 5:
## best........... 5.093254e+01
## mean........... 6.406204e+01
## variance........ 5.481311e+03
## var 6:
## best........... 1.506793e+02
## mean........... 1.518137e+02
## variance........ 6.671284e+02
## var 7:
## best........... 1.604937e+02
## mean........... 1.595718e+02
## variance........ 3.111273e+02
## var 8:
## best........... 6.699284e+02
## mean........... 6.596917e+02
## variance........ 5.989670e+03
## var 9:
## best........... 9.497919e+02
## mean........... 9.451663e+02
## variance........ 7.820707e+02
## var 10:
## best........... 1.195810e+02
## mean........... 1.206361e+02
## variance........ 2.543895e+01
## var 11:
## best........... 7.781697e+02
## mean........... 7.751251e+02
## variance........ 4.689426e+02
## var 12:
## best........... 6.113928e+02
## mean........... 6.111507e+02
## variance........ 1.611105e+02
## var 13:
## best........... 1.193314e+02
## mean........... 1.231713e+02
## variance........ 3.238574e+02
## var 14:
## best........... 6.011877e+02
## mean........... 5.983777e+02
## variance........ 1.871845e+03
## var 15:
## best........... 1.328365e+02
## mean........... 1.314155e+02
## variance........ 2.618539e+02
## var 16:
```

```
## best............ 1.633113e+02
## mean............ 1.666287e+02
## variance........ 4.376474e+02
## var 17:
## best............ 8.877037e+02
## mean............ 8.846844e+02
## variance........ 1.556121e+02
## var 18:
## best............ 5.749947e+02
## mean............ 5.731678e+02
## variance........ 6.167249e+02
## var 19:
## best............ 9.311189e+02
## mean............ 9.184914e+02
## variance........ 3.254675e+03
## var 20:
## best............ 1.402471e+01
## mean............ 1.889346e+01
## variance........ 7.588710e+02
## var 21:
## best............ 2.682507e+02
## mean............ 2.786734e+02
## variance........ 2.615464e+03
## var 22:
## best............ 4.807116e+01
## mean............ 4.904101e+01
## variance........ 3.056684e+01
## var 23:
## best............ 8.225830e+02
## mean............ 8.203915e+02
## variance........ 2.123641e+02
## var 24:
## best............ 1.891909e+01
## mean............ 2.906579e+01
## variance........ 7.263226e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.108295e+02
## variance........ 1.702348e+03
## var 26:
## best............ 1.748745e+01
## mean............ 4.075086e+01
## variance........ 8.805608e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.687108e+01
## variance........ 5.783813e+02
## var 28:
## best............ 3.973238e+01
## mean............ 4.482040e+01
## variance........ 7.807764e+02
## var 29:
## best............ 4.030825e+02
## mean............ 4.097332e+02
```

```
## variance........ 2.957428e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.571582e+02
## variance........ 1.735931e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.533760e+02
## variance........ 2.477648e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.893026e+02
## variance........ 4.612641e+01
## var 33:
## best............ 3.948430e+02
## mean............ 3.982848e+02
## variance........ 2.947037e+03
## var 34:
## best............ 4.828862e+01
## mean............ 5.432008e+01
## variance........ 1.416560e+03
## var 35:
## best............ 2.692335e+02
## mean............ 2.764873e+02
## variance........ 2.813301e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.130672e+01
## variance........ 4.060116e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.951519e+02
## variance........ 4.694748e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.303761e+02
## variance........ 3.782740e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.579366e+02
## variance........ 1.218808e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.543939e+02
## variance........ 1.117498e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.703291e+02
## variance........ 1.478827e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.167264e+02
## variance........ 5.515275e+03
## var 43:
```

```
## best............ 2.450767e+02
## mean............ 2.483111e+02
## variance........ 5.048078e+02
## var 44:
## best............ 9.090666e+02
## mean............ 9.000397e+02
## variance........ 6.727699e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.334899e+02
## variance........ 1.440303e+03
##
## GENERATION: 36
## Lexical Fit..... 2.540867e-04  4.530342e-04  1.021089e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 66, #Total UniqueCount: 2507
## var 1:
## best............ 8.240461e+02
## mean............ 8.205375e+02
## variance........ 9.494025e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.181594e+02
## variance........ 1.607319e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.247109e+02
## variance........ 2.565505e+03
## var 4:
## best............ 7.505777e+02
## mean............ 7.353554e+02
## variance........ 3.740803e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.613154e+01
## variance........ 8.209219e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.545511e+02
## variance........ 1.606287e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.725139e+02
## variance........ 3.607813e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.628335e+02
## variance........ 2.278431e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.300124e+02
## variance........ 7.384475e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.266367e+02
```

```
## variance........ 2.285809e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.627297e+02
## variance........ 7.228397e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.063194e+02
## variance........ 1.142602e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.223120e+02
## variance........ 4.262131e+02
## var 14:
## best............ 6.011877e+02
## mean............ 5.958774e+02
## variance........ 1.678174e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.524489e+02
## variance........ 6.853966e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.771663e+02
## variance........ 6.911145e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.725459e+02
## variance........ 6.385955e+03
## var 18:
## best............ 5.749947e+02
## mean............ 5.635854e+02
## variance........ 4.758770e+03
## var 19:
## best............ 9.311189e+02
## mean............ 9.172165e+02
## variance........ 5.793004e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.182676e+01
## variance........ 1.209493e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.775873e+02
## variance........ 3.467736e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.602663e+01
## variance........ 2.072213e+03
## var 23:
## best............ 8.225830e+02
## mean............ 8.128691e+02
## variance........ 4.477666e+03
## var 24:
```

```
## best............ 1.891909e+01
## mean............ 2.669795e+01
## variance........ 1.229927e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.095086e+02
## variance........ 1.702081e+03
## var 26:
## best............ 1.748745e+01
## mean............ 3.630873e+01
## variance........ 7.061529e+03
## var 27:
## best............ 3.002178e+01
## mean............ 4.721941e+01
## variance........ 8.286660e+03
## var 28:
## best............ 3.973238e+01
## mean............ 6.607650e+01
## variance........ 1.330723e+04
## var 29:
## best............ 4.030825e+02
## mean............ 4.046897e+02
## variance........ 3.255202e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.484328e+02
## variance........ 5.809256e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.451187e+02
## variance........ 7.065830e+03
## var 32:
## best............ 1.878311e+02
## mean............ 2.050251e+02
## variance........ 8.153462e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.969135e+02
## variance........ 2.743721e+03
## var 34:
## best............ 4.828862e+01
## mean............ 5.350639e+01
## variance........ 6.469523e+02
## var 35:
## best............ 2.692335e+02
## mean............ 2.719052e+02
## variance........ 1.975110e+02
## var 36:
## best............ 4.871291e+01
## mean............ 6.112990e+01
## variance........ 6.050686e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.951812e+02
```

```
## variance........ 1.042381e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.243260e+02
## variance........ 1.574430e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.515758e+02
## variance........ 1.839315e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.516312e+02
## variance........ 1.835150e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.708079e+02
## variance........ 1.064455e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.269441e+02
## variance........ 9.699893e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.555109e+02
## variance........ 5.906532e+03
## var 44:
## best............ 9.090666e+02
## mean............ 8.964614e+02
## variance........ 4.945622e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.299201e+02
## variance........ 3.591911e+03
##
## GENERATION: 37
## Lexical Fit..... 2.540867e-04  4.530342e-04  1.021089e-03  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 68, #Total UniqueCount: 2575
## var 1:
## best............ 8.240461e+02
## mean............ 8.228609e+02
## variance........ 3.663214e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.163877e+02
## variance........ 1.643328e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.307933e+02
## variance........ 1.459519e+03
## var 4:
## best............ 7.505777e+02
## mean............ 7.447211e+02
## variance........ 5.296908e+02
## var 5:
```

```
## best............ 5.093254e+01
## mean............ 5.532555e+01
## variance........ 8.337722e+02
## var 6:
## best............ 1.506793e+02
## mean............ 1.557229e+02
## variance........ 7.031773e+02
## var 7:
## best............ 1.604937e+02
## mean............ 1.765004e+02
## variance........ 7.351997e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.664535e+02
## variance........ 8.358253e+02
## var 9:
## best............ 9.497919e+02
## mean............ 9.288811e+02
## variance........ 9.211404e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.267512e+02
## variance........ 2.124721e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.602337e+02
## variance........ 6.951207e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.066812e+02
## variance........ 1.831155e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.254491e+02
## variance........ 3.635077e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.995937e+02
## variance........ 4.363116e+02
## var 15:
## best............ 1.328365e+02
## mean............ 1.525899e+02
## variance........ 1.172958e+04
## var 16:
## best............ 1.633113e+02
## mean............ 1.678805e+02
## variance........ 1.308286e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.801914e+02
## variance........ 1.689942e+03
## var 18:
## best............ 5.749947e+02
## mean............ 5.656225e+02
```

```
## variance........ 2.429624e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.125476e+02
## variance........ 6.261050e+03
## var 20:
## best........... 1.402471e+01
## mean........... 3.274438e+01
## variance........ 7.393319e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.693194e+02
## variance........ 6.656644e+01
## var 22:
## best........... 4.807116e+01
## mean........... 5.552228e+01
## variance........ 2.724686e+03
## var 23:
## best........... 8.225830e+02
## mean........... 8.103077e+02
## variance........ 3.568001e+03
## var 24:
## best........... 1.891909e+01
## mean........... 2.356371e+01
## variance........ 1.358278e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.010642e+02
## variance........ 7.256007e+03
## var 26:
## best........... 1.748745e+01
## mean........... 2.737211e+01
## variance........ 1.649133e+03
## var 27:
## best........... 3.002178e+01
## mean........... 3.966906e+01
## variance........ 3.284424e+03
## var 28:
## best........... 3.973238e+01
## mean........... 4.877231e+01
## variance........ 2.568696e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.065424e+02
## variance........ 1.955774e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.520503e+02
## variance........ 8.696909e+03
## var 31:
## best........... 8.645241e+02
## mean........... 8.523656e+02
## variance........ 4.103137e+03
## var 32:
```

```
## best............ 1.878311e+02
## mean............ 1.928985e+02
## variance........ 9.489832e+02
## var 33:
## best............ 3.948430e+02
## mean............ 3.962743e+02
## variance........ 1.450842e+03
## var 34:
## best............ 4.828862e+01
## mean............ 6.002179e+01
## variance........ 6.370893e+03
## var 35:
## best............ 2.692335e+02
## mean............ 2.833323e+02
## variance........ 5.990890e+03
## var 36:
## best............ 4.871291e+01
## mean............ 5.570378e+01
## variance........ 1.759932e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.912577e+02
## variance........ 4.111016e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.294308e+02
## variance........ 1.953643e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.580759e+02
## variance........ 3.836359e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.663729e+02
## variance........ 6.124311e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.725537e+02
## variance........ 1.706024e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.114419e+02
## variance........ 2.118361e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.453779e+02
## variance........ 6.944247e+02
## var 44:
## best............ 9.090666e+02
## mean............ 8.935868e+02
## variance........ 7.079952e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.323357e+02
```

```
## variance........ 2.416524e+03
##
## GENERATION: 38
## Lexical Fit..... 2.614878e-04  4.530342e-04  8.232972e-04  1.205139e-02  1.205139e-02  1.391657e-02
## #unique......... 61, #Total UniqueCount: 2636
## var 1:
## best............ 8.241433e+02
## mean............ 8.211760e+02
## variance........ 1.618485e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.209557e+02
## variance........ 6.150461e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.267046e+02
## variance........ 1.401769e+03
## var 4:
## best............ 7.425599e+02
## mean............ 7.413003e+02
## variance........ 9.246437e+02
## var 5:
## best............ 5.093254e+01
## mean............ 6.155948e+01
## variance........ 3.707822e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.588429e+02
## variance........ 2.382398e+03
## var 7:
## best............ 1.532574e+02
## mean............ 1.606451e+02
## variance........ 1.980617e+01
## var 8:
## best............ 6.491344e+02
## mean............ 6.693894e+02
## variance........ 1.813646e+01
## var 9:
## best............ 9.497919e+02
## mean............ 9.415967e+02
## variance........ 6.029593e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.326493e+02
## variance........ 7.954315e+03
## var 11:
## best............ 7.876502e+02
## mean............ 7.770296e+02
## variance........ 5.117868e+01
## var 12:
## best............ 6.113928e+02
## mean............ 6.110801e+02
## variance........ 4.220874e+02
## var 13:
```

```
## best............. 1.193314e+02
## mean............. 1.211850e+02
## variance........ 1.305247e+02
## var 14:
## best............. 6.011877e+02
## mean............. 6.003540e+02
## variance........ 2.380213e+01
## var 15:
## best............. 1.328365e+02
## mean............. 1.357961e+02
## variance........ 6.910255e+02
## var 16:
## best............. 1.633113e+02
## mean............. 1.707950e+02
## variance........ 3.225720e+03
## var 17:
## best............. 8.877037e+02
## mean............. 8.692137e+02
## variance........ 9.117988e+03
## var 18:
## best............. 5.793627e+02
## mean............. 5.707013e+02
## variance........ 5.744964e+02
## var 19:
## best............. 9.324737e+02
## mean............. 9.214585e+02
## variance........ 3.223334e+03
## var 20:
## best............. 1.402471e+01
## mean............. 2.199898e+01
## variance........ 4.036352e+03
## var 21:
## best............. 2.682507e+02
## mean............. 2.715474e+02
## variance........ 8.417602e+02
## var 22:
## best............. 4.807116e+01
## mean............. 5.248076e+01
## variance........ 1.968922e+03
## var 23:
## best............. 8.226058e+02
## mean............. 8.206705e+02
## variance........ 2.961707e+02
## var 24:
## best............. 1.891909e+01
## mean............. 2.314919e+01
## variance........ 5.343923e+02
## var 25:
## best............. 9.166215e+02
## mean............. 9.143244e+02
## variance........ 1.390748e+02
## var 26:
## best............. 1.748745e+01
## mean............. 2.112631e+01
```

```
## variance........ 7.521923e+02
## var 27:
## best............ 3.002178e+01
## mean............ 3.534654e+01
## variance........ 2.217824e+03
## var 28:
## best............ 3.973238e+01
## mean............ 4.709410e+01
## variance........ 2.676840e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.074933e+02
## variance........ 1.903049e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.609899e+02
## variance........ 2.144138e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.582287e+02
## variance........ 1.974684e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.974242e+02
## variance........ 4.441959e+03
## var 33:
## best............ 3.928968e+02
## mean............ 3.949412e+02
## variance........ 3.789142e+01
## var 34:
## best............ 4.828858e+01
## mean............ 5.102765e+01
## variance........ 3.761353e+02
## var 35:
## best............ 2.711976e+02
## mean............ 2.711649e+02
## variance........ 1.892387e+01
## var 36:
## best............ 8.429730e+01
## mean............ 5.616343e+01
## variance........ 3.168968e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.933220e+02
## variance........ 1.502200e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.251262e+02
## variance........ 1.621471e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.567580e+02
## variance........ 3.722861e+02
## var 40:
```

```
## best............ 1.481206e+02
## mean............ 1.568957e+02
## variance........ 6.211739e+03
## var 41:
## best............ 1.622250e+02
## mean............ 1.744361e+02
## variance........ 2.588046e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.045286e+02
## variance........ 4.214165e+01
## var 43:
## best............ 2.450767e+02
## mean............ 2.456843e+02
## variance........ 1.804238e+01
## var 44:
## best............ 9.090666e+02
## mean............ 8.964359e+02
## variance........ 6.939754e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.312416e+02
## variance........ 1.379887e+03
##
## GENERATION: 39
## Lexical Fit..... 3.014667e-04  4.530342e-04  8.712200e-04  1.205139e-02  1.205139e-02  2.487761e-02
## #unique......... 61, #Total UniqueCount: 2697
## var 1:
## best............ 8.240461e+02
## mean............ 8.219163e+02
## variance........ 1.195517e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.090712e+02
## variance........ 2.292865e+01
## var 3:
## best............ 6.326810e+02
## mean............ 6.286807e+02
## variance........ 1.407753e+03
## var 4:
## best............ 7.506025e+02
## mean............ 7.415516e+02
## variance........ 7.915410e+02
## var 5:
## best............ 5.093254e+01
## mean............ 6.285889e+01
## variance........ 6.603761e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.490536e+02
## variance........ 2.487155e+02
## var 7:
## best............ 1.604937e+02
## mean............ 1.605891e+02
```

```
## variance........ 5.725186e+02
## var 8:
## best........... 6.699284e+02
## mean........... 6.564143e+02
## variance........ 7.350024e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.335607e+02
## variance........ 9.672910e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.315934e+02
## variance........ 5.918407e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.780504e+02
## variance........ 2.419225e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.127273e+02
## variance........ 2.160878e+02
## var 13:
## best........... 1.193314e+02
## mean........... 1.199938e+02
## variance........ 1.966295e+01
## var 14:
## best........... 6.011877e+02
## mean........... 5.949783e+02
## variance........ 3.033640e+03
## var 15:
## best........... 1.328365e+02
## mean........... 1.332895e+02
## variance........ 5.336206e+00
## var 16:
## best........... 1.633113e+02
## mean........... 1.637476e+02
## variance........ 5.105812e+01
## var 17:
## best........... 8.877037e+02
## mean........... 8.804000e+02
## variance........ 2.788383e+03
## var 18:
## best........... 5.584245e+02
## mean........... 5.640682e+02
## variance........ 3.930660e+03
## var 19:
## best........... 9.311189e+02
## mean........... 9.156541e+02
## variance........ 7.748039e+03
## var 20:
## best........... 1.402471e+01
## mean........... 1.814867e+01
## variance........ 9.732993e+02
## var 21:
```

```
## best............ 2.682507e+02
## mean............ 2.689804e+02
## variance........ 2.388514e+01
## var 22:
## best............ 4.807116e+01
## mean............ 5.347740e+01
## variance........ 2.788620e+03
## var 23:
## best............ 8.226104e+02
## mean............ 8.177969e+02
## variance........ 8.020574e+02
## var 24:
## best............ 5.390528e-01
## mean............ 2.638777e+01
## variance........ 5.393697e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.133339e+02
## variance........ 6.475780e+02
## var 26:
## best............ 1.748745e+01
## mean............ 1.846603e+01
## variance........ 2.187656e+01
## var 27:
## best............ 3.002178e+01
## mean............ 3.704217e+01
## variance........ 3.518638e+03
## var 28:
## best............ 3.973238e+01
## mean............ 4.680277e+01
## variance........ 1.936361e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.061071e+02
## variance........ 6.348770e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.644226e+02
## variance........ 3.277477e+02
## var 31:
## best............ 8.645241e+02
## mean............ 8.646896e+02
## variance........ 6.935414e+01
## var 32:
## best............ 1.878311e+02
## mean............ 1.919506e+02
## variance........ 2.764093e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.944486e+02
## variance........ 1.529898e+01
## var 34:
## best............ 4.828857e+01
## mean............ 5.566912e+01
```

```
## variance........ 4.535980e+03
## var 35:
## best........... 2.715954e+02
## mean........... 2.770491e+02
## variance........ 2.404981e+03
## var 36:
## best........... 4.871291e+01
## mean........... 7.278380e+01
## variance........ 6.001194e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.932213e+02
## variance........ 7.021804e+01
## var 38:
## best........... 3.230480e+02
## mean........... 3.246455e+02
## variance........ 1.497229e+02
## var 39:
## best........... 5.592648e+02
## mean........... 5.607260e+02
## variance........ 1.218264e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.532112e+02
## variance........ 2.615199e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.657247e+02
## variance........ 2.862438e+01
## var 42:
## best........... 2.038571e+02
## mean........... 2.075009e+02
## variance........ 9.170806e+02
## var 43:
## best........... 2.450767e+02
## mean........... 2.489430e+02
## variance........ 4.981221e+02
## var 44:
## best........... 9.090666e+02
## mean........... 9.021262e+02
## variance........ 4.248905e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.360952e+02
## variance........ 3.444115e+01
##
## GENERATION: 40
## Lexical Fit..... 3.014667e-04  4.530342e-04  8.712200e-04  1.205139e-02  1.205139e-02  2.487761e-02
## #unique......... 70, #Total UniqueCount: 2767
## var 1:
## best........... 8.240461e+02
## mean........... 8.143451e+02
## variance........ 5.719570e+03
## var 2:
```

```
## best............ 1.080625e+02
## mean............ 1.102283e+02
## variance........ 3.238826e+02
## var 3:
## best............ 6.326810e+02
## mean............ 6.301898e+02
## variance........ 3.080029e+03
## var 4:
## best............ 7.506025e+02
## mean............ 7.432401e+02
## variance........ 1.211663e+03
## var 5:
## best............ 5.093254e+01
## mean............ 6.201316e+01
## variance........ 3.747354e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.580794e+02
## variance........ 3.315000e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.674451e+02
## variance........ 2.469975e+03
## var 8:
## best............ 6.699284e+02
## mean............ 6.646121e+02
## variance........ 2.681436e+02
## var 9:
## best............ 9.497919e+02
## mean............ 9.402481e+02
## variance........ 5.404956e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.243039e+02
## variance........ 2.286798e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.757712e+02
## variance........ 2.277793e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.140683e+02
## variance........ 2.968633e+02
## var 13:
## best............ 1.193314e+02
## mean............ 1.273705e+02
## variance........ 3.192077e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.961343e+02
## variance........ 2.176050e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.369281e+02
```

```
## variance........ 1.441010e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.688106e+02
## variance........ 1.880525e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.644091e+02
## variance........ 1.208237e+04
## var 18:
## best........... 5.584245e+02
## mean........... 5.666012e+02
## variance........ 4.235008e+02
## var 19:
## best........... 9.311189e+02
## mean........... 9.186396e+02
## variance........ 8.113009e+03
## var 20:
## best........... 1.402471e+01
## mean........... 3.348956e+01
## variance........ 1.144832e+04
## var 21:
## best........... 2.682507e+02
## mean........... 2.795328e+02
## variance........ 3.736150e+03
## var 22:
## best........... 4.807116e+01
## mean........... 6.560072e+01
## variance........ 1.158139e+04
## var 23:
## best........... 8.226104e+02
## mean........... 8.011342e+02
## variance........ 9.306584e+03
## var 24:
## best........... 5.390528e-01
## mean........... 2.262364e+01
## variance........ 5.120889e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.055397e+02
## variance........ 4.589535e+03
## var 26:
## best........... 1.748745e+01
## mean........... 2.260227e+01
## variance........ 1.849362e+03
## var 27:
## best........... 3.002178e+01
## mean........... 4.526773e+01
## variance........ 7.789337e+03
## var 28:
## best........... 3.973238e+01
## mean........... 4.228369e+01
## variance........ 2.978793e+02
## var 29:
```

```
## best............ 4.030825e+02
## mean............ 4.068699e+02
## variance........ 1.233445e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.554843e+02
## variance........ 2.994225e+03
## var 31:
## best............ 8.645241e+02
## mean............ 8.525766e+02
## variance........ 3.464200e+03
## var 32:
## best............ 1.878311e+02
## mean............ 2.097012e+02
## variance........ 1.004423e+04
## var 33:
## best............ 3.948430e+02
## mean............ 3.920871e+02
## variance........ 1.968196e+03
## var 34:
## best............ 4.828857e+01
## mean............ 6.600147e+01
## variance........ 1.010652e+04
## var 35:
## best............ 2.715954e+02
## mean............ 2.909499e+02
## variance........ 8.949626e+03
## var 36:
## best............ 4.871291e+01
## mean............ 7.869761e+01
## variance........ 1.018621e+04
## var 37:
## best............ 3.919096e+02
## mean............ 3.907445e+02
## variance........ 8.558475e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.267212e+02
## variance........ 2.518504e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.517943e+02
## variance........ 2.043978e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.511708e+02
## variance........ 2.553927e+02
## var 41:
## best............ 1.670743e+02
## mean............ 1.653518e+02
## variance........ 3.167941e+02
## var 42:
## best............ 2.038571e+02
## mean............ 2.120739e+02
```

```
## variance........ 3.000133e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.616210e+02
## variance........ 6.396268e+03
## var 44:
## best........... 9.090666e+02
## mean........... 9.017361e+02
## variance........ 3.697919e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.358497e+02
## variance........ 8.233326e+02
##
## GENERATION: 41
## Lexical Fit..... 3.362057e-04  5.853344e-04  7.771477e-04  1.205139e-02  1.205139e-02  2.487761e-02
## #unique......... 68, #Total UniqueCount: 2835
## var 1:
## best........... 8.240461e+02
## mean........... 8.123990e+02
## variance........ 5.472326e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.100179e+02
## variance........ 5.632182e+02
## var 3:
## best........... 6.326810e+02
## mean........... 6.309870e+02
## variance........ 1.667021e+02
## var 4:
## best........... 7.506025e+02
## mean........... 7.461369e+02
## variance........ 1.080472e+03
## var 5:
## best........... 5.093254e+01
## mean........... 6.268942e+01
## variance........ 6.367453e+03
## var 6:
## best........... 1.506793e+02
## mean........... 1.581701e+02
## variance........ 1.717859e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.685724e+02
## variance........ 3.759102e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.674045e+02
## variance........ 3.343464e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.394629e+02
## variance........ 3.860422e+03
## var 10:
```

```
## best............ 1.195810e+02
## mean............ 1.379925e+02
## variance........ 8.310833e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.764920e+02
## variance........ 1.525353e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.106995e+02
## variance........ 2.580822e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.208994e+02
## variance........ 1.480325e+02
## var 14:
## best............ 6.011877e+02
## mean............ 5.878713e+02
## variance........ 4.597360e+03
## var 15:
## best............ 1.328365e+02
## mean............ 1.514081e+02
## variance........ 7.693438e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.677183e+02
## variance........ 1.874389e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.730960e+02
## variance........ 6.005876e+03
## var 18:
## best............ 5.584245e+02
## mean............ 5.599373e+02
## variance........ 1.219900e+03
## var 19:
## best............ 4.040678e+01
## mean............ 9.122534e+02
## variance........ 1.060033e+04
## var 20:
## best............ 1.402471e+01
## mean............ 2.872608e+01
## variance........ 6.758290e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.718305e+02
## variance........ 5.816927e+02
## var 22:
## best............ 4.807116e+01
## mean............ 6.744190e+01
## variance........ 1.328193e+04
## var 23:
## best............ 8.226104e+02
## mean............ 8.172708e+02
```

```
## variance........ 1.428971e+03
## var 24:
## best........... 5.390528e-01
## mean........... 1.659011e+01
## variance........ 5.923832e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.098367e+02
## variance........ 3.373253e+03
## var 26:
## best........... 1.748745e+01
## mean........... 2.672880e+01
## variance........ 4.828504e+03
## var 27:
## best........... 3.002178e+01
## mean........... 3.174432e+01
## variance........ 7.828227e+01
## var 28:
## best........... 3.973238e+01
## mean........... 5.643143e+01
## variance........ 1.138233e+04
## var 29:
## best........... 4.030825e+02
## mean........... 4.130850e+02
## variance........ 5.269599e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.576397e+02
## variance........ 2.710315e+03
## var 31:
## best........... 9.671229e+02
## mean........... 8.745629e+02
## variance........ 6.191654e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.958951e+02
## variance........ 2.095571e+03
## var 33:
## best........... 3.948430e+02
## mean........... 3.994019e+02
## variance........ 2.266987e+03
## var 34:
## best........... 4.828857e+01
## mean........... 5.894393e+01
## variance........ 3.518375e+03
## var 35:
## best........... 2.715954e+02
## mean........... 2.785815e+02
## variance........ 1.846348e+03
## var 36:
## best........... 4.871291e+01
## mean........... 5.885589e+01
## variance........ 1.292199e+03
## var 37:
```

```
## best............ 3.919096e+02
## mean............ 4.015198e+02
## variance........ 3.508765e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.289350e+02
## variance........ 1.144956e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.665363e+02
## variance........ 2.095202e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.543043e+02
## variance........ 3.271150e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.767828e+02
## variance........ 2.939701e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.130492e+02
## variance........ 2.475055e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.550934e+02
## variance........ 4.221431e+03
## var 44:
## best............ 9.090666e+02
## mean............ 9.044153e+02
## variance........ 2.687546e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.315659e+02
## variance........ 2.385129e+03
##
## GENERATION: 42
## Lexical Fit..... 3.707495e-04  3.921911e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 63, #Total UniqueCount: 2898
## var 1:
## best............ 8.240461e+02
## mean............ 8.162784e+02
## variance........ 3.185108e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.212114e+02
## variance........ 8.500218e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.297127e+02
## variance........ 7.858627e+02
## var 4:
## best............ 7.506025e+02
## mean............ 7.434434e+02
```

```
## variance........ 2.827209e+03
## var 5:
## best........... 5.093254e+01
## mean........... 5.463602e+01
## variance........ 8.641079e+02
## var 6:
## best........... 1.506793e+02
## mean........... 1.510920e+02
## variance........ 1.910344e+01
## var 7:
## best........... 1.604937e+02
## mean........... 1.649847e+02
## variance........ 2.654069e+03
## var 8:
## best........... 6.699284e+02
## mean........... 6.608845e+02
## variance........ 3.790912e+03
## var 9:
## best........... 9.497919e+02
## mean........... 9.430214e+02
## variance........ 4.683807e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.242694e+02
## variance........ 2.280085e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.768745e+02
## variance........ 6.070319e+01
## var 12:
## best........... 6.113928e+02
## mean........... 6.045814e+02
## variance........ 2.908940e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.244672e+02
## variance........ 1.156534e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.978876e+02
## variance........ 5.960180e+02
## var 15:
## best........... 1.328365e+02
## mean........... 1.381980e+02
## variance........ 1.683614e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.628785e+02
## variance........ 1.524601e+01
## var 17:
## best........... 8.877037e+02
## mean........... 8.735149e+02
## variance........ 5.644836e+03
## var 18:
```

```
## best............ 5.584245e+02
## mean............ 5.456642e+02
## variance........ 5.201679e+03
## var 19:
## best............ 2.620862e+01
## mean............ 5.696699e+02
## variance........ 1.675767e+05
## var 20:
## best............ 1.402471e+01
## mean............ 2.320488e+01
## variance........ 4.175673e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.806309e+02
## variance........ 5.853514e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.775406e+01
## variance........ 7.925548e+03
## var 23:
## best............ 8.226104e+02
## mean............ 8.161014e+02
## variance........ 2.212160e+03
## var 24:
## best............ 5.390528e-01
## mean............ 5.377473e+00
## variance........ 9.243125e+02
## var 25:
## best............ 9.166215e+02
## mean............ 9.070786e+02
## variance........ 5.515942e+03
## var 26:
## best............ 1.748745e+01
## mean............ 2.782211e+01
## variance........ 3.782707e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.733032e+01
## variance........ 2.787171e+03
## var 28:
## best............ 3.973238e+01
## mean............ 5.270950e+01
## variance........ 4.811676e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.026691e+02
## variance........ 1.583860e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.472828e+02
## variance........ 8.880549e+03
## var 31:
## best............ 9.687583e+02
## mean............ 9.160594e+02
```

```
## variance........ 3.057018e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.877456e+02
## variance........ 4.277234e+01
## var 33:
## best........... 3.948430e+02
## mean........... 4.009162e+02
## variance........ 1.311509e+03
## var 34:
## best........... 4.828857e+01
## mean........... 4.908807e+01
## variance........ 1.719194e+01
## var 35:
## best........... 2.715954e+02
## mean........... 2.721188e+02
## variance........ 1.722244e+01
## var 36:
## best........... 4.871291e+01
## mean........... 6.140585e+01
## variance........ 5.791347e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.933248e+02
## variance........ 9.193734e+02
## var 38:
## best........... 3.230480e+02
## mean........... 3.256107e+02
## variance........ 2.583730e+02
## var 39:
## best........... 5.592648e+02
## mean........... 5.523127e+02
## variance........ 9.332342e+02
## var 40:
## best........... 1.481206e+02
## mean........... 1.578567e+02
## variance........ 4.088334e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.759485e+02
## variance........ 5.946292e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.050065e+02
## variance........ 6.259590e+01
## var 43:
## best........... 2.450767e+02
## mean........... 2.488487e+02
## variance........ 1.606878e+03
## var 44:
## best........... 9.090666e+02
## mean........... 9.055256e+02
## variance........ 1.743710e+03
## var 45:
```

```
## best............ 7.366138e+02
## mean............ 7.264484e+02
## variance........ 5.822574e+03
##
## GENERATION: 43
## Lexical Fit..... 3.707495e-04  3.921911e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 66, #Total UniqueCount: 2964
## var 1:
## best............ 8.240461e+02
## mean............ 8.115950e+02
## variance........ 7.252124e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.143750e+02
## variance........ 3.032689e+03
## var 3:
## best............ 6.326810e+02
## mean............ 6.318924e+02
## variance........ 9.775264e+02
## var 4:
## best............ 7.506025e+02
## mean............ 7.467798e+02
## variance........ 1.250349e+03
## var 5:
## best............ 5.093254e+01
## mean............ 5.224538e+01
## variance........ 2.692997e+02
## var 6:
## best............ 1.506793e+02
## mean............ 1.730416e+02
## variance........ 1.006172e+04
## var 7:
## best............ 1.604937e+02
## mean............ 1.641384e+02
## variance........ 4.535233e+02
## var 8:
## best............ 6.699284e+02
## mean............ 6.653408e+02
## variance........ 2.621416e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.429606e+02
## variance........ 2.288131e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.410620e+02
## variance........ 1.071214e+04
## var 11:
## best............ 7.781697e+02
## mean............ 7.736159e+02
## variance........ 1.351180e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.038587e+02
```

```
## variance........ 2.331991e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.236459e+02
## variance........ 6.803727e+02
## var 14:
## best........... 6.011877e+02
## mean........... 5.931802e+02
## variance........ 2.837556e+03
## var 15:
## best........... 1.328365e+02
## mean........... 1.433981e+02
## variance........ 4.401840e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.645300e+02
## variance........ 7.567323e+01
## var 17:
## best........... 8.877037e+02
## mean........... 8.844925e+02
## variance........ 3.203645e+02
## var 18:
## best........... 5.584245e+02
## mean........... 5.540284e+02
## variance........ 2.075344e+03
## var 19:
## best........... 2.620862e+01
## mean........... 1.304689e+02
## variance........ 7.975827e+04
## var 20:
## best........... 1.402471e+01
## mean........... 2.019980e+01
## variance........ 9.622140e+02
## var 21:
## best........... 2.682507e+02
## mean........... 2.724095e+02
## variance........ 2.208826e+03
## var 22:
## best........... 4.807116e+01
## mean........... 6.061835e+01
## variance........ 6.985885e+03
## var 23:
## best........... 8.226104e+02
## mean........... 8.181109e+02
## variance........ 2.774954e+03
## var 24:
## best........... 5.390528e-01
## mean........... 7.565330e+00
## variance........ 2.199284e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.040753e+02
## variance........ 6.037065e+03
## var 26:
```

```
## best............ 1.748745e+01
## mean............ 2.567686e+01
## variance........ 4.448106e+03
## var 27:
## best............ 3.002178e+01
## mean............ 4.452807e+01
## variance........ 5.125884e+03
## var 28:
## best............ 3.973238e+01
## mean............ 5.114742e+01
## variance........ 5.430027e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.079453e+02
## variance........ 7.514463e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.573396e+02
## variance........ 4.797560e+03
## var 31:
## best............ 9.687583e+02
## mean............ 9.453103e+02
## variance........ 8.398669e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.999788e+02
## variance........ 5.864577e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.983120e+02
## variance........ 3.801753e+03
## var 34:
## best............ 4.828857e+01
## mean............ 5.646099e+01
## variance........ 2.858060e+03
## var 35:
## best............ 2.715954e+02
## mean............ 2.741653e+02
## variance........ 5.645780e+02
## var 36:
## best............ 4.871291e+01
## mean............ 5.116461e+01
## variance........ 2.772813e+02
## var 37:
## best............ 3.919096e+02
## mean............ 3.904726e+02
## variance........ 5.256936e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.235865e+02
## variance........ 2.027831e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.628894e+02
```

```
## variance........ 6.764397e+02
## var 40:
## best........... 1.481206e+02
## mean........... 1.693858e+02
## variance....... 1.281555e+04
## var 41:
## best........... 1.670743e+02
## mean........... 1.873286e+02
## variance....... 1.395577e+04
## var 42:
## best........... 2.038571e+02
## mean........... 2.089910e+02
## variance....... 2.584275e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.502180e+02
## variance....... 1.232951e+03
## var 44:
## best........... 9.090666e+02
## mean........... 8.941210e+02
## variance....... 7.135771e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.340041e+02
## variance....... 2.466162e+02
##
## GENERATION: 44
## Lexical Fit..... 4.323362e-04  4.581956e-04  6.279137e-04  7.232622e-03  7.232622e-03  2.487761e-02
## #unique......... 64, #Total UniqueCount: 3028
## var 1:
## best........... 8.240461e+02
## mean........... 8.156089e+02
## variance....... 1.775441e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.082972e+02
## variance....... 1.603028e+00
## var 3:
## best........... 6.341516e+02
## mean........... 6.149374e+02
## variance....... 9.824726e+03
## var 4:
## best........... 7.506025e+02
## mean........... 7.493542e+02
## variance....... 7.737972e+02
## var 5:
## best........... 5.093254e+01
## mean........... 6.504454e+01
## variance....... 9.145063e+03
## var 6:
## best........... 1.506793e+02
## mean........... 1.587823e+02
## variance....... 1.164149e+03
## var 7:
```

```
## best............ 1.604937e+02
## mean............ 1.653070e+02
## variance........ 2.251222e+03
## var 8:
## best............ 6.709075e+02
## mean............ 6.638158e+02
## variance........ 2.070368e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.447484e+02
## variance........ 7.916488e+02
## var 10:
## best............ 1.195810e+02
## mean............ 1.262752e+02
## variance........ 9.599554e+02
## var 11:
## best............ 7.781697e+02
## mean............ 7.623693e+02
## variance........ 7.638743e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.085998e+02
## variance........ 2.533717e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.267293e+02
## variance........ 1.758485e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.060712e+02
## variance........ 2.091622e+03
## var 15:
## best............ 1.383216e+02
## mean............ 1.440757e+02
## variance........ 4.719454e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.689077e+02
## variance........ 1.919063e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.702113e+02
## variance........ 7.426332e+03
## var 18:
## best............ 5.584245e+02
## mean............ 5.592425e+02
## variance........ 4.084308e+03
## var 19:
## best............ 2.165807e+01
## mean............ 3.609148e+01
## variance........ 5.571345e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.226020e+01
```

```
## variance........ 7.516804e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.706140e+02
## variance........ 3.260812e+02
## var 22:
## best........... 4.807116e+01
## mean........... 5.510207e+01
## variance........ 2.317833e+03
## var 23:
## best........... 8.226104e+02
## mean........... 8.122881e+02
## variance........ 3.363516e+03
## var 24:
## best........... 5.390528e-01
## mean........... 2.388553e+01
## variance........ 1.438738e+04
## var 25:
## best........... 9.166215e+02
## mean........... 9.087050e+02
## variance........ 2.880234e+03
## var 26:
## best........... 1.748745e+01
## mean........... 2.788885e+01
## variance........ 2.747421e+03
## var 27:
## best........... 3.002178e+01
## mean........... 3.646499e+01
## variance........ 3.198580e+03
## var 28:
## best........... 6.077818e+01
## mean........... 5.961073e+01
## variance........ 1.092052e+04
## var 29:
## best........... 4.030825e+02
## mean........... 4.087499e+02
## variance........ 2.456997e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.601957e+02
## variance........ 1.427160e+03
## var 31:
## best........... 9.671229e+02
## mean........... 9.471514e+02
## variance........ 1.054150e+04
## var 32:
## best........... 1.878311e+02
## mean........... 2.013256e+02
## variance........ 4.316931e+03
## var 33:
## best........... 3.948430e+02
## mean........... 3.976260e+02
## variance........ 1.648010e+03
## var 34:
```

```
## best............ 4.828857e+01
## mean............ 5.899628e+01
## variance........ 4.243964e+03
## var 35:
## best............ 2.715954e+02
## mean............ 2.781497e+02
## variance........ 1.828691e+03
## var 36:
## best............ 4.871291e+01
## mean............ 5.626124e+01
## variance........ 2.689863e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.940358e+02
## variance........ 1.173757e+03
## var 38:
## best............ 3.230480e+02
## mean............ 3.311444e+02
## variance........ 1.820447e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.567434e+02
## variance........ 2.423525e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.555247e+02
## variance........ 3.964103e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.748048e+02
## variance........ 1.263690e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.122131e+02
## variance........ 1.733660e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.550969e+02
## variance........ 5.372372e+03
## var 44:
## best............ 8.993915e+02
## mean............ 8.889487e+02
## variance........ 8.687423e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.291415e+02
## variance........ 4.177604e+03
##
## GENERATION: 45
## Lexical Fit..... 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 70, #Total UniqueCount: 3098
## var 1:
## best............ 8.240461e+02
## mean............ 8.184102e+02
```

```
## variance........ 1.431107e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.226813e+02
## variance........ 6.232043e+03
## var 3:
## best........... 6.334511e+02
## mean........... 6.286878e+02
## variance........ 2.871428e+03
## var 4:
## best........... 7.506025e+02
## mean........... 7.425567e+02
## variance........ 1.788051e+03
## var 5:
## best........... 5.093254e+01
## mean........... 6.632044e+01
## variance........ 6.225776e+03
## var 6:
## best........... 1.506793e+02
## mean........... 1.660023e+02
## variance........ 7.730491e+03
## var 7:
## best........... 1.604937e+02
## mean........... 1.672398e+02
## variance........ 2.720879e+03
## var 8:
## best........... 6.704411e+02
## mean........... 6.668666e+02
## variance........ 4.678536e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.313090e+02
## variance........ 9.928594e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.378558e+02
## variance........ 9.386144e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.663832e+02
## variance........ 4.072514e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.059419e+02
## variance........ 1.257439e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.257197e+02
## variance........ 2.669756e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.991586e+02
## variance........ 4.153460e+02
## var 15:
```

```
## best............ 1.357087e+02
## mean............ 1.408088e+02
## variance........ 7.861565e+02
## var 16:
## best............ 1.633113e+02
## mean............ 1.691522e+02
## variance........ 1.770429e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.750304e+02
## variance........ 2.696083e+03
## var 18:
## best............ 5.584245e+02
## mean............ 5.481740e+02
## variance........ 2.505839e+03
## var 19:
## best............ 2.060538e+01
## mean............ 4.094282e+01
## variance........ 8.696749e+03
## var 20:
## best............ 1.402471e+01
## mean............ 3.228602e+01
## variance........ 1.043831e+04
## var 21:
## best............ 2.682507e+02
## mean............ 2.719850e+02
## variance........ 1.184662e+03
## var 22:
## best............ 4.807116e+01
## mean............ 4.907885e+01
## variance........ 3.155334e+01
## var 23:
## best............ 8.226104e+02
## mean............ 8.168371e+02
## variance........ 3.999497e+03
## var 24:
## best............ 5.390528e-01
## mean............ 1.770609e+01
## variance........ 6.638913e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.889159e+02
## variance........ 1.305126e+04
## var 26:
## best............ 1.748745e+01
## mean............ 4.738912e+01
## variance........ 1.354289e+04
## var 27:
## best............ 3.002178e+01
## mean............ 3.856087e+01
## variance........ 2.084632e+03
## var 28:
## best............ 5.075274e+01
## mean............ 7.696045e+01
```

```
## variance........ 9.428485e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.059151e+02
## variance........ 3.322800e+02
## var 30:
## best........... 8.645341e+02
## mean........... 8.495793e+02
## variance........ 5.198110e+03
## var 31:
## best........... 9.667389e+02
## mean........... 9.551571e+02
## variance........ 4.398303e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.988284e+02
## variance........ 3.734020e+03
## var 33:
## best........... 3.948430e+02
## mean........... 4.004942e+02
## variance........ 4.130381e+03
## var 34:
## best........... 4.805541e+01
## mean........... 6.705202e+01
## variance........ 8.076107e+03
## var 35:
## best........... 2.715954e+02
## mean........... 2.805817e+02
## variance........ 1.906834e+03
## var 36:
## best........... 4.871291e+01
## mean........... 5.915537e+01
## variance........ 3.055391e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.989938e+02
## variance........ 3.138590e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.217193e+02
## variance........ 1.844353e+03
## var 39:
## best........... 5.592648e+02
## mean........... 5.534267e+02
## variance........ 4.817188e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.549892e+02
## variance........ 2.645178e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.695564e+02
## variance........ 4.404162e+02
## var 42:
```

```
## best............ 2.038571e+02
## mean............ 2.132463e+02
## variance........ 4.683007e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.531100e+02
## variance........ 3.224303e+03
## var 44:
## best............ 9.040004e+02
## mean............ 8.931095e+02
## variance........ 4.010434e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.218409e+02
## variance........ 5.700287e+03
##
## GENERATION: 46
## Lexical Fit..... 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 70, #Total UniqueCount: 3168
## var 1:
## best............ 8.240461e+02
## mean............ 8.176066e+02
## variance........ 1.465363e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.114019e+02
## variance........ 4.949147e+02
## var 3:
## best............ 6.334511e+02
## mean............ 6.278641e+02
## variance........ 2.716838e+03
## var 4:
## best............ 7.506025e+02
## mean............ 7.462338e+02
## variance........ 3.747192e+03
## var 5:
## best............ 5.093254e+01
## mean............ 7.349414e+01
## variance........ 1.039926e+04
## var 6:
## best............ 1.506793e+02
## mean............ 1.623552e+02
## variance........ 3.592032e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.660293e+02
## variance........ 1.910989e+03
## var 8:
## best............ 6.704411e+02
## mean............ 6.632163e+02
## variance........ 3.097375e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.387171e+02
```

```
## variance........ 4.576013e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.310309e+02
## variance........ 3.178749e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.698887e+02
## variance........ 4.232352e+03
## var 12:
## best........... 6.113928e+02
## mean........... 6.042722e+02
## variance........ 5.052202e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.229780e+02
## variance........ 8.132326e+02
## var 14:
## best........... 6.011877e+02
## mean........... 6.024250e+02
## variance........ 9.217220e+01
## var 15:
## best........... 1.357087e+02
## mean........... 1.590989e+02
## variance........ 1.366151e+04
## var 16:
## best........... 1.633113e+02
## mean........... 1.696478e+02
## variance........ 1.336749e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.787796e+02
## variance........ 1.314217e+03
## var 18:
## best........... 5.584245e+02
## mean........... 5.625126e+02
## variance........ 1.881631e+03
## var 19:
## best........... 2.060538e+01
## mean........... 2.359187e+01
## variance........ 2.019431e+02
## var 20:
## best........... 1.402471e+01
## mean........... 2.741537e+01
## variance........ 6.208221e+03
## var 21:
## best........... 2.682507e+02
## mean........... 2.729014e+02
## variance........ 3.206181e+03
## var 22:
## best........... 4.807116e+01
## mean........... 5.919929e+01
## variance........ 2.906659e+03
## var 23:
```

```
## best............ 8.226104e+02
## mean............ 8.218424e+02
## variance........ 4.207447e+01
## var 24:
## best............ 5.390528e-01
## mean............ 1.892133e+01
## variance........ 8.142959e+03
## var 25:
## best............ 9.166215e+02
## mean............ 8.996113e+02
## variance........ 6.220079e+03
## var 26:
## best............ 1.748745e+01
## mean............ 2.388630e+01
## variance........ 2.207776e+03
## var 27:
## best............ 3.002178e+01
## mean............ 4.541883e+01
## variance........ 6.415018e+03
## var 28:
## best............ 5.075274e+01
## mean............ 6.007663e+01
## variance........ 4.244602e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.034466e+02
## variance........ 9.627723e+02
## var 30:
## best............ 8.645341e+02
## mean............ 8.588067e+02
## variance........ 1.824473e+03
## var 31:
## best............ 9.667389e+02
## mean............ 9.458465e+02
## variance........ 1.387470e+04
## var 32:
## best............ 1.878311e+02
## mean............ 1.949803e+02
## variance........ 5.301447e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.934104e+02
## variance........ 1.865363e+02
## var 34:
## best............ 4.805541e+01
## mean............ 5.466878e+01
## variance........ 1.548273e+03
## var 35:
## best............ 2.715954e+02
## mean............ 2.856264e+02
## variance........ 6.512491e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.491278e+01
```

```
## variance........ 6.496528e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.918157e+02
## variance........ 1.498233e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.305448e+02
## variance........ 3.808630e+03
## var 39:
## best........... 5.592648e+02
## mean........... 5.565128e+02
## variance........ 2.720515e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.742477e+02
## variance........ 1.265708e+04
## var 41:
## best........... 1.670743e+02
## mean........... 1.755924e+02
## variance........ 1.768563e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.065554e+02
## variance........ 7.114736e+02
## var 43:
## best........... 2.450767e+02
## mean........... 2.520805e+02
## variance........ 1.661151e+03
## var 44:
## best........... 9.040004e+02
## mean........... 8.946358e+02
## variance........ 2.358334e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.280337e+02
## variance........ 6.581818e+03
##
## GENERATION: 47
## Lexical Fit..... 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 69, #Total UniqueCount: 3237
## var 1:
## best........... 8.240461e+02
## mean........... 8.189982e+02
## variance........ 2.071278e+03
## var 2:
## best........... 1.080625e+02
## mean........... 1.151627e+02
## variance........ 2.181779e+03
## var 3:
## best........... 6.334511e+02
## mean........... 6.229488e+02
## variance........ 4.491134e+03
## var 4:
```

```
## best............ 7.506025e+02
## mean............ 7.497911e+02
## variance........ 2.014281e+02
## var 5:
## best............ 5.093254e+01
## mean............ 6.371812e+01
## variance........ 6.189868e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.632782e+02
## variance........ 5.046391e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.644474e+02
## variance........ 1.183547e+03
## var 8:
## best............ 6.704411e+02
## mean............ 6.652953e+02
## variance........ 1.386414e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.379031e+02
## variance........ 3.429270e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.339091e+02
## variance........ 7.463190e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.717402e+02
## variance........ 1.516853e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.045868e+02
## variance........ 2.287004e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.298756e+02
## variance........ 4.548188e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.975672e+02
## variance........ 1.622789e+03
## var 15:
## best............ 1.357087e+02
## mean............ 1.381605e+02
## variance........ 4.227445e+02
## var 16:
## best............ 1.633113e+02
## mean............ 1.627609e+02
## variance........ 9.871884e+01
## var 17:
## best............ 8.877037e+02
## mean............ 8.771149e+02
```

```
## variance........ 3.121366e+03
## var 18:
## best........... 5.584245e+02
## mean........... 5.646750e+02
## variance........ 2.317321e+03
## var 19:
## best........... 2.060538e+01
## mean........... 3.032607e+01
## variance........ 3.230076e+03
## var 20:
## best........... 1.402471e+01
## mean........... 3.482630e+01
## variance........ 1.322212e+04
## var 21:
## best........... 2.682507e+02
## mean........... 2.691750e+02
## variance........ 4.009070e+01
## var 22:
## best........... 4.807116e+01
## mean........... 5.577671e+01
## variance........ 2.131625e+03
## var 23:
## best........... 8.226104e+02
## mean........... 8.180849e+02
## variance........ 2.311017e+03
## var 24:
## best........... 5.390528e-01
## mean........... 1.229987e+01
## variance........ 3.248687e+03
## var 25:
## best........... 9.166215e+02
## mean........... 9.126057e+02
## variance........ 8.578787e+02
## var 26:
## best........... 1.748745e+01
## mean........... 3.900560e+01
## variance........ 1.219462e+04
## var 27:
## best........... 3.002178e+01
## mean........... 3.817199e+01
## variance........ 3.436536e+03
## var 28:
## best........... 5.075274e+01
## mean........... 6.070099e+01
## variance........ 6.034636e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.072502e+02
## variance........ 1.902667e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.494059e+02
## variance........ 8.420076e+03
## var 31:
```

```
## best............ 9.667389e+02
## mean............ 9.487850e+02
## variance........ 1.335094e+04
## var 32:
## best............ 1.878311e+02
## mean............ 1.873004e+02
## variance........ 3.027960e+02
## var 33:
## best............ 3.948430e+02
## mean............ 3.917621e+02
## variance........ 2.079849e+03
## var 34:
## best............ 4.805541e+01
## mean............ 5.483714e+01
## variance........ 1.535070e+03
## var 35:
## best............ 2.715954e+02
## mean............ 2.802632e+02
## variance........ 3.949393e+03
## var 36:
## best............ 4.871291e+01
## mean............ 6.560822e+01
## variance........ 5.826095e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.931776e+02
## variance........ 1.594626e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.279357e+02
## variance........ 3.787514e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.586210e+02
## variance........ 8.985485e+02
## var 40:
## best............ 1.481206e+02
## mean............ 1.584162e+02
## variance........ 4.882068e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.897712e+02
## variance........ 1.339938e+04
## var 42:
## best............ 2.038571e+02
## mean............ 2.123277e+02
## variance........ 1.753844e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.466662e+02
## variance........ 3.562338e+02
## var 44:
## best............ 9.040004e+02
## mean............ 8.915921e+02
```

```
## variance........ 6.598565e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.292805e+02
## variance........ 2.127151e+03
##
## GENERATION: 48
## Lexical Fit..... 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 68, #Total UniqueCount: 3305
## var 1:
## best............ 8.240461e+02
## mean............ 8.130866e+02
## variance........ 5.393341e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.114025e+02
## variance........ 8.824211e+02
## var 3:
## best............ 6.334511e+02
## mean............ 6.362949e+02
## variance........ 3.945243e+02
## var 4:
## best............ 7.506025e+02
## mean............ 7.482480e+02
## variance........ 4.677185e+02
## var 5:
## best............ 5.093254e+01
## mean............ 5.503241e+01
## variance........ 7.146998e+02
## var 6:
## best............ 1.506793e+02
## mean............ 1.645526e+02
## variance........ 6.449162e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.754693e+02
## variance........ 8.927988e+03
## var 8:
## best............ 6.704411e+02
## mean............ 6.673858e+02
## variance........ 2.191747e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.460525e+02
## variance........ 5.886253e+02
## var 10:
## best............ 1.195810e+02
## mean............ 1.323485e+02
## variance........ 5.788545e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.688624e+02
## variance........ 2.155331e+03
## var 12:
```

```
## best............ 6.113928e+02
## mean............ 6.100760e+02
## variance........ 1.346468e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.369510e+02
## variance........ 7.219091e+03
## var 14:
## best............ 6.011877e+02
## mean............ 6.013583e+02
## variance........ 9.094405e+02
## var 15:
## best............ 1.357087e+02
## mean............ 1.527592e+02
## variance........ 8.501303e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.896601e+02
## variance........ 1.401686e+04
## var 17:
## best............ 8.877037e+02
## mean............ 8.784683e+02
## variance........ 2.910060e+03
## var 18:
## best............ 5.584245e+02
## mean............ 5.609693e+02
## variance........ 3.016483e+03
## var 19:
## best............ 2.060538e+01
## mean............ 2.978759e+01
## variance........ 2.803296e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.568108e+01
## variance........ 7.239940e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.745181e+02
## variance........ 1.653032e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.577281e+01
## variance........ 2.299438e+03
## var 23:
## best............ 8.226104e+02
## mean............ 8.093826e+02
## variance........ 4.763048e+03
## var 24:
## best............ 5.390528e-01
## mean............ 7.030149e+00
## variance........ 2.475022e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.095547e+02
```

```
## variance........ 1.740286e+03
## var 26:
## best........... 1.748745e+01
## mean........... 4.013603e+01
## variance........ 1.003680e+04
## var 27:
## best........... 3.002178e+01
## mean........... 4.227484e+01
## variance........ 4.879454e+03
## var 28:
## best........... 5.075274e+01
## mean........... 5.920575e+01
## variance........ 2.223577e+03
## var 29:
## best........... 4.030825e+02
## mean........... 4.103668e+02
## variance........ 4.908890e+03
## var 30:
## best........... 8.645341e+02
## mean........... 8.530306e+02
## variance........ 3.088921e+03
## var 31:
## best........... 9.667389e+02
## mean........... 9.495489e+02
## variance........ 5.865179e+03
## var 32:
## best........... 1.878311e+02
## mean........... 1.949950e+02
## variance........ 1.847455e+03
## var 33:
## best........... 3.948430e+02
## mean........... 3.991302e+02
## variance........ 1.769019e+03
## var 34:
## best........... 4.805541e+01
## mean........... 5.974326e+01
## variance........ 6.128868e+03
## var 35:
## best........... 2.715954e+02
## mean........... 2.770978e+02
## variance........ 1.645217e+03
## var 36:
## best........... 4.871291e+01
## mean........... 5.831188e+01
## variance........ 3.242386e+03
## var 37:
## best........... 3.919096e+02
## mean........... 4.013350e+02
## variance........ 2.965956e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.249192e+02
## variance........ 2.537803e+02
## var 39:
```

```
## best............ 5.592648e+02
## mean............ 5.543228e+02
## variance........ 2.229693e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.499826e+02
## variance........ 9.133697e+02
## var 41:
## best............ 1.670743e+02
## mean............ 1.781211e+02
## variance........ 4.321584e+03
## var 42:
## best............ 2.038571e+02
## mean............ 2.221916e+02
## variance........ 6.840685e+03
## var 43:
## best............ 2.450767e+02
## mean............ 2.607558e+02
## variance........ 7.229656e+03
## var 44:
## best............ 9.040004e+02
## mean............ 8.923740e+02
## variance........ 5.356099e+03
## var 45:
## best............ 7.366138e+02
## mean............ 7.277308e+02
## variance........ 3.404896e+03
##
## GENERATION: 49
## Lexical Fit..... 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique......... 69, #Total UniqueCount: 3374
## var 1:
## best............ 8.240461e+02
## mean............ 8.212447e+02
## variance........ 5.009694e+02
## var 2:
## best............ 1.080625e+02
## mean............ 1.238411e+02
## variance........ 1.010535e+04
## var 3:
## best............ 6.334511e+02
## mean............ 6.311336e+02
## variance........ 7.530576e+02
## var 4:
## best............ 7.506025e+02
## mean............ 7.487289e+02
## variance........ 3.957917e+02
## var 5:
## best............ 5.093254e+01
## mean............ 5.848400e+01
## variance........ 2.039559e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.526325e+02
```

```
## variance........ 3.570653e+02
## var 7:
## best........... 1.604937e+02
## mean........... 1.648948e+02
## variance........ 9.622565e+02
## var 8:
## best........... 6.704411e+02
## mean........... 6.678014e+02
## variance........ 3.508756e+02
## var 9:
## best........... 9.497919e+02
## mean........... 9.434063e+02
## variance........ 1.863967e+03
## var 10:
## best........... 1.195810e+02
## mean........... 1.307421e+02
## variance........ 6.179707e+03
## var 11:
## best........... 7.781697e+02
## mean........... 7.782335e+02
## variance........ 1.406307e+02
## var 12:
## best........... 6.113928e+02
## mean........... 6.167109e+02
## variance........ 1.719402e+03
## var 13:
## best........... 1.193314e+02
## mean........... 1.256182e+02
## variance........ 1.305505e+03
## var 14:
## best........... 6.011877e+02
## mean........... 5.985289e+02
## variance........ 4.411890e+02
## var 15:
## best........... 1.357087e+02
## mean........... 1.462995e+02
## variance........ 5.475486e+03
## var 16:
## best........... 1.633113e+02
## mean........... 1.784075e+02
## variance........ 7.589357e+03
## var 17:
## best........... 8.877037e+02
## mean........... 8.834404e+02
## variance........ 8.766903e+02
## var 18:
## best........... 5.584245e+02
## mean........... 5.603360e+02
## variance........ 2.686614e+03
## var 19:
## best........... 2.060538e+01
## mean........... 3.015014e+01
## variance........ 3.458505e+03
## var 20:
```

```
## best............ 1.402471e+01
## mean............ 1.831372e+01
## variance........ 1.414011e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.743643e+02
## variance........ 3.266046e+03
## var 22:
## best............ 4.807116e+01
## mean............ 5.868547e+01
## variance........ 4.744283e+03
## var 23:
## best............ 8.226104e+02
## mean............ 8.150345e+02
## variance........ 3.100486e+03
## var 24:
## best............ 5.390528e-01
## mean............ 5.220407e+00
## variance........ 8.679262e+02
## var 25:
## best............ 9.166215e+02
## mean............ 9.100821e+02
## variance........ 2.896159e+03
## var 26:
## best............ 1.748745e+01
## mean............ 2.151162e+01
## variance........ 4.470442e+02
## var 27:
## best............ 3.002178e+01
## mean............ 3.052611e+01
## variance........ 1.159380e+01
## var 28:
## best............ 5.075274e+01
## mean............ 5.076858e+01
## variance........ 3.538618e+00
## var 29:
## best............ 4.030825e+02
## mean............ 4.109421e+02
## variance........ 2.306944e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.640165e+02
## variance........ 1.001088e+02
## var 31:
## best............ 9.667389e+02
## mean............ 9.506316e+02
## variance........ 6.983194e+03
## var 32:
## best............ 1.878311e+02
## mean............ 1.964889e+02
## variance........ 2.048205e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.949994e+02
```

```
## variance........ 3.936663e+02
## var 34:
## best........... 4.805541e+01
## mean........... 4.924901e+01
## variance........ 4.153384e+01
## var 35:
## best........... 2.715954e+02
## mean........... 2.820432e+02
## variance........ 5.395677e+03
## var 36:
## best........... 4.871291e+01
## mean........... 5.601631e+01
## variance........ 2.745222e+03
## var 37:
## best........... 3.919096e+02
## mean........... 3.940717e+02
## variance........ 1.211140e+03
## var 38:
## best........... 3.230480e+02
## mean........... 3.247492e+02
## variance........ 2.898496e+02
## var 39:
## best........... 5.592648e+02
## mean........... 5.619244e+02
## variance........ 1.336186e+03
## var 40:
## best........... 1.481206e+02
## mean........... 1.516177e+02
## variance........ 1.328870e+03
## var 41:
## best........... 1.670743e+02
## mean........... 1.793061e+02
## variance........ 6.669138e+03
## var 42:
## best........... 2.038571e+02
## mean........... 2.032612e+02
## variance........ 3.980060e+01
## var 43:
## best........... 2.450767e+02
## mean........... 2.468739e+02
## variance........ 6.317001e+02
## var 44:
## best........... 9.040004e+02
## mean........... 9.042704e+02
## variance........ 2.507148e+01
## var 45:
## best........... 7.366138e+02
## mean........... 7.310763e+02
## variance........ 2.883611e+03
##
## GENERATION: 50
## Lexical Fit..... 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02
## #unique........ 70, #Total UniqueCount: 3444
## var 1:
```

```
## best............ 8.240461e+02
## mean............ 8.166818e+02
## variance........ 2.607720e+03
## var 2:
## best............ 1.080625e+02
## mean............ 1.144131e+02
## variance........ 1.736525e+03
## var 3:
## best............ 6.334511e+02
## mean............ 6.252729e+02
## variance........ 4.637093e+03
## var 4:
## best............ 7.506025e+02
## mean............ 7.488665e+02
## variance........ 1.050828e+02
## var 5:
## best............ 5.093254e+01
## mean............ 6.253867e+01
## variance........ 6.185298e+03
## var 6:
## best............ 1.506793e+02
## mean............ 1.572079e+02
## variance........ 1.795607e+03
## var 7:
## best............ 1.604937e+02
## mean............ 1.747089e+02
## variance........ 5.480857e+03
## var 8:
## best............ 6.704411e+02
## mean............ 6.656071e+02
## variance........ 2.644696e+03
## var 9:
## best............ 9.497919e+02
## mean............ 9.371813e+02
## variance........ 5.202931e+03
## var 10:
## best............ 1.195810e+02
## mean............ 1.374789e+02
## variance........ 7.626281e+03
## var 11:
## best............ 7.781697e+02
## mean............ 7.695615e+02
## variance........ 3.148379e+03
## var 12:
## best............ 6.113928e+02
## mean............ 6.009235e+02
## variance........ 6.094744e+03
## var 13:
## best............ 1.193314e+02
## mean............ 1.301758e+02
## variance........ 3.285738e+03
## var 14:
## best............ 6.011877e+02
## mean............ 5.955012e+02
```

```
## variance........ 1.385708e+03
## var 15:
## best............ 1.357087e+02
## mean............ 1.470265e+02
## variance........ 7.201512e+03
## var 16:
## best............ 1.633113e+02
## mean............ 1.676791e+02
## variance........ 3.182604e+03
## var 17:
## best............ 8.877037e+02
## mean............ 8.764068e+02
## variance........ 3.440650e+03
## var 18:
## best............ 5.584245e+02
## mean............ 5.669815e+02
## variance........ 3.055904e+03
## var 19:
## best............ 2.060538e+01
## mean............ 3.628458e+01
## variance........ 6.105468e+03
## var 20:
## best............ 1.402471e+01
## mean............ 2.497713e+01
## variance........ 2.871270e+03
## var 21:
## best............ 2.682507e+02
## mean............ 2.797301e+02
## variance........ 4.411925e+03
## var 22:
## best............ 4.807116e+01
## mean............ 6.801884e+01
## variance........ 8.608897e+03
## var 23:
## best............ 8.226104e+02
## mean............ 8.133140e+02
## variance........ 3.553643e+03
## var 24:
## best............ 5.390528e-01
## mean............ 1.749941e+01
## variance........ 7.365550e+03
## var 25:
## best............ 9.166215e+02
## mean............ 9.158346e+02
## variance........ 1.682484e+01
## var 26:
## best............ 1.748745e+01
## mean............ 2.338851e+01
## variance........ 1.350485e+03
## var 27:
## best............ 3.002178e+01
## mean............ 3.600308e+01
## variance........ 1.557977e+03
## var 28:
```

```
## best............ 5.075274e+01
## mean............ 5.885892e+01
## variance........ 2.712211e+03
## var 29:
## best............ 4.030825e+02
## mean............ 4.059387e+02
## variance........ 3.412512e+03
## var 30:
## best............ 8.645341e+02
## mean............ 8.610093e+02
## variance........ 3.858621e+02
## var 31:
## best............ 9.667389e+02
## mean............ 9.636476e+02
## variance........ 4.641470e+02
## var 32:
## best............ 1.878311e+02
## mean............ 1.947254e+02
## variance........ 2.335888e+03
## var 33:
## best............ 3.948430e+02
## mean............ 3.994578e+02
## variance........ 3.447440e+03
## var 34:
## best............ 4.805541e+01
## mean............ 5.959737e+01
## variance........ 4.423468e+03
## var 35:
## best............ 2.715954e+02
## mean............ 2.690607e+02
## variance........ 5.670042e+02
## var 36:
## best............ 4.871291e+01
## mean............ 5.511771e+01
## variance........ 2.201438e+03
## var 37:
## best............ 3.919096e+02
## mean............ 3.923785e+02
## variance........ 4.718316e+02
## var 38:
## best............ 3.230480e+02
## mean............ 3.297549e+02
## variance........ 4.717874e+03
## var 39:
## best............ 5.592648e+02
## mean............ 5.546276e+02
## variance........ 3.001025e+03
## var 40:
## best............ 1.481206e+02
## mean............ 1.526627e+02
## variance........ 1.674028e+03
## var 41:
## best............ 1.670743e+02
## mean............ 1.703627e+02
```

```
## variance........ 9.257528e+02
## var 42:
## best........... 2.038571e+02
## mean........... 2.113832e+02
## variance....... 1.608907e+03
## var 43:
## best........... 2.450767e+02
## mean........... 2.433968e+02
## variance....... 2.895207e+02
## var 44:
## best........... 9.040004e+02
## mean........... 8.986002e+02
## variance....... 1.286568e+03
## var 45:
## best........... 7.366138e+02
## mean........... 7.339644e+02
## variance....... 8.078930e+02
##
## 'wait.generations' limit reached.
## No significant improvement in 4 generations.
##
## Solution Lexical Fitness Value:
## 4.586050e-04  4.604406e-04  7.260933e-04  1.205139e-02  1.205139e-02  2.450731e-02  2.487761e-02  2.4
##
## Parameters at the Solution:
##
##  X[ 1] : 8.240461e+02
##  X[ 2] : 1.080625e+02
##  X[ 3] : 6.334511e+02
##  X[ 4] : 7.506025e+02
##  X[ 5] : 5.093254e+01
##  X[ 6] : 1.506793e+02
##  X[ 7] : 1.604937e+02
##  X[ 8] : 6.704411e+02
##  X[ 9] : 9.497919e+02
##  X[10] : 1.195810e+02
##  X[11] : 7.781697e+02
##  X[12] : 6.113928e+02
##  X[13] : 1.193314e+02
##  X[14] : 6.011877e+02
##  X[15] : 1.357087e+02
##  X[16] : 1.633113e+02
##  X[17] : 8.877037e+02
##  X[18] : 5.584245e+02
##  X[19] : 2.060538e+01
##  X[20] : 1.402471e+01
##  X[21] : 2.682507e+02
##  X[22] : 4.807116e+01
##  X[23] : 8.226104e+02
##  X[24] : 5.390528e-01
##  X[25] : 9.166215e+02
##  X[26] : 1.748745e+01
##  X[27] : 3.002178e+01
##  X[28] : 5.075274e+01
```

```
##  X[29] : 4.030825e+02
##  X[30] : 8.645341e+02
##  X[31] : 9.667389e+02
##  X[32] : 1.878311e+02
##  X[33] : 3.948430e+02
##  X[34] : 4.805541e+01
##  X[35] : 2.715954e+02
##  X[36] : 4.871291e+01
##  X[37] : 3.919096e+02
##  X[38] : 3.230480e+02
##  X[39] : 5.592648e+02
##  X[40] : 1.481206e+02
##  X[41] : 1.670743e+02
##  X[42] : 2.038571e+02
##  X[43] : 2.450767e+02
##  X[44] : 9.040004e+02
##  X[45] : 7.366138e+02
##
## Solution Found Generation 45
## Number of Generations Run 50
##
## Wed Jun 05 21:11:17 2019
## Total run time : 0 hours 4 minutes and 19 seconds
```

Table 7:

	Dependent variable:
	pctVV
treat	0.393**
	(0.191)
Constant	2.356***
	(0.144)
Observations	545
R^2	0.008
Adjusted R^2	0.006
Residual Std. Error	2.206 (df = 543)
F Statistic	4.234** (df = 1; 543)

Note: *p<0.1; **p<0.05; ***p<0.01