

lab9

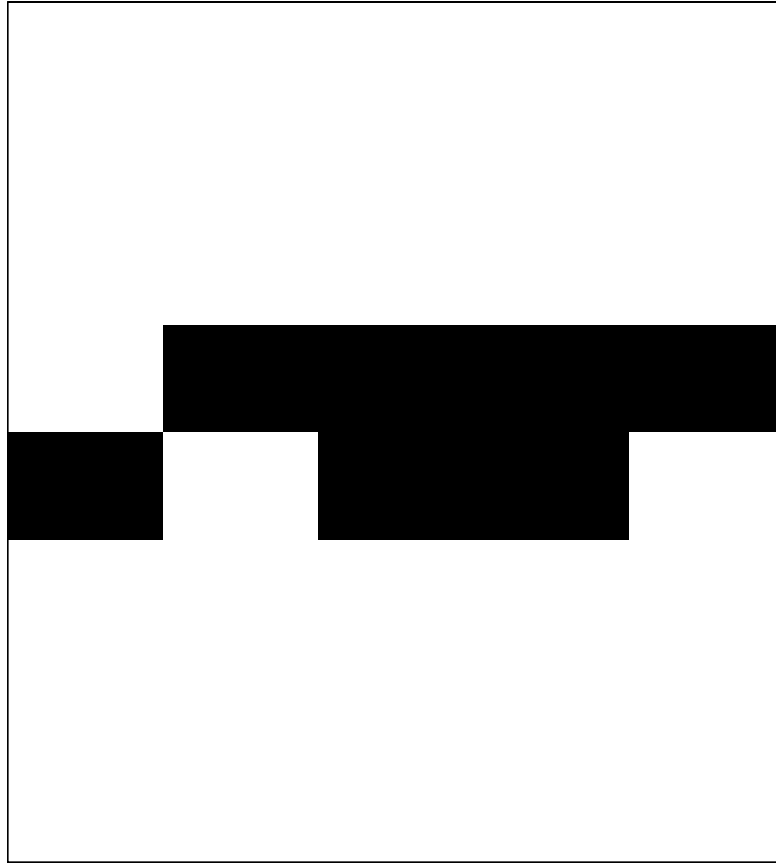
Claire Jellison

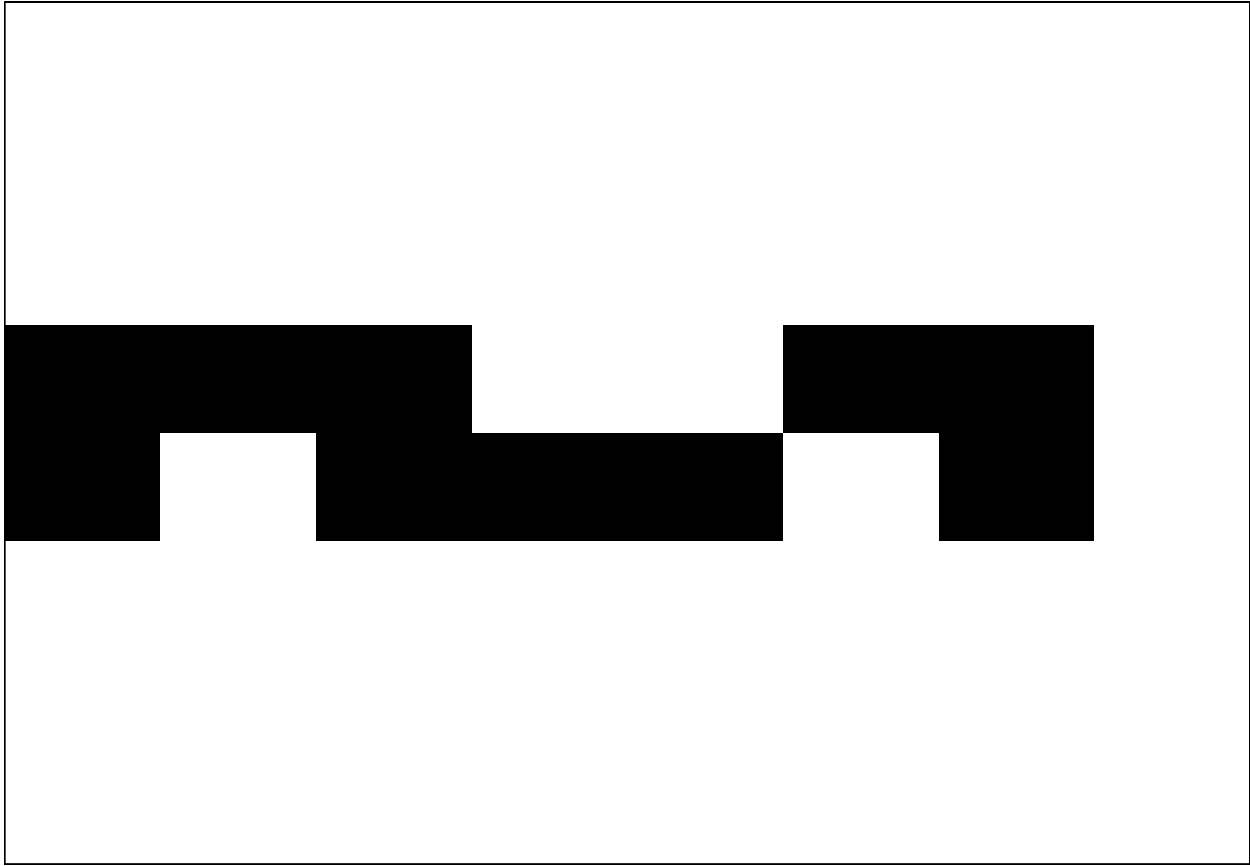
11/20/2019

##	letter	V7	V8	V9	V10	V11	V12	V13	V14	V23	V24	V25	V26	V27	V28	V29	V30	V39
## 1	o	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
## 2	m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
## 3	m	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
## 4	a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
## 5	n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
## 6	d	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
##	V40	V41	V42	V43	V44	V45	V46	V55	V56	V57	V58	V59	V60	V61	V62	V71	V72	V73
## 1	1	1	1	1	1	0	0	1	1	0	0	0	0	1	1	1	0	0
## 2	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	0
## 3	0	0	0	0	0	0	0	1	1	1	0	0	1	1	0	1	0	1
## 4	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0
## 5	0	0	0	1	1	1	0	0	0	1	1	0	0	1	0	1	1	1
## 6	1	0	1	1	0	0	0	0	0	1	0	1	1	0	0	0	0	1
##	V74	V75	V76	V77	V78	V87	V88	V89	V90	V91	V92	V93	V94	V103	V104	V105	V106	
## 1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	1	1	1	
## 2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
## 3	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
## 4	1	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	
## 5	0	0	0	1	0	1	1	0	0	0	0	1	0	1	0	0	0	
## 6	1	0	0	1	0	0	1	1	1	0	0	1	0	1	0	0	1	
##	V107	V108	V109	V110	V119	V120	V121	V122	V123	V124	V125	V126						
## 1	1	0	0	0	0	0	0	0	0	0	0	0						
## 2	0	0	0	0	0	0	0	0	0	0	0	0						
## 3	0	0	0	0	0	0	0	0	0	0	0	0						
## 4	0	0	0	0	0	0	0	0	0	0	0	0						
## 5	0	0	0	1	0	0	0	0	0	0	0	0						
## 6	1	1	0	0	1	1	1	0	1	1	1	1						

The rows represent letters and the columns represent whether certain pixels are colored in.

The letter I chose is M. This is how a couple of the M's look.





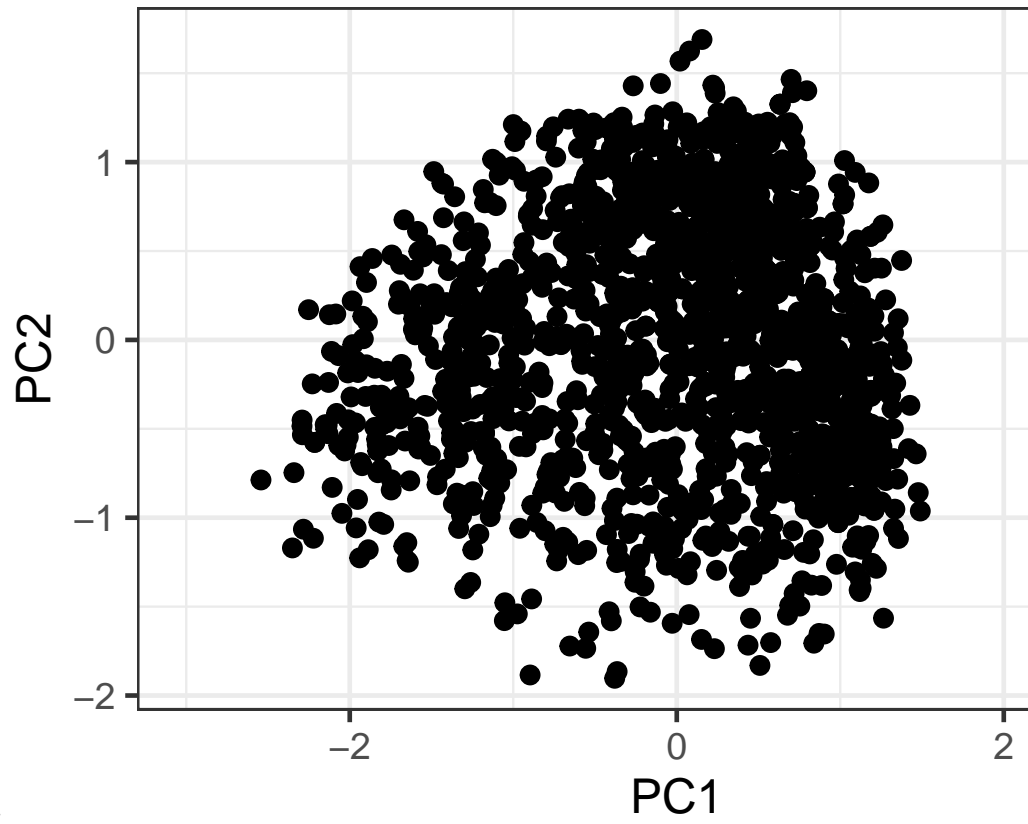
This is the compilation of the average “M”.

```
## [1] 1602 65

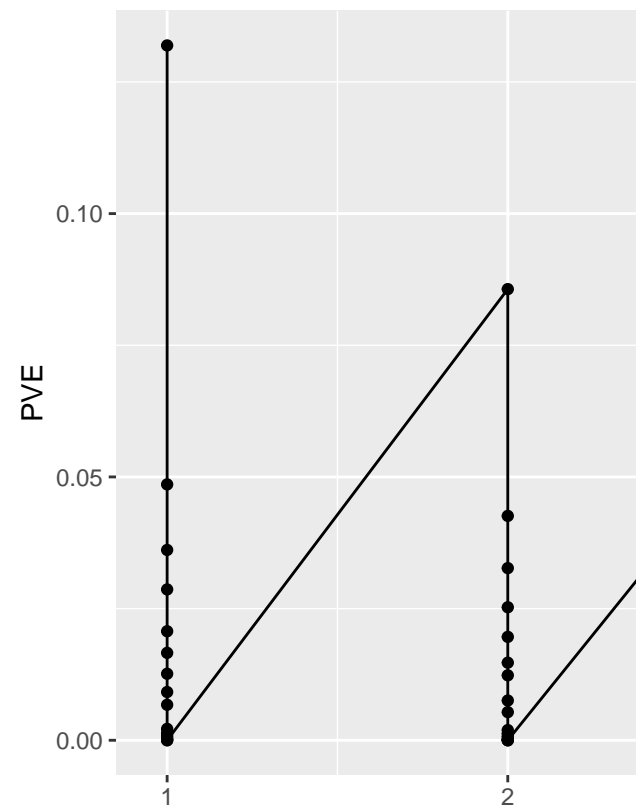
##          V7          V8          V9          V10          V11
## 0.0000000000 0.0000000000 0.0006242197 0.0006242197 0.0000000000
##          V12          V13          V14          V23          V24
## 0.0000000000 0.0000000000 0.0018726592 0.0093632959 0.0093632959
##          V25          V26          V27          V28          V29
## 0.0106117353 0.0081148564 0.0068664170 0.0074906367 0.0137328340
##          V30          V39          V40          V41          V42
## 0.0187265918 0.1704119850 0.1260923845 0.1760299625 0.1360799001
##          V43          V44          V45          V46          V55
## 0.1079900125 0.1754057428 0.2097378277 0.1635455680 0.8152309613
##          V56          V57          V58          V59          V60
## 0.6828963795 0.7159800250 0.6791510612 0.5992509363 0.6710362047
##          V61          V62          V71          V72          V73
## 0.6504369538 0.5911360799 0.9394506866 0.5998751561 0.2990012484
##          V74          V75          V76          V77          V78
## 0.6828963795 0.7109862672 0.2933832709 0.2865168539 0.8470661673
##          V87          V88          V89          V90          V91
## 0.6086142322 0.1928838951 0.0586766542 0.2228464419 0.1922596754
##          V92          V93          V94          V103         V104
## 0.0474406991 0.0830212235 0.5568039950 0.0836454432 0.0193508115
##          V105         V106         V107         V108         V109
## 0.0068664170 0.0112359551 0.0087390762 0.0099875156 0.0093632959
##          V110         V119         V120         V121         V122
```

```
## 0.0530586767 0.0074906367 0.0006242197 0.0006242197 0.0006242197
##          V123          V124          V125          V126
## 0.0012484395 0.0006242197 0.0012484395 0.0012484395
```

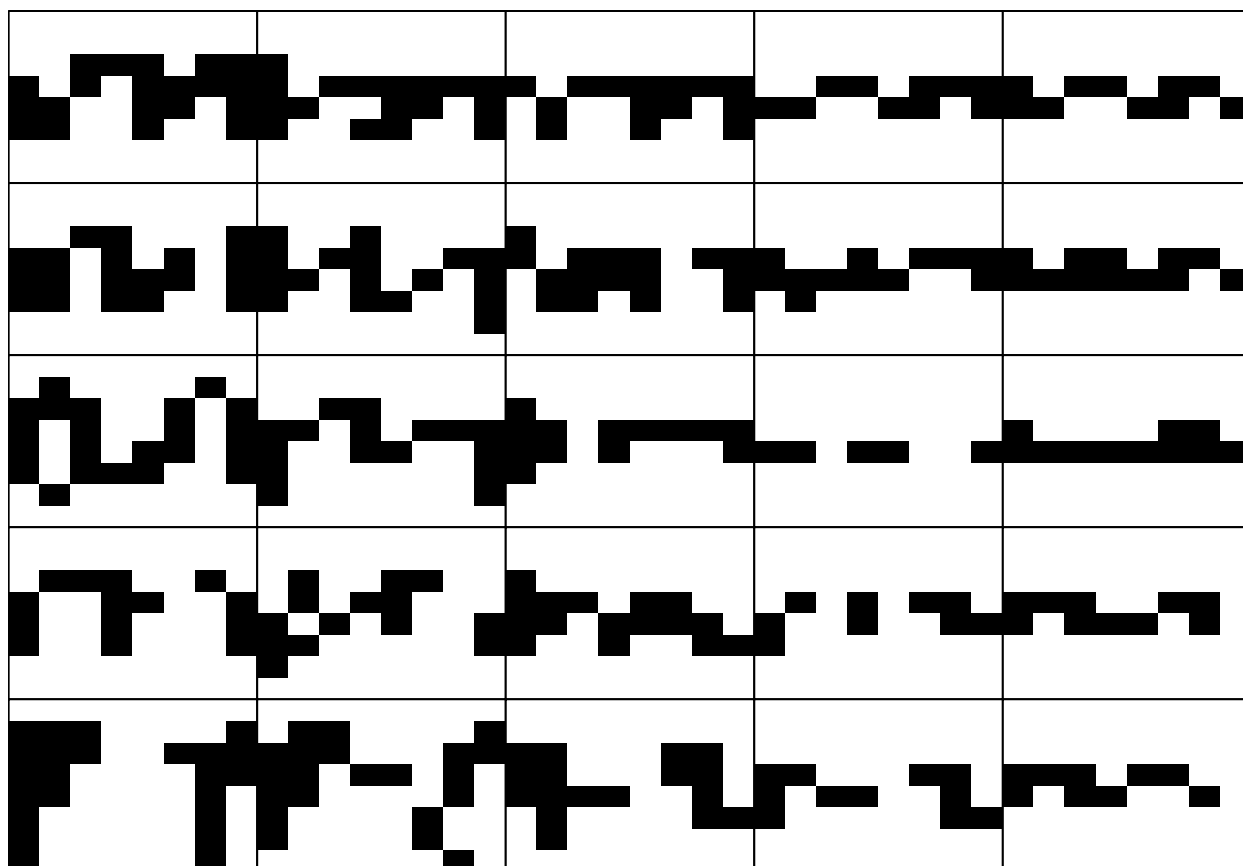




Looking at the principle components.



Looking at proportion of variance explained by each PC with a scree plot.



[1] 64 64

##	PC1	PC2	PC3	PC4	PC5
## V7	2.326339e-18	-1.658721e-18	2.586939e-18	1.290200e-18	-9.421647e-19
## V8	0.000000e+00	-8.326673e-17	1.665335e-16	-2.775558e-17	-6.938894e-17
## V9	-1.232379e-03	1.852476e-04	-1.600628e-03	4.622536e-04	-2.176592e-03
## V10	-1.232379e-03	1.852476e-04	-1.600628e-03	4.622536e-04	-2.176592e-03
## V11	-2.775558e-17	-1.665335e-16	-1.110223e-16	-5.551115e-17	1.387779e-17
## V12	6.938894e-18	1.110223e-16	5.551115e-17	5.551115e-17	-5.551115e-17
## V13	-8.673617e-19	1.110223e-16	-1.665335e-16	0.000000e+00	-5.204170e-17
## V14	-3.933117e-03	-1.739390e-03	-1.848424e-03	8.638457e-04	-5.362731e-03
## V23	-1.728262e-02	-8.371948e-03	-9.392009e-03	-1.854277e-03	-1.168417e-03
## V24	-1.842410e-02	-1.730388e-02	-9.123177e-03	1.067218e-02	-3.630574e-03
## V25	-2.173917e-02	-1.334597e-02	-1.210629e-02	3.493102e-04	-1.739340e-03
## V26	-1.782209e-02	-6.758570e-03	-4.122073e-03	7.065513e-03	-4.759522e-03
## V27	-9.358275e-03	-5.987127e-03	-6.882298e-03	1.012725e-02	-1.121472e-02
## V28	-1.148903e-02	-8.587701e-03	-4.278964e-03	9.473655e-03	9.387810e-04
## V29	-2.365037e-02	-1.129613e-02	-1.184353e-02	1.466577e-02	-1.187231e-03
## V30	-2.760620e-02	-2.447650e-02	-2.430141e-02	3.860687e-02	-1.719083e-02
## V39	-1.900176e-01	-6.854115e-02	-8.902862e-02	-1.842150e-01	-1.883073e-02
## V40	-1.747225e-01	-1.401128e-01	-3.812601e-02	-1.255373e-02	2.600437e-02
## V41	-2.781959e-01	-1.075606e-01	-6.419970e-02	2.815553e-02	9.788542e-03
## V42	-2.156281e-01	-1.061220e-02	-5.704860e-02	7.653787e-02	-7.722478e-02
## V43	-1.396060e-01	-5.660224e-02	-5.895141e-02	9.194700e-02	-7.647478e-02
## V44	-2.407731e-01	-1.870858e-01	-1.653801e-02	6.620613e-02	8.979295e-02
## V45	-3.182117e-01	-1.374249e-01	-5.558000e-02	1.555440e-01	2.375234e-02
## V46	-2.635465e-01	-4.759852e-02	-7.483340e-02	1.954579e-01	-2.988663e-02

## V55	8.373000e-03	-7.473187e-02	4.819588e-02	-2.137271e-01	1.778853e-01
## V56	-6.799487e-02	-1.760938e-01	3.045514e-01	8.360968e-02	-2.183371e-01
## V57	1.346226e-01	1.678143e-01	8.695858e-02	-1.415477e-01	-3.207089e-01
## V58	-4.777317e-02	1.845002e-01	1.972989e-01	-2.494235e-01	1.496996e-01
## V59	-1.337423e-01	-1.542882e-01	2.993752e-01	3.097249e-01	-1.625476e-01
## V60	7.616713e-02	6.488170e-02	2.150390e-01	9.433689e-02	-5.112215e-01
## V61	1.510298e-01	2.011051e-01	1.672575e-01	-2.280276e-01	-3.907414e-01
## V62	-3.183480e-01	3.817275e-01	1.622927e-01	1.011981e-01	1.141547e-01
## V71	9.246641e-04	-3.268771e-02	8.976168e-02	-5.515552e-02	3.486357e-02
## V72	-1.027245e-02	3.175071e-01	-3.492038e-01	1.737478e-01	-1.853512e-01
## V73	1.491235e-01	-1.585622e-01	-3.408430e-01	2.399909e-02	-2.518862e-02
## V74	8.535723e-02	-2.031998e-01	6.424918e-02	-3.866483e-01	1.615550e-01
## V75	-7.243300e-02	3.509195e-01	-1.114566e-01	9.778353e-02	2.591757e-02
## V76	8.969701e-03	2.435089e-01	-4.157079e-01	-4.887285e-02	-3.290582e-02
## V77	1.752879e-01	-3.370115e-01	-2.943312e-01	-6.354639e-02	-2.164300e-01
## V78	-5.995494e-02	2.472076e-01	1.752019e-01	3.019407e-02	2.214835e-01
## V87	-3.394869e-01	-4.429453e-02	3.469143e-02	-1.706912e-01	-2.836467e-01
## V88	-6.067731e-02	1.367420e-01	-1.892372e-01	-8.221020e-02	-5.030711e-02
## V89	-2.321859e-02	-4.486836e-02	-5.237593e-02	-5.409862e-03	-6.678486e-02
## V90	-2.162240e-01	-4.421629e-02	-6.120454e-02	-3.096510e-01	-1.176518e-01
## V91	-2.009738e-01	1.350752e-01	-1.470627e-01	-1.299403e-01	-1.261422e-01
## V92	-3.336565e-02	-1.626086e-02	-7.535049e-02	2.574586e-02	-7.584591e-02
## V93	-3.095273e-02	-1.025275e-01	-6.884709e-02	-7.619531e-04	-1.662543e-01
## V94	-2.915861e-01	2.719337e-02	1.558635e-04	-4.737764e-01	-5.530753e-02
## V103	-1.206169e-01	-8.951302e-02	-7.794493e-02	6.590721e-02	-6.173172e-02
## V104	-2.197256e-02	-1.317605e-02	-2.864255e-02	1.633240e-02	-6.128002e-03
## V105	-6.960816e-03	-6.403279e-03	-1.219661e-02	1.010267e-03	-8.379669e-03
## V106	-1.553347e-02	-1.095334e-02	-1.252386e-02	-2.331616e-02	-1.068355e-03
## V107	-1.399062e-02	-6.747686e-03	-1.635411e-02	-9.875504e-04	-1.512198e-02
## V108	-1.231317e-02	-1.378050e-02	-1.782109e-02	1.959081e-02	-2.924670e-02
## V109	-1.525956e-02	-1.536653e-02	-7.674820e-03	1.318214e-02	-1.008216e-02
## V110	-7.931391e-02	-3.782018e-02	-3.821441e-02	-1.364029e-02	-9.336087e-03
## V119	-1.302863e-02	-1.122400e-02	-1.339323e-02	5.171096e-03	-1.210406e-02
## V120	-7.122219e-04	-1.316655e-03	-2.481338e-03	-3.181093e-04	-2.718426e-03
## V121	-1.736063e-03	1.870311e-04	-9.656831e-04	-1.818625e-03	-1.654444e-03
## V122	-1.736063e-03	1.870311e-04	-9.656831e-04	-1.818625e-03	-1.654444e-03
## V123	-2.379649e-03	-5.314960e-04	-2.427915e-03	-1.510298e-03	-3.382405e-03
## V124	-5.445583e-04	-2.207707e-03	1.194459e-04	1.078612e-03	-2.556602e-03
## V125	-1.818088e-03	-3.662702e-03	-1.973321e-03	3.057657e-03	-1.424234e-03
## V126	-2.237302e-03	-2.071061e-03	-2.429180e-03	-1.458208e-03	-8.519039e-04
##	PC6	PC7	PC8	PC9	PC10
## V7	1.141569e-18	-3.681879e-18	9.248403e-19	-8.717296e-19	2.583836e-18
## V8	-5.551115e-17	-5.551115e-17	-1.387779e-16	-6.938894e-18	-2.775558e-17
## V9	2.300227e-03	7.251322e-04	7.343027e-04	2.448736e-03	7.900604e-04
## V10	2.300227e-03	7.251322e-04	7.343027e-04	2.448736e-03	7.900604e-04
## V11	8.326673e-17	-5.551115e-17	5.551115e-17	8.326673e-17	8.326673e-17
## V12	0.000000e+00	3.330669e-16	-8.326673e-17	1.353084e-16	1.110223e-16
## V13	2.775558e-17	-3.330669e-16	-6.938894e-17	-7.632783e-17	-1.110223e-16
## V14	1.699275e-03	8.733975e-05	5.033541e-03	6.679356e-03	3.775682e-03
## V23	6.059599e-03	6.218090e-03	8.185955e-03	2.746614e-02	-2.739700e-03
## V24	4.070760e-03	-2.593873e-03	2.079714e-02	3.064052e-02	-7.477778e-05
## V25	9.312056e-03	3.394522e-03	1.962926e-02	3.215174e-02	-2.743628e-03
## V26	-4.291825e-03	2.521511e-03	4.135695e-03	2.224209e-02	-1.318188e-02
## V27	4.624810e-03	-7.247726e-03	8.366935e-03	2.053774e-02	-3.288798e-03

## V28	3.540630e-03	-3.223127e-04	1.463201e-02	6.958940e-03	-6.970800e-03
## V29	1.984502e-03	-1.241214e-02	1.658737e-02	6.073860e-03	2.476531e-03
## V30	-3.439997e-03	-3.504105e-02	3.454520e-02	3.491159e-02	-1.744491e-02
## V39	8.576525e-02	1.738818e-01	2.639149e-02	2.036520e-01	1.243426e-01
## V40	4.605806e-02	7.006138e-02	1.053179e-01	1.906146e-01	4.254043e-02
## V41	-3.225122e-02	1.940887e-01	1.746035e-01	1.949711e-01	-3.283114e-02
## V42	-3.949018e-02	1.404311e-01	8.012170e-02	1.507074e-01	-6.782576e-02
## V43	1.718417e-02	-1.118994e-01	8.559187e-02	2.920010e-02	-2.640026e-02
## V44	6.965363e-03	-1.179397e-01	1.979684e-01	-4.326592e-02	5.050507e-03
## V45	-1.119072e-01	-8.424877e-02	1.010238e-01	-1.859738e-02	1.049552e-01
## V46	-1.382036e-01	-1.065435e-01	4.865504e-03	4.218795e-02	9.715246e-02
## V55	1.543893e-01	2.755464e-01	-9.864645e-02	1.587951e-01	1.243498e-01
## V56	-1.263628e-01	1.393754e-01	-7.025961e-02	-2.769842e-01	-5.646919e-01
## V57	-1.291176e-01	-3.520824e-01	3.022333e-02	-1.540287e-01	5.532134e-02
## V58	2.203449e-01	-8.960197e-03	6.037744e-01	-2.400899e-01	1.685279e-01
## V59	4.348733e-01	-6.395194e-03	-8.664617e-02	-3.846069e-01	1.794531e-01
## V60	-2.179630e-01	3.486321e-01	-1.014901e-01	1.629530e-01	4.577001e-01
## V61	2.097475e-01	-1.381230e-01	2.107551e-01	3.927246e-01	-1.254441e-01
## V62	-1.176441e-01	-2.351042e-01	-9.875873e-02	3.951912e-02	1.175064e-01
## V71	-7.830699e-03	2.133928e-02	-1.665847e-02	8.098810e-02	-5.391766e-02
## V72	-1.664962e-01	1.594275e-01	2.883651e-01	-3.209780e-01	-1.610578e-02
## V73	9.765583e-02	-2.729767e-01	-3.274116e-01	-7.213511e-02	3.498394e-01
## V74	-5.399367e-01	-3.060200e-02	1.063794e-01	-1.667298e-01	1.483393e-01
## V75	-2.416232e-01	3.407195e-01	-1.478722e-01	-8.133683e-02	-5.740651e-02
## V76	1.542246e-01	-1.485594e-01	-7.686783e-02	7.436806e-02	-2.923121e-01
## V77	9.874753e-03	1.217951e-01	1.586037e-01	-9.552181e-02	-7.912973e-02
## V78	-5.529516e-02	-6.381639e-02	-1.172135e-01	5.860286e-02	1.237645e-02
## V87	-9.477347e-02	-3.085336e-01	-9.322791e-02	8.541167e-02	-3.213653e-02
## V88	1.754549e-01	1.096924e-01	8.239089e-02	-2.159752e-01	2.512117e-01
## V89	-5.322380e-03	-9.226296e-02	7.302380e-03	-6.051731e-02	7.063803e-02
## V90	-1.785279e-01	-8.012724e-02	-6.702821e-02	-1.580671e-01	1.255708e-02
## V91	1.661001e-01	1.573828e-01	-7.266612e-02	-3.224763e-02	-2.809172e-02
## V92	2.653806e-02	-7.126534e-02	6.748674e-02	8.460195e-03	-3.530726e-03
## V93	-7.146442e-03	-3.021964e-02	9.725768e-02	-1.466643e-02	5.289172e-03
## V94	2.035299e-01	1.622828e-01	-3.463020e-01	-2.470917e-01	-6.884829e-02
## V103	-9.922390e-03	-7.431013e-02	9.003891e-02	1.294445e-01	-1.020452e-02
## V104	1.331323e-02	9.476806e-03	2.167144e-02	-7.990906e-03	1.808462e-02
## V105	-4.076974e-03	-8.690157e-03	8.981372e-03	-4.056606e-03	1.202814e-02
## V106	1.500040e-04	-1.052421e-02	1.133366e-02	1.293222e-02	4.662467e-03
## V107	6.169610e-03	2.079042e-03	6.994870e-03	1.401235e-02	-5.060036e-03
## V108	2.320868e-03	-1.782427e-02	3.954402e-02	1.873661e-02	4.483602e-03
## V109	-1.042830e-02	-9.076118e-03	2.024921e-02	1.410684e-02	-4.433981e-03
## V110	-1.289111e-02	4.219291e-02	2.550311e-02	8.610074e-02	2.013910e-04
## V119	3.615243e-03	-1.084752e-02	1.918548e-02	2.215754e-02	-2.471782e-03
## V120	2.599342e-04	-2.320277e-04	4.772712e-04	4.680214e-03	7.544269e-04
## V121	-6.894188e-04	2.449582e-04	2.233320e-03	2.560206e-03	3.168894e-04
## V122	-6.894188e-04	2.449582e-04	2.233320e-03	2.560206e-03	3.168894e-04
## V123	3.194098e-03	2.236696e-03	3.142300e-03	1.251092e-03	2.339992e-04
## V124	1.684421e-03	-1.091060e-03	3.510072e-03	2.513541e-03	5.589668e-04
## V125	2.087886e-03	-2.139205e-04	7.290532e-03	6.557483e-03	-3.558022e-03
## V126	1.009355e-05	-1.087945e-03	1.223906e-03	5.843354e-03	2.488653e-03
##	PC11	PC12	PC13	PC14	PC15
## V7	-5.731493e-18	3.689110e-18	-3.178544e-18	4.160949e-18	-4.594892e-18
## V8	-5.551115e-17	-1.110223e-16	-5.551115e-17	0.000000e+00	5.551115e-17


```

## V9   -1.081356e-03  1.665036e-03  3.984345e-03 -1.155183e-03  2.561980e-03
## V10  -1.081356e-03  1.665036e-03  3.984345e-03 -1.155183e-03  2.561980e-03
## V11  -2.220446e-16  8.326673e-17 -1.110223e-16  1.387779e-17  1.804112e-16
## V12   1.387779e-16 -5.551115e-17 -1.942890e-16 -1.942890e-16  5.551115e-17
## V13  -2.775558e-17  6.938894e-17 -8.326673e-17  8.326673e-17  1.249001e-16
## V14  -7.121527e-03 -2.006982e-03  6.771438e-03 -2.191023e-03  7.638861e-05
## V23  -9.757166e-03 -6.337531e-04  1.886298e-02  6.427434e-03 -1.048129e-03
## V24   2.471210e-03 -2.193977e-03  1.906264e-02 -3.750569e-03  8.657957e-03
## V25  -9.078805e-03  7.445313e-03  2.029584e-02  7.370305e-03 -3.392583e-03
## V26  -1.336345e-02  6.205857e-03  1.461911e-03  8.607222e-03 -1.479277e-02
## V27  -6.572410e-03  9.879056e-04  1.238384e-02 -3.026789e-04  8.091820e-03
## V28  -3.289632e-03 -1.174054e-03  1.489032e-02  1.151262e-02  1.265003e-02
## V29  -2.208768e-02  1.276682e-02  1.673867e-02  1.938738e-03  1.141260e-02
## V30  -2.355333e-02  1.158495e-02  2.599581e-03 -3.841568e-02 -9.676731e-03
## V39  -5.291830e-02  5.505593e-02  2.156554e-01  6.349161e-02 -2.116268e-02
## V40  -5.877462e-03  8.853944e-02  1.599230e-02 -1.710874e-02 -3.899956e-02
## V41  -8.024506e-02  8.557518e-02  4.590540e-02  6.331943e-02 -1.646671e-01
## V42  -5.890564e-02  3.697145e-02  1.263275e-01  7.805735e-02 -1.746674e-01
## V43   7.159684e-03  4.396189e-02  1.103178e-01  2.876992e-02  8.234739e-02
## V44  -5.647441e-02  8.291876e-02 -4.415792e-02 -1.834308e-01  3.234194e-01
## V45  -1.710279e-01 -1.012049e-02 -3.092590e-02 -1.939125e-01  1.263094e-01
## V46  -1.806775e-01 -8.983056e-02  6.477030e-02 -2.442093e-02 -1.031830e-01
## V55  -3.338877e-02 -1.302584e-01  2.647806e-01 -1.598997e-01  2.972236e-01
## V56  -3.999004e-01  6.096385e-02 -2.351624e-01 -2.224604e-03  1.251726e-01
## V57  -2.821515e-01 -2.465864e-01  6.048929e-01 -1.083543e-01  1.201188e-01
## V58  -6.222000e-02 -3.416421e-01 -3.062117e-01  7.998691e-02 -1.915923e-02
## V59   2.980194e-01  2.228470e-01  2.458337e-01  2.282267e-01 -1.318041e-01
## V60  -1.376588e-01 -1.962083e-01 -2.153203e-01  1.000153e-02 -1.427159e-01
## V61   3.945958e-02  5.070671e-01 -1.022542e-01 -6.942531e-02  1.146170e-01
## V62   1.676422e-02 -3.079087e-02 -1.280809e-01  5.780236e-02 -1.247628e-01
## V71   1.586872e-01 -5.879905e-02  7.769522e-02 -7.499035e-02  1.527898e-02
## V72   1.686232e-01  2.271180e-01  9.793083e-02 -3.752661e-01 -2.029176e-01
## V73  -1.853774e-01  1.468885e-01 -3.327642e-01 -6.319960e-02  6.484973e-02
## V74   6.635221e-02  3.547729e-01  1.884899e-02  1.282682e-01 -1.981723e-01
## V75   2.677370e-01 -9.938799e-03 -1.904416e-02  1.278686e-01  5.063289e-01
## V76  -9.607922e-02 -1.390199e-01 -3.966445e-02  2.190819e-01 -2.215615e-01
## V77   1.940345e-01 -2.202909e-01  3.232707e-03  8.436452e-02 -2.716841e-02
## V78  -1.097179e-01  1.685928e-01  6.962122e-02  3.243216e-02 -8.526103e-02
## V87   4.829172e-01 -1.769338e-01 -1.935992e-01 -1.118370e-01  1.600581e-01
## V88  -2.495073e-01  2.712208e-01 -3.660230e-02  2.652981e-02  3.160017e-01
## V89  -6.913856e-02  5.590269e-02 -4.159746e-02  1.068457e-01  7.598060e-02
## V90   2.021239e-02  6.318177e-02  8.872368e-02  4.544943e-01  1.001914e-01
## V91  -1.594591e-01 -1.645100e-02 -1.642832e-02  3.383422e-01  2.022046e-05
## V92  -2.748933e-02 -3.136424e-02 -2.832940e-02  1.320308e-01 -1.710530e-02
## V93   7.074850e-02 -6.886255e-02 -6.328236e-02  5.333083e-03  4.107631e-02
## V94  -1.646750e-02 -1.385725e-02 -4.506110e-02 -4.451373e-01 -2.593245e-01
## V103 -6.016729e-02  4.283940e-03  3.604013e-02 -6.737804e-02  3.218703e-02
## V104 -4.290241e-02  2.919642e-02 -3.225142e-03 -8.168124e-03  5.897784e-02
## V105 -2.255345e-02  4.248528e-03 -3.097829e-03  2.138485e-03  1.162735e-02
## V106 -1.856722e-02  1.224712e-02  1.539709e-02  2.316134e-02 -1.632470e-02
## V107 -1.714836e-02  1.246491e-02  1.136759e-02  1.042048e-02 -1.770880e-03
## V108 -7.117506e-03 -1.788490e-02  8.251403e-03  2.152261e-02  7.656328e-03
## V109  3.005141e-03  4.540327e-03  3.750559e-03  7.280427e-03 -4.804729e-03
## V110 -6.698056e-02  4.903116e-04  6.371086e-02 -2.242813e-02 -4.869378e-02

```

## V119	-1.342850e-02	3.882408e-03	1.871217e-02	-4.870632e-03	8.581955e-03
## V120	-1.336137e-03	-1.637657e-03	1.202486e-03	3.169206e-03	4.332789e-03
## V121	-5.129598e-03	1.157385e-03	1.398091e-03	4.450031e-04	-3.097158e-03
## V122	-5.129598e-03	1.157385e-03	1.398091e-03	4.450031e-04	-3.097158e-03
## V123	-1.534325e-03	4.583534e-03	7.211523e-03	3.188365e-04	5.058257e-03
## V124	-1.104889e-03	-2.995779e-03	7.944278e-04	-9.301299e-04	2.655961e-03
## V125	7.139122e-04	3.275040e-04	4.649446e-05	-4.567722e-03	6.509053e-04
## V126	-5.244228e-04	-2.328119e-03	5.022419e-03	4.349580e-03	4.711080e-03
##	PC16	PC17	PC18	PC19	PC20
## V7	3.122680e-18	4.564072e-19	-1.334803e-18	-1.182160e-18	4.298440e-18
## V8	-9.714451e-17	6.591949e-17	-6.938894e-18	1.179612e-16	2.498002e-16
## V9	7.473196e-05	-3.274523e-04	3.935163e-04	1.102776e-03	-3.478390e-03
## V10	7.473196e-05	-3.274523e-04	3.935163e-04	1.102776e-03	-3.478390e-03
## V11	1.301043e-16	4.735795e-16	-5.898060e-17	1.249001e-16	-2.359224e-16
## V12	5.551115e-17	2.792905e-16	9.020562e-17	-2.428613e-17	1.873501e-16
## V13	2.775558e-17	-2.949030e-17	-3.608225e-16	-8.326673e-17	1.942890e-16
## V14	-4.078840e-03	-8.349706e-04	5.908409e-03	1.350811e-02	-2.094462e-03
## V23	-1.529737e-02	1.368002e-02	-4.057081e-04	3.657119e-02	1.298693e-02
## V24	-9.510301e-04	8.495186e-03	1.139394e-02	4.936961e-02	1.338874e-02
## V25	-5.428739e-03	-1.715404e-03	2.757937e-02	3.624845e-02	1.485218e-02
## V26	-5.106993e-03	-3.559623e-03	1.502050e-02	7.528612e-03	1.638486e-02
## V27	-1.811248e-03	-9.413648e-03	2.260551e-02	-8.544096e-03	1.178616e-02
## V28	-9.301562e-03	-9.941517e-03	2.071018e-02	-4.448982e-03	1.466516e-02
## V29	-7.898238e-03	-5.148605e-04	4.567071e-02	2.292481e-02	3.398066e-02
## V30	-2.641998e-02	2.072257e-02	3.217092e-02	9.959257e-02	-1.915797e-04
## V39	-1.380142e-01	1.817216e-01	-1.607533e-01	4.169391e-01	2.483357e-01
## V40	6.124460e-02	-1.072516e-01	-8.456516e-03	2.400626e-01	2.924339e-01
## V41	5.037286e-02	-1.747875e-01	-1.454265e-01	-1.463305e-01	2.716888e-01
## V42	1.321018e-02	-2.037348e-01	5.243862e-02	-4.710970e-01	1.430163e-01
## V43	1.045692e-01	-1.397701e-01	1.488233e-01	-3.327384e-01	9.586968e-02
## V44	1.342356e-01	1.851689e-01	-1.565474e-01	-1.600381e-01	-1.633820e-01
## V45	1.233498e-01	8.944549e-02	-2.315226e-01	4.167699e-02	-4.185132e-01
## V46	5.937115e-02	-1.197013e-01	4.085844e-03	5.492531e-02	-2.026983e-01
## V55	-4.750458e-01	-9.226952e-03	-2.446987e-01	-1.605717e-01	-1.486399e-01
## V56	-2.620018e-01	-3.965180e-02	-1.006572e-01	9.641446e-02	1.598493e-01
## V57	1.038944e-01	-1.327090e-01	-8.024599e-02	4.523132e-02	1.538670e-01
## V58	1.015977e-02	-2.208038e-02	-1.756143e-01	-7.730822e-02	1.489364e-01
## V59	-5.188285e-02	-1.140634e-01	-2.514480e-01	2.808021e-02	-6.992266e-02
## V60	-3.156409e-02	4.384888e-02	-7.677278e-02	-1.223652e-01	-1.174778e-01
## V61	1.634324e-01	1.952639e-02	-1.653351e-01	-5.154192e-03	-1.471589e-01
## V62	-4.021488e-02	-6.225707e-02	1.538487e-02	2.713016e-01	3.481158e-02
## V71	-6.369971e-02	1.487112e-02	4.192440e-02	1.219176e-02	-3.064180e-02
## V72	-2.834749e-01	2.944408e-01	-4.013194e-02	-1.341641e-02	8.031019e-02
## V73	-3.575347e-02	3.071333e-02	-2.589382e-01	-9.373357e-02	3.425336e-01
## V74	-1.004496e-01	-3.161442e-01	-1.377603e-01	6.698761e-02	-2.064574e-01
## V75	3.246475e-01	-2.093797e-01	-2.872739e-01	7.885982e-02	1.152136e-01
## V76	-2.057871e-01	-2.349593e-01	-4.188343e-01	-7.712238e-02	-2.406966e-01
## V77	2.098863e-01	-3.546771e-02	7.050390e-02	4.027090e-02	-7.741725e-02
## V78	9.953273e-03	1.366031e-01	3.471766e-02	-2.339628e-01	7.578381e-02
## V87	-3.749391e-01	-1.323776e-01	1.396941e-01	-8.339456e-02	6.034509e-02
## V88	-1.752864e-01	-3.758960e-01	4.354472e-01	1.779689e-02	-5.636884e-02
## V89	2.557624e-02	2.615106e-02	-7.658031e-02	-1.830802e-02	7.950821e-02
## V90	3.020017e-02	5.000838e-01	-1.723537e-02	-2.083740e-01	8.935291e-02
## V91	-1.469638e-02	1.691979e-01	2.435806e-01	1.165938e-01	-2.906130e-01

##	V92	2.040252e-02	-3.684403e-02	1.234935e-02	1.508321e-01	-5.425263e-02
##	V93	3.757805e-02	-1.136875e-01	-5.214932e-02	1.684209e-01	6.604691e-02
##	V94	3.525557e-01	-6.759036e-02	-2.250116e-03	-2.455275e-02	-2.414175e-02
##	V103	-3.219668e-02	4.839531e-02	6.190514e-02	1.613914e-01	-1.849315e-03
##	V104	-6.340386e-03	-9.368638e-03	5.964701e-02	-6.234316e-03	-4.617311e-03
##	V105	1.005159e-02	5.958641e-06	1.304870e-02	-1.272426e-02	9.556768e-03
##	V106	-3.308283e-03	1.777345e-02	3.013554e-02	3.117599e-02	3.158597e-02
##	V107	-6.533985e-03	-2.798605e-04	2.810690e-02	2.734976e-02	2.531742e-04
##	V108	-1.344706e-03	-9.636456e-03	-1.111654e-02	4.138267e-02	-8.130152e-03
##	V109	-3.104798e-03	-8.887016e-03	-1.626917e-02	1.018734e-02	1.386037e-03
##	V110	1.168606e-02	-2.270466e-02	9.056714e-04	7.190885e-02	6.317489e-02
##	V119	-9.096502e-03	1.091503e-02	1.963084e-03	4.452972e-02	5.274690e-03
##	V120	1.668273e-03	2.468228e-03	-3.640761e-03	-6.016185e-04	-1.088587e-04
##	V121	-3.596522e-03	-3.563270e-04	1.527406e-03	2.614131e-03	7.924377e-05
##	V122	-3.596522e-03	-3.563270e-04	1.527406e-03	2.614131e-03	7.924377e-05
##	V123	5.687313e-04	-7.657468e-04	2.224890e-03	2.667202e-03	-8.017281e-04
##	V124	-1.386191e-04	8.708929e-04	-1.458606e-03	7.745650e-03	-2.066156e-03
##	V125	-4.225034e-03	4.207302e-03	5.596671e-04	1.559869e-02	8.567153e-04
##	V126	3.475572e-03	2.618667e-03	-4.920728e-03	3.675090e-03	4.546338e-03
##		PC21	PC22	PC23	PC24	PC25
##	V7	-9.921134e-18	-1.978376e-18	-1.088404e-18	2.621599e-18	3.863129e-18
##	V8	-5.551115e-17	1.942890e-16	3.018419e-16	8.326673e-17	1.387779e-16
##	V9	-4.814024e-03	-4.989255e-03	-4.678014e-03	2.962203e-03	2.607698e-03
##	V10	-4.814024e-03	-4.989255e-03	-4.678014e-03	2.962203e-03	2.607698e-03
##	V11	-1.665335e-16	1.526557e-16	-8.326673e-17	2.775558e-16	-1.387779e-16
##	V12	-4.163336e-17	-1.942890e-16	-1.977585e-16	-1.804112e-16	1.249001e-16
##	V13	0.000000e+00	-2.949030e-16	3.209238e-16	-3.087808e-16	2.220446e-16
##	V14	6.689384e-04	-9.221900e-03	5.855014e-03	9.361435e-03	1.043211e-02
##	V23	6.638155e-03	-1.086384e-02	-8.331538e-03	3.266279e-02	1.494399e-02
##	V24	2.871226e-02	-2.852995e-02	1.248132e-02	1.316790e-02	4.620936e-02
##	V25	2.258147e-02	-2.778222e-02	1.073837e-02	2.737837e-02	7.661957e-02
##	V26	8.444030e-03	-1.674251e-02	4.059804e-03	1.211418e-02	5.201501e-02
##	V27	3.429872e-03	-9.221445e-03	-2.128664e-02	1.008333e-02	3.488870e-02
##	V28	5.712563e-03	-2.730688e-02	-2.367460e-02	2.634583e-02	2.123343e-02
##	V29	1.483013e-02	-5.277352e-02	3.646673e-03	3.314204e-02	5.919881e-02
##	V30	3.659264e-02	-9.273768e-02	8.195392e-02	4.777271e-02	7.148782e-02
##	V39	-1.316780e-01	4.771432e-02	-3.753286e-01	4.196754e-01	-2.163323e-01
##	V40	-8.022101e-02	-2.654934e-01	1.793406e-01	-3.815292e-01	-1.767752e-02
##	V41	-7.666059e-02	2.826251e-02	2.467026e-01	-2.591862e-01	-1.085996e-01
##	V42	2.982310e-02	2.423690e-01	-3.495563e-02	5.342654e-02	-1.179146e-02
##	V43	8.911299e-02	1.456404e-01	-4.846968e-01	1.657012e-01	1.865287e-01
##	V44	-7.556804e-02	-9.726617e-02	-3.387042e-01	-2.444529e-01	-2.146388e-01
##	V45	-1.279957e-01	2.771166e-02	1.294965e-01	4.497778e-02	-1.328757e-01
##	V46	1.391924e-01	2.383261e-02	3.305740e-01	3.691056e-01	2.658264e-01
##	V55	3.026512e-01	2.195216e-01	1.615154e-01	-7.825803e-02	6.827264e-02
##	V56	2.512059e-02	8.187339e-02	3.209608e-03	8.092994e-02	-5.528382e-02
##	V57	-1.567670e-01	4.927215e-02	5.524475e-02	-1.449232e-01	-7.158217e-02
##	V58	-8.145364e-02	3.538049e-02	5.911144e-02	1.574705e-01	1.143271e-01
##	V59	-3.785176e-02	-3.973855e-02	3.439775e-02	2.211243e-02	5.875143e-03
##	V60	-1.360000e-02	-2.005568e-01	-1.591385e-01	-4.689807e-02	-6.602445e-02
##	V61	1.070067e-01	1.217786e-01	1.334003e-01	7.915577e-02	2.071311e-02
##	V62	4.566639e-01	3.090219e-01	-1.187887e-01	-1.842159e-01	-2.667462e-01
##	V71	-1.248336e-01	2.742784e-02	1.382230e-02	-1.711370e-02	4.880556e-02
##	V72	1.440618e-02	7.809341e-02	3.828466e-02	-5.040191e-02	5.329959e-02

## V73	-1.171198e-01	2.557054e-01	9.944550e-02	2.310512e-02	5.623517e-02
## V74	-1.087683e-01	8.829160e-02	-1.032216e-01	-2.120981e-03	6.225022e-02
## V75	-9.256079e-02	1.474726e-02	5.489844e-02	1.170863e-01	1.035060e-01
## V76	-6.986876e-03	-3.264004e-01	-1.604701e-01	-2.170868e-02	-8.968709e-02
## V77	1.871974e-01	2.210524e-01	1.731599e-01	1.683636e-01	-5.096112e-01
## V78	-2.237689e-01	-5.515674e-02	2.257882e-01	2.833896e-01	-3.798730e-01
## V87	-2.557692e-01	-3.926474e-02	1.002569e-01	7.765870e-02	-7.341149e-02
## V88	1.063168e-01	-2.544643e-01	3.516205e-02	5.173269e-02	-2.125537e-01
## V89	1.380803e-01	7.153257e-02	-4.843408e-02	6.063500e-03	8.748905e-02
## V90	3.107033e-01	-2.610754e-01	1.433953e-01	-3.775988e-02	6.043276e-02
## V91	-4.296773e-01	4.271631e-01	1.122119e-02	-2.467522e-01	1.565582e-01
## V92	6.092984e-02	9.522783e-02	9.616870e-02	3.025062e-02	3.241164e-03
## V93	2.043585e-01	7.242683e-02	-9.398745e-02	-1.897220e-01	1.412726e-01
## V94	9.659342e-02	-5.910611e-02	-3.259374e-02	3.532387e-02	5.440699e-02
## V103	1.887255e-02	-1.542650e-01	2.810954e-02	1.715247e-01	2.599188e-01
## V104	2.613015e-02	-5.065895e-02	-2.651580e-02	-4.944122e-03	2.724150e-02
## V105	1.714946e-02	-2.992670e-03	-1.870276e-03	-3.016667e-03	1.763634e-02
## V106	1.641907e-02	-3.898417e-02	2.143652e-02	1.783968e-02	5.683820e-02
## V107	4.770924e-03	-1.536908e-02	2.128351e-02	9.356509e-03	4.755870e-02
## V108	3.986131e-02	-1.008168e-02	3.410478e-02	2.149131e-02	1.862004e-03
## V109	3.857008e-02	-3.110822e-03	1.401234e-02	-1.453273e-02	2.360998e-02
## V110	6.883499e-03	-4.988282e-02	-2.260388e-02	9.231641e-02	1.693550e-01
## V119	1.455087e-02	-3.573204e-02	9.825998e-03	2.159485e-02	2.767769e-02
## V120	-5.917955e-04	9.135468e-04	-2.410519e-03	-2.420979e-03	1.940876e-03
## V121	3.766781e-04	-4.586035e-03	4.673738e-03	2.500875e-03	3.955350e-03
## V122	3.766781e-04	-4.586035e-03	4.673738e-03	2.500875e-03	3.955350e-03
## V123	-8.079108e-03	-5.525418e-03	-1.974036e-03	5.848078e-03	2.471768e-03
## V124	1.391398e-03	-3.160120e-03	1.961906e-03	2.638780e-03	1.506927e-03
## V125	7.074374e-03	-6.693321e-04	1.071691e-02	3.831132e-03	2.944761e-03
## V126	4.913475e-05	-4.937293e-03	-3.017345e-04	-1.048754e-03	6.473560e-03
##	PC26	PC27	PC28	PC29	PC30
## V7	-3.111225e-18	-7.421917e-19	-3.796688e-18	7.095671e-18	3.108269e-19
## V8	2.775558e-16	4.510281e-17	1.942890e-16	6.938894e-17	-1.786765e-16
## V9	5.447890e-03	-1.468003e-02	1.058537e-02	-4.068066e-03	6.831838e-03
## V10	5.447890e-03	-1.468003e-02	1.058537e-02	-4.068066e-03	6.831838e-03
## V11	-8.326673e-17	2.636780e-16	8.326673e-17	-2.220446e-16	-3.243933e-16
## V12	-8.326673e-17	1.387779e-17	-5.551115e-17	3.885781e-16	2.428613e-16
## V13	1.474515e-16	-4.093947e-16	-8.326673e-17	-2.775558e-17	1.960238e-16
## V14	1.272399e-02	-1.720831e-03	-2.044107e-03	7.469488e-03	5.763133e-04
## V23	3.169054e-03	-1.002790e-01	1.576458e-02	5.943299e-03	4.495464e-02
## V24	5.187391e-02	-3.141808e-02	1.187965e-02	1.847441e-02	-1.332864e-02
## V25	5.614253e-02	-6.639636e-02	1.493633e-02	5.900265e-03	3.536079e-02
## V26	4.280319e-02	-4.530388e-02	-1.188200e-03	1.130911e-02	2.472857e-02
## V27	3.476010e-02	-5.886905e-02	4.333811e-03	1.086783e-02	-6.623988e-03
## V28	4.590114e-02	-3.669498e-02	1.275484e-02	1.324127e-02	-9.232484e-03
## V29	8.576308e-02	-4.612222e-02	1.024960e-02	3.262466e-04	-5.428557e-02
## V30	7.430893e-02	-6.416147e-02	-1.584701e-03	1.395668e-03	-1.098795e-01
## V39	-1.994212e-01	1.072483e-01	-5.057860e-02	4.491721e-03	-9.658212e-02
## V40	3.564022e-01	4.549069e-01	-1.679845e-01	-7.393600e-02	1.653278e-01
## V41	-1.343961e-01	-3.238464e-01	1.314897e-01	-8.680596e-02	-1.205325e-01
## V42	-2.529010e-01	-1.149632e-02	-1.912276e-01	1.378547e-01	-5.805437e-02
## V43	3.496183e-01	1.970339e-01	4.048620e-02	-5.489290e-02	2.337825e-01
## V44	1.702122e-01	-6.745766e-02	-1.794486e-02	3.183502e-02	-3.359766e-01
## V45	-2.645883e-01	2.078563e-02	-3.440510e-03	1.671830e-02	4.459041e-01

## V46	5.538574e-02	3.443073e-01	-1.386192e-01	2.609281e-02	-2.954634e-01
## V55	1.912951e-01	3.818071e-02	8.699035e-02	-4.061280e-02	4.273128e-03
## V56	8.228753e-02	3.547858e-02	-5.591816e-02	3.026629e-02	3.604998e-02
## V57	5.781682e-03	-5.112987e-02	-3.287584e-02	4.290298e-03	-2.730402e-02
## V58	5.753084e-02	1.093694e-02	-5.462012e-02	4.152276e-02	2.397437e-02
## V59	6.293559e-02	-6.564476e-02	-1.173316e-02	3.520810e-02	1.022164e-03
## V60	1.318965e-01	-1.288642e-02	1.700719e-02	-8.065328e-03	-1.759914e-03
## V61	5.153829e-03	3.106426e-02	-7.580745e-02	1.856858e-02	4.522733e-04
## V62	1.289267e-01	-1.460714e-01	-1.473682e-01	4.644375e-02	4.236010e-02
## V71	1.937078e-02	-3.254188e-02	-3.392985e-01	3.659667e-01	2.731081e-01
## V72	7.049815e-02	6.128868e-02	3.248307e-03	-3.075378e-02	2.484503e-02
## V73	7.907265e-02	-5.677826e-02	-1.182655e-01	1.560461e-01	1.749476e-02
## V74	1.234800e-01	-2.856397e-02	1.036265e-02	1.013509e-02	-3.915451e-02
## V75	6.332579e-02	-3.905648e-02	-2.518051e-02	8.096969e-03	-2.325854e-02
## V76	8.669254e-02	2.271855e-02	-1.318421e-02	3.785633e-02	3.233405e-02
## V77	2.823328e-01	-5.677386e-02	-3.810324e-02	2.573492e-02	5.185520e-02
## V78	3.027839e-01	1.111735e-01	4.614037e-01	1.430866e-01	5.384375e-02
## V87	-4.817901e-02	3.610127e-03	6.657974e-02	-1.226943e-01	-2.533758e-02
## V88	-1.239786e-01	-3.878392e-02	-4.674450e-02	8.443803e-02	4.226805e-02
## V89	-1.014030e-01	5.447033e-02	2.284344e-01	-5.966896e-01	8.331502e-02
## V90	-6.252883e-02	1.639628e-02	-1.094765e-01	1.245046e-01	6.446513e-02
## V91	1.617875e-01	2.091631e-02	4.739623e-02	2.235842e-02	-5.085163e-02
## V92	1.572605e-02	-4.094148e-02	1.672527e-01	-2.487989e-01	-7.652088e-03
## V93	-1.992154e-01	2.296955e-01	6.145003e-01	5.292054e-01	-7.261729e-03
## V94	3.751384e-02	-2.409555e-02	5.113848e-02	-4.340585e-02	-4.327834e-02
## V103	3.117276e-01	-5.063436e-01	6.669091e-02	1.631483e-01	-1.918157e-01
## V104	1.607675e-02	-6.927225e-02	-8.041312e-03	-4.270542e-02	-1.261250e-02
## V105	-1.465594e-03	-1.668480e-02	3.397624e-02	-2.568624e-02	2.375302e-02
## V106	4.440184e-02	-9.497916e-02	3.009036e-02	-1.765593e-02	1.101323e-01
## V107	3.689194e-02	-6.752605e-02	3.534898e-02	-2.636915e-02	6.979337e-02
## V108	1.841492e-03	-1.725838e-02	3.603299e-02	-4.799140e-02	-4.014641e-02
## V109	-8.221287e-03	-1.125519e-02	4.104542e-02	3.093644e-02	-3.440410e-02
## V110	7.848172e-02	-2.962812e-01	1.149252e-01	-2.002640e-02	5.540071e-01
## V119	4.168247e-02	-4.596703e-02	2.265249e-02	-8.039716e-03	-2.282053e-02
## V120	-5.689095e-03	-1.247928e-02	6.077983e-03	2.453588e-03	3.462476e-03
## V121	4.230596e-03	-6.087414e-03	-2.329374e-03	3.286676e-03	7.366545e-03
## V122	4.230596e-03	-6.087414e-03	-2.329374e-03	3.286676e-03	7.366545e-03
## V123	1.120963e-02	-1.629179e-02	1.254900e-02	-6.177787e-03	2.647642e-02
## V124	1.871296e-03	3.479114e-03	2.032946e-03	2.564705e-03	-7.411415e-03
## V125	6.647001e-04	-1.796077e-03	-2.086274e-03	-7.076248e-04	-9.378305e-03
## V126	5.855188e-04	-2.039766e-02	6.679575e-03	3.176583e-03	2.715296e-05
##	PC31	PC32	PC33	PC34	PC35
## V7	-2.149189e-18	-2.481367e-19	-8.039087e-19	3.184777e-18	-3.897909e-20
## V8	-1.526557e-16	1.613293e-16	2.602085e-16	3.816392e-17	-5.149960e-17
## V9	-8.259163e-03	9.900346e-04	2.389153e-03	2.803864e-02	-2.207047e-02
## V10	-8.259163e-03	9.900346e-04	2.389153e-03	2.803864e-02	-2.207047e-02
## V11	2.775558e-17	3.070461e-16	-3.677614e-16	1.387779e-16	3.558352e-16
## V12	1.526557e-16	-3.885781e-16	1.457168e-16	0.000000e+00	-2.879641e-16
## V13	1.387779e-16	2.151057e-16	-2.359224e-16	0.000000e+00	-3.773024e-17
## V14	3.135342e-03	-2.447787e-02	2.162072e-02	2.096476e-02	-8.511354e-02
## V23	1.267761e-02	-5.860439e-02	1.410013e-02	9.251730e-02	-7.200428e-02
## V24	-1.086190e-02	-2.710796e-02	2.502183e-02	7.167357e-02	-2.609963e-01
## V25	3.247362e-02	-8.123289e-02	1.108382e-02	9.486216e-02	-2.967642e-01
## V26	1.475739e-02	-7.254117e-02	-7.563098e-03	1.932426e-02	-1.095093e-01

##	V27	-2.545834e-02	-1.151195e-02	4.249727e-02	3.536908e-02	-1.211818e-01
##	V28	-2.809326e-02	-1.407406e-02	1.339787e-03	1.028611e-01	-2.396978e-01
##	V29	-4.551901e-02	-3.400888e-02	-5.835397e-02	1.382831e-01	-4.601107e-01
##	V30	-5.506951e-02	-4.524754e-02	2.348913e-02	9.669635e-02	-3.277297e-01
##	V39	-1.006455e-02	3.588237e-02	-1.722701e-02	4.735757e-03	-5.430434e-03
##	V40	1.181856e-01	-1.424336e-01	1.716811e-01	-4.902921e-02	3.744570e-02
##	V41	-2.529684e-01	4.286948e-01	-1.966049e-01	-3.364341e-02	-1.329003e-02
##	V42	2.107989e-01	-4.894930e-01	2.409761e-01	3.820259e-02	-1.692700e-02
##	V43	-1.337047e-01	3.979068e-01	1.009918e-01	1.030296e-02	-2.176920e-02
##	V44	1.097157e-02	-2.370387e-01	-2.674984e-01	1.593576e-01	1.128388e-01
##	V45	2.891856e-02	1.284728e-01	3.123441e-01	-8.683396e-02	-1.561742e-01
##	V46	-3.299582e-02	2.786176e-02	-3.643731e-01	9.114983e-03	1.045411e-01
##	V55	2.931834e-02	2.025681e-02	4.763621e-02	2.010470e-02	2.121423e-03
##	V56	-1.060967e-02	8.596324e-03	4.603562e-03	5.527642e-03	6.824827e-03
##	V57	1.993789e-02	-2.187852e-03	-1.784841e-04	-1.085988e-03	-1.046649e-02
##	V58	1.625447e-02	-1.522121e-02	2.104346e-02	-1.422286e-02	-1.903442e-02
##	V59	3.414569e-02	-2.083109e-02	-8.325974e-03	-6.790706e-03	-6.150195e-03
##	V60	-6.483751e-02	-1.653662e-02	-2.243367e-03	2.968327e-02	-2.357937e-03
##	V61	3.300377e-02	3.336614e-02	-4.966891e-02	-6.401468e-03	-6.921279e-03
##	V62	2.252477e-02	2.342645e-03	-1.767708e-02	-5.108144e-02	-3.212850e-02
##	V71	-7.115192e-01	-2.206652e-01	-1.499234e-01	-3.131095e-02	3.939110e-02
##	V72	-2.727534e-02	1.002736e-03	-9.610197e-03	2.034221e-02	2.075039e-02
##	V73	-6.638037e-03	5.097632e-03	3.891416e-03	6.681493e-02	-1.223829e-02
##	V74	1.963148e-02	-3.367261e-02	2.749876e-02	7.685681e-03	-2.072795e-02
##	V75	1.478383e-02	-3.608658e-02	2.585576e-02	1.719733e-02	-1.138287e-02
##	V76	-4.533297e-02	-2.743596e-02	-2.296079e-02	-3.770410e-02	-2.254635e-02
##	V77	3.657692e-02	-3.357289e-02	-6.897949e-02	-1.041810e-01	-5.190697e-02
##	V78	-8.811965e-02	-1.294545e-01	8.754532e-03	-2.226103e-02	-4.693051e-03
##	V87	9.607221e-02	1.789758e-02	-3.836591e-02	1.182347e-02	-1.133908e-02
##	V88	-6.743725e-02	8.588154e-03	-2.555917e-02	-2.540189e-02	5.684158e-02
##	V89	-3.133574e-01	-3.946915e-01	-9.425650e-02	-4.417362e-01	-6.241105e-02
##	V90	3.946535e-03	8.051166e-02	3.741956e-02	3.529439e-02	3.328723e-02
##	V91	4.243401e-02	-8.018853e-03	-6.170053e-02	-7.331983e-02	-4.426196e-02
##	V92	-3.030899e-01	-1.161569e-01	3.138635e-01	6.773399e-01	3.098184e-01
##	V93	-3.735894e-02	-8.400171e-02	-3.297650e-02	-4.138256e-02	-1.260167e-02
##	V94	-6.088951e-02	-2.755487e-02	5.412113e-02	3.097908e-02	-4.721053e-03
##	V103	-7.408143e-03	-7.634065e-02	3.775746e-01	-3.626001e-01	2.141503e-01
##	V104	-3.388197e-02	-5.739569e-02	-1.206807e-01	5.881336e-02	-2.352432e-01
##	V105	3.013889e-02	-3.793275e-02	-3.464656e-02	5.138517e-02	-7.526752e-02
##	V106	6.374203e-02	-2.187556e-02	-5.696661e-02	8.012906e-02	-1.450159e-01
##	V107	3.188432e-02	-4.203160e-02	-1.463398e-02	8.794424e-02	-9.243977e-02
##	V108	-5.029353e-02	-1.305105e-02	8.722838e-02	1.535296e-01	1.678689e-02
##	V109	-3.238053e-02	-2.816606e-02	-2.885132e-02	1.576761e-02	-1.414883e-01
##	V110	3.165933e-01	-1.655601e-01	-4.785691e-01	1.621496e-01	2.372940e-01
##	V119	-1.949890e-03	-6.785632e-02	2.569148e-02	7.544691e-02	-2.065174e-01
##	V120	7.146611e-04	-1.424270e-02	-7.261317e-03	-8.412125e-03	-1.155319e-02
##	V121	5.065052e-03	-9.149430e-03	-1.380236e-03	4.125849e-03	-3.486020e-02
##	V122	5.065052e-03	-9.149430e-03	-1.380236e-03	4.125849e-03	-3.486020e-02
##	V123	-6.258718e-03	9.697762e-03	-4.483491e-03	3.648054e-02	-5.138964e-02
##	V124	-2.594186e-03	-7.785122e-03	9.220369e-03	1.398846e-02	-7.455606e-03
##	V125	-6.495150e-03	4.609060e-03	8.645064e-03	9.677852e-03	-3.759171e-02
##	V126	5.742278e-03	-1.938877e-02	-1.794180e-02	-3.486022e-03	-1.796365e-02
##		PC36	PC37	PC38	PC39	PC40
##	V7	-6.978425e-19	-2.205121e-18	5.000511e-18	4.521875e-19	-2.606962e-18

```

## V8      4.640385e-17  1.734723e-17 -1.353084e-16 -9.649399e-17  7.025630e-17
## V9     -1.971291e-02 -3.656615e-02 -2.596630e-02  3.474702e-02 -9.188747e-02
## V10    -1.971291e-02 -3.656615e-02 -2.596630e-02  3.474702e-02 -9.188747e-02
## V11     7.285839e-17 -4.649059e-16 -4.996004e-16  2.688821e-16 -2.289835e-16
## V12    -5.898060e-17 -4.163336e-17 -2.775558e-17  2.550044e-16  2.914335e-16
## V13    -1.179612e-16 -3.747003e-16  2.775558e-16 -1.422473e-16  1.110223e-16
## V14    -5.481080e-02  3.762974e-02  2.769553e-02 -1.155181e-01  4.846245e-02
## V23    -1.861865e-01 -2.476202e-01  2.626666e-01  2.069239e-01 -2.860647e-01
## V24    -1.824718e-01 -2.901854e-01  1.322360e-01  4.135916e-03  1.873701e-01
## V25    -2.442662e-01 -4.065075e-01  1.196008e-01 -1.166624e-01  2.604199e-01
## V26    -1.951833e-01 -1.642367e-02 -8.029852e-02  1.832966e-01  4.107885e-01
## V27    -6.974827e-02 -9.868725e-02 -2.871730e-01  3.223795e-01  4.160710e-02
## V28     7.740216e-02 -6.290919e-02 -3.546196e-01  3.346490e-01 -6.059270e-02
## V29     1.126034e-01  2.654741e-01 -3.268334e-01  1.581384e-01 -1.044415e-01
## V30    -1.812192e-01  6.637815e-01  2.194912e-01 -2.036452e-01  3.764842e-02
## V39     2.508418e-02  1.064477e-03 -1.741554e-02 -1.059027e-02  1.968030e-02
## V40     4.399335e-02 -9.322202e-03  6.519158e-04  4.200092e-02 -2.241779e-02
## V41    -3.139496e-02 -1.884446e-02  2.364807e-03 -2.444706e-02  2.377882e-02
## V42     3.177933e-02  5.545759e-02 -5.727043e-03 -2.735000e-02 -2.100226e-02
## V43    -2.980803e-02  3.456976e-02  6.777898e-02 -3.586475e-02 -1.058181e-02
## V44    -7.103494e-02 -2.309438e-02 -4.307430e-02 -4.708547e-02  2.971848e-03
## V45     3.053457e-02  2.850570e-02 -8.997154e-03  2.141833e-02  9.429119e-03
## V46    -5.512173e-03 -9.210331e-02 -3.913933e-02 -4.517134e-04 -9.549817e-03
## V55     1.424366e-02  2.200063e-02 -8.939561e-03 -2.375018e-03  8.288696e-03
## V56     1.294827e-04 -1.838318e-02  1.715678e-03 -4.232457e-03 -1.228878e-03
## V57     2.270521e-03  8.512863e-04  3.729101e-03  3.426975e-03  9.500576e-03
## V58     8.493244e-03  8.551602e-03  1.068348e-02  3.019946e-03 -7.328743e-03
## V59     1.114362e-02  7.173054e-03  7.333478e-03 -4.486477e-03  9.571735e-03
## V60    -1.143784e-02  1.002448e-03 -2.255264e-03 -1.394434e-02  1.336129e-03
## V61     1.376361e-02 -3.747584e-03 -1.381093e-02  1.197533e-02  3.431444e-03
## V62     1.103343e-02  7.957778e-03 -3.236393e-03 -4.227379e-03 -4.814402e-03
## V71    -5.878835e-03 -1.567293e-02  4.929337e-03 -4.828897e-02 -5.303019e-03
## V72     3.475091e-03 -2.458011e-02 -8.691650e-03  1.017007e-02  3.459325e-03
## V73    -5.168056e-03 -1.297116e-04  1.343511e-02 -4.079605e-04 -9.051994e-03
## V74     9.695476e-03  9.663017e-03  1.884792e-02  1.503684e-03 -3.036322e-03
## V75     1.143080e-03  1.521024e-02  1.479317e-03 -1.806176e-02  1.557853e-03
## V76     1.310035e-02 -7.061534e-03  5.412734e-04 -1.123606e-02  7.616913e-03
## V77     4.076133e-03  3.023409e-03 -3.977241e-03  3.116426e-03  4.466398e-03
## V78     1.782127e-02 -7.185149e-03  3.000095e-02  1.586026e-03  3.475368e-03
## V87     1.822595e-03 -1.017131e-02  4.742783e-03  5.864535e-03  6.503707e-03
## V88    -8.495520e-02 -1.906294e-03 -1.885886e-02 -5.849399e-03  1.639483e-03
## V89    -5.574465e-02  3.459357e-03 -3.278048e-02 -4.528779e-03 -2.194828e-02
## V90    -2.107745e-03  1.805902e-02  1.055719e-02  2.285536e-02  1.241645e-03
## V91    -2.003432e-02  2.203525e-02  2.708829e-02  7.833622e-03 -1.320056e-02
## V92     6.800953e-02  3.311639e-02 -6.894528e-02  2.636502e-02  1.199543e-01
## V93     3.687147e-02  1.305992e-02 -1.531679e-02 -2.392782e-02  4.505335e-03
## V94     8.433408e-04 -4.598496e-03  9.442565e-03  6.608968e-03 -7.814686e-03
## V103    9.292700e-02 -2.437290e-02 -3.145630e-02  2.147221e-02  6.885267e-03
## V104    7.997632e-01 -8.705068e-02  3.842983e-01  1.293123e-01  6.218591e-02
## V105    1.200253e-01 -9.141218e-02  1.341807e-01 -1.236907e-01  3.753728e-01
## V106    1.193049e-01 -2.126316e-01 -3.333101e-01 -5.488533e-01  2.588245e-02
## V107    9.118466e-02 -1.718012e-01 -2.205099e-01 -3.319705e-01 -4.666310e-01
## V108   -9.332295e-02 -1.062484e-01  3.127066e-01  3.126426e-04 -3.234403e-01
## V109   -1.410252e-01 -6.545346e-02  1.170386e-01  3.159729e-01 -2.258917e-01

```

##	V110	-5.833988e-02	1.587413e-01	4.286917e-02	1.144355e-01	5.034113e-03
##	V119	-1.505077e-01	3.867927e-02	2.179822e-01	-1.815703e-01	-1.973616e-01
##	V120	1.025393e-02	-9.393063e-03	5.622923e-02	3.281210e-02	-5.064585e-02
##	V121	-1.637615e-02	2.117038e-02	-3.253461e-03	-5.561306e-02	7.255499e-02
##	V122	-1.637615e-02	2.117038e-02	-3.253461e-03	-5.561306e-02	7.255499e-02
##	V123	2.099164e-02	-4.137958e-02	-7.114286e-02	3.008389e-02	-1.396167e-01
##	V124	-1.689071e-02	1.419201e-02	3.911209e-02	-3.083205e-02	-8.002289e-03
##	V125	-5.617077e-02	-4.088888e-02	9.109601e-02	-1.323154e-02	1.068441e-02
##	V126	-5.836390e-03	-5.406199e-02	6.571628e-02	-1.371996e-02	-3.127540e-02
##		PC41	PC42	PC43	PC44	PC45
##	V7	-4.203008e-19	-1.417557e-18	-2.715018e-18	-4.842420e-18	5.134932e-19
##	V8	2.016616e-17	-7.372575e-18	3.217912e-16	-1.821460e-16	5.994554e-16
##	V9	-4.542771e-02	-4.057545e-02	8.924167e-02	3.897341e-04	-6.976072e-02
##	V10	-4.542771e-02	-4.057545e-02	8.924167e-02	3.897341e-04	-6.976072e-02
##	V11	2.081668e-17	1.144917e-16	2.567391e-16	4.371503e-16	7.632783e-17
##	V12	1.908196e-16	-3.608225e-16	1.110223e-16	-1.387779e-16	-5.048045e-16
##	V13	-1.040834e-16	-3.885781e-16	1.942890e-16	2.498002e-16	-1.994932e-16
##	V14	1.163654e-02	-4.949048e-02	8.961670e-02	-8.722505e-02	-2.220780e-01
##	V23	-4.305547e-01	2.255561e-01	-5.503198e-03	4.723143e-01	1.399135e-01
##	V24	-7.345552e-02	-2.772116e-01	-5.017708e-01	-3.178502e-01	7.025604e-02
##	V25	-7.776334e-02	-8.817771e-03	-4.224643e-02	2.300024e-02	-5.323192e-02
##	V26	-6.832085e-02	4.764057e-01	4.314718e-01	-6.287960e-02	2.308799e-01
##	V27	2.726575e-02	4.691426e-02	2.454427e-01	-4.796377e-01	-2.190472e-01
##	V28	-1.631761e-02	-2.298678e-01	-1.251363e-02	3.954338e-02	1.622919e-01
##	V29	-7.082984e-02	-2.245395e-01	-2.437576e-02	3.444443e-01	-1.381763e-01
##	V30	-5.637221e-02	9.600094e-02	-6.384500e-02	-1.442432e-01	2.911078e-01
##	V39	2.046737e-02	1.422702e-02	1.130947e-02	-1.455299e-02	9.742880e-03
##	V40	2.752795e-03	1.742534e-03	4.752819e-03	2.185792e-02	-3.013443e-03
##	V41	-3.176862e-02	3.185131e-03	1.158143e-02	-1.817772e-03	-1.871443e-02
##	V42	7.325116e-03	-2.160411e-02	-3.567212e-02	-7.486638e-03	1.431232e-02
##	V43	4.454738e-03	3.526077e-02	-5.271060e-03	1.165837e-02	1.157247e-02
##	V44	-5.057166e-03	4.432492e-03	-7.504417e-03	-4.358956e-03	1.612756e-02
##	V45	4.224587e-03	4.943440e-03	-5.427021e-04	6.388920e-03	2.336982e-03
##	V46	-2.894815e-02	1.324658e-02	1.428471e-02	1.406939e-02	-2.529850e-02
##	V55	-1.406118e-03	7.999566e-03	1.340953e-03	5.864147e-03	4.153031e-03
##	V56	6.478834e-03	-7.308850e-03	-4.126073e-03	-5.954314e-04	-6.778241e-03
##	V57	-4.134290e-03	1.373416e-02	-9.314775e-03	-2.361426e-03	1.310769e-02
##	V58	-3.036535e-03	1.190831e-02	-2.285928e-03	-9.620742e-03	1.016872e-03
##	V59	-1.621151e-03	1.126203e-03	3.625824e-03	-2.105250e-03	1.681523e-03
##	V60	1.065625e-03	5.877286e-03	-1.332491e-02	4.210032e-03	5.643662e-03
##	V61	-8.868224e-03	-4.825714e-03	6.401673e-04	1.029112e-02	-2.548060e-03
##	V62	-6.789174e-03	-9.291909e-03	1.093166e-02	-5.384606e-03	-2.843190e-03
##	V71	1.337353e-02	-2.748730e-02	2.197931e-02	7.542350e-03	4.498450e-03
##	V72	-8.472376e-04	-1.967214e-03	3.421344e-03	4.002262e-03	-6.444118e-03
##	V73	1.707686e-03	-2.540912e-03	-1.793605e-03	-1.277056e-02	5.535007e-03
##	V74	-7.849158e-03	-6.831384e-03	1.898285e-03	-9.745377e-03	5.806976e-03
##	V75	7.213537e-03	9.023550e-03	1.010729e-03	8.518741e-04	1.023695e-02
##	V76	-5.558239e-03	-6.473599e-03	-4.699561e-03	1.243391e-03	2.744378e-03
##	V77	-6.544165e-03	7.988047e-03	5.973777e-03	-4.108487e-04	3.519565e-04
##	V78	3.673153e-03	3.601446e-03	-2.842151e-03	-1.855058e-02	1.040913e-02
##	V87	1.683287e-03	4.557175e-03	-3.087627e-03	3.103450e-04	-3.025169e-03
##	V88	9.265447e-03	-4.823856e-03	-1.106897e-02	5.984471e-03	-2.145362e-03
##	V89	-2.680535e-02	-3.354071e-02	-1.048825e-02	-1.556985e-03	1.633152e-02
##	V90	-1.657783e-02	-2.814322e-03	-1.777247e-03	-1.315682e-02	-1.369513e-02

## V91	1.142491e-02	-2.125663e-02	3.969350e-03	-1.800401e-03	1.522822e-02
## V92	8.202640e-03	8.426773e-02	-1.161259e-01	3.187698e-02	-7.489138e-02
## V93	-5.683765e-02	2.307207e-03	1.574666e-02	-3.428766e-03	1.992439e-03
## V94	9.864341e-03	-3.233364e-03	2.513715e-03	-2.475350e-03	6.360986e-03
## V103	2.485387e-02	-4.249051e-02	-1.905881e-02	5.453169e-02	-1.951820e-02
## V104	-4.163915e-02	1.852590e-01	-5.768056e-03	-1.643483e-01	5.490247e-03
## V105	1.660616e-01	-3.116811e-01	3.581295e-01	3.186672e-01	1.623791e-02
## V106	3.122827e-01	1.434571e-01	-4.094357e-02	1.609081e-01	1.627118e-01
## V107	-1.897232e-01	2.035727e-01	1.090532e-01	-2.698159e-01	1.702867e-01
## V108	1.896508e-01	-4.475965e-01	4.602086e-01	-1.623685e-01	3.165776e-01
## V109	7.531894e-01	2.904428e-01	-1.768258e-01	9.738949e-02	7.910983e-02
## V110	2.398951e-02	-1.012847e-01	-5.441816e-02	-6.706015e-02	-3.854153e-02
## V119	5.445504e-02	1.027869e-01	1.711286e-01	-1.610917e-02	-6.691092e-01
## V120	2.912865e-02	6.423232e-02	-1.733458e-02	4.581308e-02	-9.334825e-02
## V121	2.776343e-02	5.576286e-03	8.836338e-02	7.000148e-02	-7.890648e-02
## V122	2.776343e-02	5.576286e-03	8.836338e-02	7.000148e-02	-7.890648e-02
## V123	-4.701682e-02	-4.237635e-02	9.795264e-02	6.956566e-03	-3.241640e-02
## V124	7.762258e-03	-4.460212e-02	5.289155e-03	-6.885258e-02	-4.701074e-02
## V125	6.777369e-03	-1.605387e-02	-8.610680e-02	-3.086199e-02	3.793528e-02
## V126	5.011779e-02	5.724926e-02	-6.242760e-02	3.009666e-02	-1.891314e-01
##	PC46	PC47	PC48	PC49	PC50
## V7	2.122225e-18	1.017393e-18	1.500014e-18	5.528044e-18	-4.279121e-19
## V8	4.471250e-16	-5.746272e-17	4.282599e-16	-4.189357e-16	-2.904307e-16
## V9	1.577937e-02	1.067317e-02	1.827317e-01	-1.814498e-02	-2.404707e-02
## V10	1.577937e-02	1.067317e-02	1.827317e-01	-1.814498e-02	-2.404707e-02
## V11	-3.920475e-16	3.573530e-16	-1.023487e-15	4.753142e-16	1.810618e-16
## V12	-3.469447e-18	-3.191891e-16	-6.886852e-16	6.036838e-16	-5.464379e-16
## V13	-6.245005e-16	2.498002e-16	-1.387779e-17	8.881784e-16	-5.837344e-16
## V14	1.786158e-02	4.380799e-02	-3.272188e-01	8.454037e-02	-5.767991e-01
## V23	-3.248446e-01	5.147718e-02	-1.844166e-01	-2.005431e-01	-1.040685e-01
## V24	-6.697934e-02	3.326987e-02	-3.913487e-01	1.482056e-01	1.401790e-01
## V25	3.663754e-01	-3.227032e-02	5.102590e-01	-1.605036e-01	-1.247178e-01
## V26	1.636908e-01	-2.088853e-01	-2.147380e-01	2.857852e-01	1.533059e-01
## V27	-3.169138e-01	1.607727e-01	-3.182659e-02	-5.344082e-01	2.990204e-02
## V28	-3.671357e-01	-7.701013e-02	2.925320e-01	5.283030e-01	-1.608635e-01
## V29	4.140601e-01	-8.107475e-02	-2.569397e-01	-1.988791e-01	1.537240e-01
## V30	-2.204177e-01	1.119436e-01	1.915818e-01	-8.655921e-02	-1.032751e-02
## V39	1.564559e-02	1.868864e-02	5.317556e-03	-1.512082e-04	6.560827e-03
## V40	-1.618744e-02	7.935650e-03	6.258659e-03	-1.270666e-02	8.481330e-04
## V41	4.273605e-03	8.241016e-04	-1.617160e-06	1.723757e-02	-9.721717e-03
## V42	-4.507070e-03	-1.038793e-02	5.860325e-03	-9.140663e-03	7.875415e-03
## V43	-6.365924e-03	4.076579e-03	-4.038560e-03	3.535995e-03	1.805388e-03
## V44	8.736025e-04	-3.864713e-03	1.490396e-03	-9.390704e-03	-1.253868e-02
## V45	1.305309e-02	-9.324655e-03	-3.774829e-03	-1.862779e-03	1.690179e-02
## V46	-2.917047e-02	2.259755e-04	6.867378e-04	-2.360236e-03	-7.326558e-03
## V55	-3.211211e-03	-1.681088e-03	5.146215e-04	-5.403840e-03	3.718801e-03
## V56	-1.560454e-03	-5.906886e-05	4.457870e-04	-6.236714e-03	3.213401e-03
## V57	6.195067e-03	2.187508e-04	6.531568e-03	2.327108e-03	-3.059070e-03
## V58	-2.286810e-03	1.071497e-02	1.244783e-03	-1.375049e-03	2.825567e-03
## V59	-4.710504e-03	5.029756e-03	-1.307644e-03	-4.311018e-03	1.715296e-03
## V60	-5.119644e-04	1.000255e-03	4.515149e-03	-3.570334e-03	2.014740e-03
## V61	-2.773063e-03	-3.794021e-03	-2.861435e-03	1.691528e-03	6.487317e-06
## V62	9.245452e-04	2.331914e-03	9.265310e-03	4.805093e-03	-3.535007e-04
## V71	-2.499955e-03	1.019969e-02	7.647648e-04	5.217607e-04	9.902596e-03

##	V72	-2.262654e-03	-6.028690e-03	-3.135247e-03	6.390877e-04	1.103173e-03
##	V73	8.608952e-04	-5.731976e-03	5.736099e-03	6.545269e-03	-4.329998e-03
##	V74	-7.510635e-03	5.420803e-04	-1.663718e-03	-5.108909e-03	3.606946e-03
##	V75	-7.615794e-03	3.209775e-03	7.873115e-04	-8.498134e-03	-4.177289e-03
##	V76	2.398382e-03	6.678712e-03	-3.875102e-03	-1.000134e-02	4.244130e-03
##	V77	-6.424985e-04	4.302455e-03	3.096417e-03	-6.621529e-03	3.440855e-04
##	V78	-1.016752e-03	-1.901638e-03	5.057716e-05	-1.245528e-02	-4.082734e-04
##	V87	3.551791e-03	-1.224594e-03	-3.532586e-03	5.473804e-04	-1.122632e-03
##	V88	1.966316e-03	-2.645265e-04	-4.294757e-03	6.909484e-03	8.841220e-03
##	V89	-1.760427e-02	-1.517236e-02	4.507647e-03	-5.072136e-03	-1.539296e-02
##	V90	9.896648e-03	9.748859e-03	8.008387e-03	4.665716e-03	-3.962948e-03
##	V91	-1.923986e-02	-1.138304e-02	1.657662e-03	-3.882466e-03	-8.125940e-04
##	V92	3.023655e-02	2.633273e-02	8.245002e-03	1.044296e-02	-4.763552e-03
##	V93	-1.059853e-02	-2.320370e-02	8.430052e-03	-1.545921e-02	-3.061658e-03
##	V94	-3.956518e-03	-4.342985e-03	-2.846092e-03	2.726498e-03	3.226155e-04
##	V103	4.361285e-02	8.785256e-03	-2.311766e-04	2.398705e-02	-6.340076e-03
##	V104	6.277070e-03	-9.963710e-02	2.504195e-02	-3.293714e-02	-7.574500e-02
##	V105	-1.841716e-01	5.956279e-01	-5.360416e-02	5.004562e-02	1.734222e-01
##	V106	-3.292041e-01	-3.381997e-01	-7.178300e-02	-2.046644e-01	-3.903907e-03
##	V107	2.385455e-01	4.731577e-01	-7.763238e-02	2.056590e-01	6.952187e-02
##	V108	9.172992e-02	-3.354233e-01	-1.008033e-01	-7.400976e-02	5.680698e-02
##	V109	1.182254e-01	2.255956e-01	-1.863059e-02	2.407997e-02	-9.456184e-02
##	V110	3.048707e-02	-1.165020e-02	1.137035e-02	7.056899e-03	-1.415041e-02
##	V119	-1.625484e-01	-1.224238e-01	3.844523e-02	2.710359e-01	1.382320e-01
##	V120	-6.581620e-02	-1.916591e-02	-3.135473e-02	6.317555e-02	2.067023e-01
##	V121	2.567448e-02	-7.161268e-03	-7.167861e-02	3.489092e-02	-3.072405e-01
##	V122	2.567448e-02	-7.161268e-03	-7.167861e-02	3.489092e-02	-3.072405e-01
##	V123	1.632483e-02	-9.331362e-03	2.143609e-01	7.762531e-02	-4.960297e-02
##	V124	-4.845354e-02	-4.556310e-02	-1.756607e-01	1.138655e-01	-2.004077e-01
##	V125	-3.810334e-03	2.262424e-02	1.663769e-01	-5.538547e-02	-1.771623e-02
##	V126	-1.003333e-01	-1.052291e-01	-4.585665e-03	1.128907e-01	4.451785e-01
##		PC51	PC52	PC53	PC54	PC55
##	V7	-3.361554e-18	-6.431193e-18	-2.910683e-18	-1.321269e-17	-5.784565e-18
##	V8	4.035400e-16	-2.710505e-16	-5.934923e-16	-1.263746e-15	-5.998891e-16
##	V9	-2.605297e-01	2.771155e-01	1.623802e-01	-5.661993e-02	4.946533e-01
##	V10	-2.605297e-01	2.771155e-01	1.623802e-01	-5.661993e-02	4.946533e-01
##	V11	-4.883247e-16	-1.249001e-16	-1.257675e-16	-5.464379e-16	-1.144917e-16
##	V12	9.089951e-16	-5.551115e-17	-7.632783e-17	2.976785e-15	-4.813858e-16
##	V13	-4.128642e-16	4.163336e-17	3.747003e-16	4.163336e-17	1.663600e-15
##	V14	1.625991e-01	9.181411e-02	8.499024e-02	3.256970e-01	-3.665400e-02
##	V23	7.501841e-03	4.385046e-03	-2.267779e-02	2.614177e-03	-2.350369e-02
##	V24	-2.034403e-01	9.315545e-02	9.457325e-02	-1.959137e-01	1.327822e-02
##	V25	2.560713e-01	5.665531e-02	-1.355456e-01	1.044444e-01	-4.278072e-02
##	V26	-1.501859e-01	-1.099425e-02	3.611228e-02	2.085231e-02	3.111113e-02
##	V27	7.200831e-02	-3.720809e-02	1.452912e-02	1.734028e-03	-4.630577e-02
##	V28	1.841668e-01	-1.158788e-01	-9.559728e-02	8.263739e-03	3.269820e-02
##	V29	-3.863248e-02	-6.442783e-02	7.570912e-04	5.111918e-02	1.414585e-02
##	V30	6.672677e-02	1.077507e-01	4.044333e-02	1.253590e-03	-1.150114e-03
##	V39	2.577332e-03	4.579578e-03	8.483700e-04	-1.303261e-03	1.376641e-03
##	V40	1.598953e-03	3.588750e-03	4.366004e-03	1.310199e-03	4.318858e-03
##	V41	9.261696e-03	-2.943137e-03	-1.396974e-02	4.532378e-03	-8.468768e-04
##	V42	-2.223155e-02	6.678059e-03	1.089984e-02	-4.705852e-03	-1.452490e-04
##	V43	9.676625e-03	-4.077647e-04	3.034284e-03	1.593367e-03	4.832861e-03
##	V44	6.436098e-04	-2.724597e-03	6.455060e-03	4.421817e-04	-7.232380e-03

## V45	5.768680e-03	-4.481377e-03	-9.915459e-03	6.084832e-04	5.848007e-03
## V46	-3.667469e-03	3.610024e-03	2.554765e-03	-7.998228e-04	-2.549770e-03
## V55	1.878213e-04	2.242900e-03	5.801423e-04	1.061613e-03	7.469960e-04
## V56	1.879496e-03	5.740795e-03	1.354072e-03	5.129443e-04	1.113027e-03
## V57	-5.751250e-04	-1.490402e-03	-2.407004e-03	-1.591260e-04	1.491622e-03
## V58	-3.443373e-03	2.735899e-03	1.186539e-03	-2.537889e-03	1.648110e-03
## V59	-6.551498e-04	-2.616143e-03	4.155038e-04	2.325057e-04	8.442193e-04
## V60	-1.520279e-04	-3.673518e-03	-1.470337e-03	8.983062e-04	-2.428491e-03
## V61	2.396973e-03	3.742516e-04	-4.353128e-03	2.456847e-04	1.320476e-03
## V62	-2.949221e-04	4.660039e-03	9.395384e-04	2.897292e-03	7.225383e-04
## V71	-5.376187e-04	-4.730922e-03	-8.076742e-03	-3.555128e-04	-1.008287e-03
## V72	6.152556e-03	1.435148e-03	-5.287150e-04	2.788318e-03	8.436596e-04
## V73	6.107319e-04	-2.870012e-04	-1.261058e-03	-1.409016e-03	5.859521e-04
## V74	-9.909901e-05	-1.832215e-03	2.385760e-03	1.794045e-03	6.379807e-04
## V75	-1.669391e-03	-1.970305e-03	-8.834021e-05	-1.484185e-03	1.179169e-03
## V76	-3.172679e-03	-1.931407e-03	-4.729812e-04	3.316340e-03	-1.378773e-03
## V77	-1.313465e-04	4.354282e-03	-1.818055e-03	8.081137e-04	3.604796e-03
## V78	4.124791e-03	-4.071986e-03	4.304957e-04	4.667700e-04	9.997146e-04
## V87	-4.606395e-04	3.770140e-04	-7.283066e-04	-5.653943e-04	4.479399e-04
## V88	-1.204227e-03	-6.790239e-04	-4.135657e-04	8.307681e-04	-3.922686e-04
## V89	-3.499458e-03	3.588473e-04	3.321437e-04	-5.599027e-04	-1.062143e-03
## V90	6.072056e-05	-4.514372e-04	-5.055890e-04	1.419812e-03	5.461809e-04
## V91	-7.381885e-04	-1.680338e-03	-3.620599e-03	-3.014342e-03	2.155205e-04
## V92	-1.323073e-03	2.367492e-03	7.988918e-03	2.125839e-04	-5.783441e-03
## V93	-7.580895e-04	-3.761627e-03	6.024047e-04	-2.771999e-03	-1.867223e-03
## V94	3.736938e-03	-3.538328e-03	2.050277e-03	1.856985e-04	-8.114000e-04
## V103	-1.524471e-02	-9.542191e-04	6.171535e-04	3.087672e-03	-3.140456e-03
## V104	-1.765001e-02	9.382351e-03	-7.609011e-03	-2.293358e-02	1.373201e-02
## V105	-6.639015e-02	1.611787e-02	-1.719764e-02	4.494109e-02	-6.908790e-03
## V106	-9.623603e-02	3.029382e-02	1.032203e-03	1.801215e-02	3.268981e-02
## V107	1.044043e-01	-8.128606e-02	1.224035e-02	-1.467124e-02	3.360979e-02
## V108	9.800546e-02	-4.703555e-02	9.162528e-03	-2.785811e-02	-1.252726e-02
## V109	-3.731358e-02	5.808269e-02	-1.650038e-02	-1.201506e-02	2.524862e-03
## V110	2.485662e-03	-1.986950e-02	-9.967978e-03	-3.605684e-03	-1.161908e-03
## V119	-1.737970e-01	-1.752170e-01	-2.660614e-01	-1.606745e-01	-4.761089e-02
## V120	2.982857e-01	6.024305e-02	3.252547e-01	2.387129e-01	1.222055e-01
## V121	1.356329e-01	-7.875891e-02	3.434045e-01	-3.705098e-01	3.538365e-02
## V122	1.356329e-01	-7.875891e-02	3.434045e-01	-3.705098e-01	3.538365e-02
## V123	-4.156054e-01	3.535081e-01	3.771686e-01	9.212242e-02	-6.661383e-01
## V124	-1.165846e-01	1.745449e-01	-1.386605e-01	5.706598e-01	1.663453e-01
## V125	-3.216898e-01	-7.444379e-01	3.982058e-01	3.296591e-01	9.165047e-02
## V126	4.247889e-01	1.576247e-01	4.071815e-01	1.754402e-01	-3.693619e-03
##	PC56	PC57	PC58	PC59	PC60
## V7	-1.080876e-17	-8.434377e-18	1.324145e-02	0.000000e+00	0.000000e+00
## V8	-6.938894e-18	1.560384e-15	4.340949e-02	1.639671e-01	-3.168496e-01
## V9	1.672694e-02	-1.250049e-01	-7.054490e-01	-2.422272e-03	2.158979e-02
## V10	1.672694e-02	-1.250049e-01	7.054490e-01	2.422272e-03	-2.158979e-02
## V11	-1.160096e-15	-4.523291e-16	4.270024e-02	2.111434e-01	6.957830e-01
## V12	2.636780e-16	-1.393850e-15	-1.692740e-02	-1.175638e-01	-6.064559e-01
## V13	1.196959e-15	-5.186823e-16	-2.264995e-02	9.457748e-01	-1.909406e-01
## V14	-2.852473e-02	-5.498275e-01	-2.801610e-16	-6.665675e-16	1.306952e-15
## V23	4.104122e-02	-1.234590e-02	1.366467e-16	-3.884832e-16	-7.025291e-17
## V24	-5.719855e-02	3.025411e-04	-1.358737e-16	-5.360296e-16	-6.713380e-16
## V25	-1.443641e-02	6.186578e-02	1.490934e-16	2.203099e-16	1.203031e-15

##	V26	-5.568144e-03	-5.137524e-02	-3.470887e-16	1.023487e-16	-3.174544e-16
##	V27	1.657413e-02	7.591985e-02	4.566977e-17	6.435824e-16	2.058900e-16
##	V28	5.102771e-03	-3.388822e-02	1.344758e-15	-7.639289e-16	2.011466e-16
##	V29	1.465316e-02	2.060330e-02	-6.422293e-16	-1.759796e-16	1.127570e-16
##	V30	1.202392e-02	3.267033e-03	-1.084352e-16	2.890483e-16	3.151234e-16
##	V39	-3.563518e-04	1.567318e-03	-4.481799e-17	4.336809e-19	-6.999067e-16
##	V40	1.235812e-03	1.824441e-04	-1.539053e-16	-1.040834e-17	9.887924e-17
##	V41	-2.553416e-03	-9.217546e-04	5.896707e-16	-3.551846e-16	1.335737e-16
##	V42	1.596955e-03	-1.551875e-04	-1.368591e-16	3.434752e-16	8.066464e-17
##	V43	3.260107e-03	1.479188e-03	-1.205346e-16	1.501620e-16	-7.459311e-17
##	V44	-4.644081e-03	-1.789543e-03	1.505034e-16	-7.025630e-17	-3.356690e-16
##	V45	6.397970e-03	2.184115e-03	-2.534043e-16	3.382711e-17	1.714124e-16
##	V46	-6.174752e-03	-1.136694e-03	5.710989e-17	1.335737e-16	-4.637675e-16
##	V55	6.151405e-04	-3.792092e-04	-5.520357e-16	-2.602085e-17	-5.957691e-17
##	V56	-5.801069e-04	-9.579208e-04	1.474854e-16	-2.775558e-17	6.938894e-17
##	V57	-3.178141e-04	2.760616e-04	-1.718061e-16	-7.892992e-17	1.621966e-16
##	V58	-3.626734e-04	-3.724208e-04	1.622938e-16	-2.428613e-17	2.949030e-17
##	V59	-8.715275e-04	7.759907e-04	1.971665e-16	-1.255506e-16	-2.550044e-16
##	V60	3.529002e-04	1.123118e-03	-1.765940e-17	-1.192622e-16	-6.982262e-17
##	V61	9.177672e-04	-2.009868e-03	4.475585e-17	-9.020562e-17	-7.719519e-17
##	V62	3.748576e-05	1.778687e-04	-7.283644e-17	-4.510281e-17	1.053845e-16
##	V71	-5.894474e-04	7.850816e-04	-1.095746e-16	4.336809e-17	-1.066855e-16
##	V72	-4.037588e-04	2.367458e-04	5.551115e-17	1.387779e-17	2.775558e-17
##	V73	-1.454723e-04	-4.771879e-04	2.801578e-16	-1.960238e-16	3.521489e-16
##	V74	-2.766676e-04	5.818738e-04	6.591949e-17	7.285839e-17	-9.714451e-17
##	V75	-2.033611e-04	5.457053e-04	-2.081668e-16	-2.949030e-16	4.510281e-17
##	V76	4.514093e-04	-1.635143e-04	-2.081668e-16	-1.110223e-16	-1.110223e-16
##	V77	1.185352e-03	7.517787e-05	-1.595946e-16	2.775558e-17	-1.942890e-16
##	V78	5.494828e-04	1.497561e-03	2.012279e-16	1.942890e-16	-1.110223e-16
##	V87	-1.969481e-04	-1.842692e-04	-9.020562e-17	9.020562e-17	7.632783e-17
##	V88	-1.748807e-03	1.010613e-03	3.122502e-17	-1.387779e-17	-1.457168e-16
##	V89	3.550140e-03	-3.134473e-04	5.030698e-17	-7.892992e-17	3.295975e-17
##	V90	4.565266e-04	-3.570463e-04	0.000000e+00	4.163336e-17	2.359224e-16
##	V91	2.170186e-03	-2.184505e-04	1.249001e-16	2.498002e-16	-5.551115e-17
##	V92	-3.804034e-03	-1.530214e-03	-6.938894e-18	2.359224e-16	6.938894e-17
##	V93	1.287884e-03	-1.419619e-03	6.938894e-17	-1.387779e-17	-8.326673e-17
##	V94	-3.708272e-04	6.835635e-04	-2.428613e-16	1.387779e-17	5.551115e-17
##	V103	-4.839891e-04	-2.622904e-03	1.595946e-16	-2.081668e-16	2.498002e-16
##	V104	1.179511e-02	-1.184099e-02	4.466913e-17	3.295975e-17	9.714451e-17
##	V105	8.895701e-03	8.563810e-04	-1.561251e-17	-7.077672e-16	-3.989864e-17
##	V106	-3.407512e-02	-3.545576e-02	1.023487e-16	-9.194034e-17	1.040834e-17
##	V107	3.146162e-02	4.627019e-02	1.491862e-16	-3.053113e-16	-1.942890e-16
##	V108	-7.048368e-03	-1.158195e-02	-1.092876e-16	-2.151057e-16	2.428613e-16
##	V109	3.059565e-02	-1.057428e-02	-2.432950e-16	-8.673617e-19	-2.081668e-17
##	V110	-2.189481e-03	-1.472670e-03	4.163336e-17	-5.551115e-17	2.081668e-16
##	V119	-5.820728e-02	3.363344e-02	7.997075e-16	-1.249001e-16	-2.567391e-16
##	V120	-7.952226e-01	1.449461e-01	-1.890849e-16	9.003215e-16	-4.579670e-16
##	V121	6.189390e-02	2.884670e-01	-5.942854e-04	1.005244e-01	7.180877e-02
##	V122	6.189390e-02	2.884670e-01	5.942854e-04	-1.005244e-01	-7.180877e-02
##	V123	-5.415691e-02	4.545175e-02	3.243933e-16	1.082467e-15	1.249001e-16
##	V124	1.995862e-01	6.651747e-01	-9.506285e-16	-6.938894e-18	1.360023e-15
##	V125	7.113851e-02	-6.429450e-02	8.673617e-17	-4.544976e-16	2.983724e-16
##	V126	5.458846e-01	-1.068671e-01	-1.387779e-16	-8.326673e-17	9.436896e-16
##		PC61	PC62	PC63	PC64	

## V7	0.000000e+00	0.000000e+00	0.000000e+00	9.999123e-01
## V8	8.654759e-01	3.488729e-01	8.693761e-03	-5.748550e-04
## V9	3.475265e-02	2.252984e-02	-8.188262e-03	9.341988e-03
## V10	-3.475265e-02	-2.252984e-02	8.188262e-03	-9.341988e-03
## V11	4.823523e-03	5.263325e-01	-4.386704e-01	-5.654627e-04
## V12	-4.228317e-01	5.641914e-01	-3.478574e-01	2.241630e-04
## V13	-1.735960e-01	-1.826804e-01	-7.092900e-02	2.999445e-04
## V14	2.165911e-15	-9.800646e-16	1.355090e-15	3.836213e-18
## V23	4.005068e-16	2.712199e-17	6.248054e-17	7.422492e-19
## V24	-8.261621e-17	2.996735e-16	4.401861e-17	-5.095572e-18
## V25	-8.164042e-16	-1.890849e-16	-8.043967e-16	-1.028845e-18
## V26	6.532318e-16	-2.511012e-16	2.817299e-16	4.900830e-18
## V27	-1.600282e-16	-1.962406e-16	4.336809e-17	3.968225e-18
## V28	7.947202e-17	-5.302833e-16	8.519119e-17	-1.995375e-17
## V29	-8.517530e-17	-6.590594e-17	-4.083207e-16	1.222356e-17
## V30	-2.242943e-16	4.439266e-16	-5.624705e-16	1.799814e-18
## V39	2.172470e-16	-5.453537e-17	3.348558e-16	-1.372950e-18
## V40	1.040834e-17	-1.387779e-16	-8.673617e-17	3.602497e-18
## V41	-4.163336e-17	-5.377643e-17	1.040834e-17	-5.984958e-18
## V42	6.938894e-17	1.214306e-16	1.769418e-16	1.247439e-18
## V43	-4.163336e-17	1.179612e-16	-8.500145e-17	1.084349e-18
## V44	2.619432e-16	-5.204170e-18	1.379105e-16	-1.321535e-18
## V45	-1.880007e-16	-1.843144e-16	4.553649e-18	4.092758e-18
## V46	-3.087808e-16	-1.149254e-16	2.099015e-16	-7.000647e-19
## V55	-3.408732e-16	-1.196959e-16	-5.724587e-17	1.747193e-17
## V56	-3.608225e-16	5.551115e-17	1.734723e-17	-1.820681e-18
## V57	-5.377643e-17	2.428613e-17	8.630249e-17	-2.310365e-19
## V58	-3.469447e-17	-6.765422e-17	-2.775558e-17	-6.505305e-18
## V59	-2.688821e-17	2.949030e-17	1.387779e-16	-3.665856e-18
## V60	1.578598e-16	9.844556e-17	-7.112366e-17	-3.875723e-18
## V61	-2.428613e-16	9.020562e-17	1.092876e-16	-2.018946e-18
## V62	1.075529e-16	1.530893e-16	-6.852158e-17	7.221815e-18
## V71	-1.127570e-16	1.214306e-16	-7.806256e-18	-4.139300e-18
## V72	8.673617e-17	1.387779e-17	-5.551115e-17	2.927346e-18
## V73	1.517883e-17	1.196959e-16	3.122502e-17	-1.000177e-17
## V74	-5.204170e-17	2.636780e-16	-3.469447e-17	-4.011548e-18
## V75	2.081668e-17	1.474515e-16	1.127570e-16	5.421011e-18
## V76	2.393918e-16	2.775558e-16	2.775558e-17	4.987330e-18
## V77	-2.289835e-16	6.938894e-17	4.857226e-17	7.264155e-18
## V78	-1.621966e-16	-8.673617e-17	-1.249001e-16	-3.008661e-18
## V87	-3.070461e-16	-9.020562e-17	3.122502e-17	4.662069e-18
## V88	-6.765422e-17	3.226586e-16	-1.387779e-17	9.215718e-19
## V89	-8.586881e-17	-1.144917e-16	4.423545e-17	3.726945e-18
## V90	3.989864e-17	-2.220446e-16	-1.804112e-16	-4.878910e-19
## V91	-9.367507e-17	-1.387779e-16	-1.387779e-17	-2.927346e-18
## V92	1.214306e-16	1.110223e-16	1.318390e-16	1.626303e-18
## V93	5.551115e-17	-2.636780e-16	-8.326673e-17	5.421011e-19
## V94	2.775558e-17	-1.179612e-16	-3.469447e-17	6.071532e-18
## V103	1.214306e-16	-9.714451e-17	-5.551115e-17	-3.252607e-19
## V104	-9.324139e-18	-1.309716e-16	-3.330669e-16	1.355253e-19
## V105	3.981190e-16	7.546047e-17	5.108761e-16	1.816039e-18
## V106	-1.413800e-16	-1.561251e-16	-3.469447e-17	4.119968e-18
## V107	-4.501607e-16	-2.810252e-16	8.326673e-17	-3.333922e-18
## V108	-1.500536e-16	-2.393918e-16	1.734723e-17	-6.776264e-19

```

## V109  4.488597e-17 -6.852158e-17 -1.682682e-16  3.523657e-19
## V110  3.295975e-16  4.163336e-17 -8.326673e-17 -2.059984e-18
## V119 -5.984796e-17 -7.459311e-17  4.215378e-16 -1.700842e-17
## V120  6.860831e-16 -3.504141e-16  7.511353e-16  9.080193e-19
## V121 -1.406955e-01  3.525355e-01  5.836621e-01  7.869891e-06
## V122  1.406955e-01 -3.525355e-01 -5.836621e-01 -7.869891e-06
## V123  1.626303e-16 -1.405126e-16  1.023487e-16 -5.854692e-18
## V124  4.128642e-16  9.714451e-17  2.220446e-16  3.046608e-17
## V125  1.476250e-15  3.642919e-16 -7.285839e-17  1.002887e-18
## V126  1.058181e-15  3.191891e-16  2.289835e-16  1.165517e-17

```

