

Regression:

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Below are the correlations between each feature and the ERP attribute
The correlation for MYCT is 0.2878055352402867
The correlation for MMIN is 0.8231129282552626
The correlation for MMAX is 0.9041796959295092
The correlation for CACH is 0.6874281228463884
The correlation for CHMIN is 0.6100937548491207
The correlation for CHMAX is 0.6062812184884323
[4, 3, 5, 6, 9]
The performance for testing set
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MAE is 39.88905999126099
MSE is 4503.719157333607
RMSE is 67.10975456171485
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Clustering With PCA and Kmeans to get best results:

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Number of components to keep at least 85% variance: 25
Centers of the Clusters:
[[ 5.14164015e+00  6.15133810e+00 -1.25756483e+00  3.49101956e-02
  7.10196544e+00  4.33565716e+00 -1.05084091e+00 -1.01247869e+00
  2.61892678e+00  2.74428147e-02 -1.48927023e+00 -9.14137505e-01
 -7.59777812e-01  5.18814592e-01 -9.72145540e-01 -9.01508036e-01
 -6.67508618e-01  4.87886532e-01  3.72022265e-01 -1.08832703e+00
  4.87580048e-02 -9.65493319e-02 -5.23869670e-02  1.20844997e+00
 -6.10347289e-02]
 [-1.60616067e+00  1.63245971e+00  1.99347954e-01  2.89807630e+00
  6.12700456e-01 -3.43668073e-01  2.12974683e+00 -3.38778385e-01
 -4.56327616e-01 -1.22880854e-01  3.64910227e-01  3.19739040e-01
  6.54646446e-01  1.80976760e-01  3.75321915e-02  1.66773756e-01
 -2.39713769e-01 -3.01745149e-01  3.38864016e-01  3.01459498e-02
 -2.49241359e-01  1.09484132e-01 -4.92217902e-02  4.30660989e-02
 -1.89967159e-01]
 [-4.21376426e-01  7.60928897e-01  2.47181373e+00 -2.64209310e-01
 -1.08262436e+00 -9.07055344e-02 -1.16300629e-01  2.52742590e-01
  1.30763157e+00 -8.02787146e-01 -1.78200811e-01  1.71197839e-01
 -2.49373572e-01 -3.21394101e-01  2.84806257e-01  2.49231081e-01
  2.75183659e-02 -7.33014653e-03  9.58795378e-02 -1.77040798e-01
  3.53256626e-01 -7.54535987e-03 -9.11255209e-02  1.01282323e-01
  2.17337976e-01]
 [ 1.26395480e+00 -3.90129148e+00  1.12355753e+00 -4.64229871e-02
  1.18271282e+00 -4.88371517e-01 -3.30830365e-01 -1.86018606e+00
  1.02280866e-01 -5.33308419e-01  6.66801224e-01 -1.19499636e-02
 -2.10653079e-03  3.77287862e-01 -2.36830678e-01 -1.61275318e-02
  2.93261723e-01 -6.46633462e-02 -1.06024990e-01  2.38208678e-01
 -7.16771666e-02  1.15085502e-01  7.07533737e-02  9.80820852e-02
 -1.11557677e-01]
 [-1.91969400e+00 -1.12323460e-01 -2.21224972e+00 -1.34122222e+00
 -3.18844145e-01  4.63202362e-02  1.93200656e-01 -4.27221380e-01
  1.59087495e-01  1.40315502e-01 -1.46156293e-01  4.16715536e-01
 -1.25844464e-02  2.52833807e-01  1.10513453e-01 -1.03261909e-01
  1.24780740e-02  1.21939258e-01 -1.05985173e-01 -5.64396441e-02
  1.07674865e-01 -1.50688040e-01 -1.82956247e-01  3.82279085e-02
 -3.08661836e-02]
 [ 1.61475370e+00 -1.94877333e+00 -3.03060210e+00  1.66206411e+00
 -5.68067336e-01 -6.15207621e-02 -8.32922980e-01  1.38107224e+00
  4.95351786e-01 -5.03019298e-01 -4.33987905e-01 -6.75446696e-01
  2.15796812e-01 -3.26899055e-01 -1.28359305e-01  1.38734010e-01
 -2.28964645e-02 -3.74454637e-01  4.78726685e-01  1.80944968e-01
 -5.80027374e-02  2.99468938e-01  3.57346013e-01  1.21195572e-01
  1.13396519e-01]
 [ 4.72289748e-01  3.48913405e+00  5.43564599e-01  3.03785405e-01
 -3.59090992e-01 -1.28813034e+00 -2.06660500e+00 -4.99047759e-01
 -5.52430514e-01  7.18483893e-01  3.45607562e-01  2.68708410e-01
  2.15229299e-01 -2.24746204e-02  3.93914091e-02 -4.57102117e-02
  5.64513906e-02 -8.17957925e-02 -6.67333315e-02  2.66362897e-01
 -4.95590024e-01 -5.29274598e-02  1.34195924e-01 -2.31140665e-01
 -2.54136645e-01]
```

