```
C:\Users\Petro\PycharmProjects\linear_regresion\venv\
Scripts\python.exe C:/Users/Petro/PycharmProjects/
linear_regresion/Regresion_pt2.py
Selecting all features
X_train.shape=  (331, 10)
y_train.shape=  (331,)
X_train [:5] =
[[-0.06363517 -0.04464164 -0.03315126 -0.03321323  0.
00118295  0.02405115
  -0.02499266 -0.00259226 -0.02251653 -0.05906719]
 [ 0.01264814 -0.04464164 -0.02560657 -0.04009893 -0.
03046397 -0.04515466
   0.0780932  -0.0763945  -0.07213275  0.01134862]
 [ 0.03807591  0.05068012  0.00888341  0.04252949 -0.
04284755 -0.02104223
  -0.03971921 -0.00259226 -0.01811369  0.00720652]
 [-0.07816532  0.05068012  0.07786339  0.05285804  0.
07823631  0.0644473
   0.02655027 -0.00259226  0.04067283 -0.00936191]
 [-0.07453279 -0.04464164 -0.0105172  -0.00567042 -0.
06623874 -0.0570543
  -0.00290283 -0.03949338 -0.04257085 -0.0010777 ]]
y_train [:5] =
[214.  98. 127. 233. 168.]
Selecting all features
X_train.shape=  (331, 10)
y_train.shape=  (331,)
X_train [:5] =
[[-0.06363517 -0.04464164 -0.03315126 -0.03321323  0.
00118295  0.02405115
  -0.02499266 -0.00259226 -0.02251653 -0.05906719]
 [ 0.01264814 -0.04464164 -0.02560657 -0.04009893 -0.
03046397 -0.04515466
   0.0780932  -0.0763945  -0.07213275  0.01134862]
 [ 0.03807591  0.05068012  0.00888341  0.04252949 -0.
04284755 -0.02104223
  -0.03971921 -0.00259226 -0.01811369  0.00720652]
 [-0.07816532  0.05068012  0.07786339  0.05285804  0.
07823631  0.0644473
   0.02655027 -0.00259226  0.04067283 -0.00936191]
 [-0.07453279 -0.04464164 -0.0105172  -0.00567042 -0.
```

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06623874 -0.0570543
  -0.00290283 -0.03949338 -0.04257085 -0.0010777 ]]
y_train [:5] =
[214.  98. 127. 233. 168.]
Ridge
R2 train score = 0.42274917339301743
R2 test score = 0.4342973225973644
b: 148.99989270370446,
w= [  31.07148535  -67.8120157   284.12144626  158.
3077359    25.34329106
  -14.63150099 -130.28719404  116.41304414  239.
50188481  108.52469397]
Lasso
R2 train score = 0.36601908968194896
R2 test score = 0.33920924807921515
b: 149.48529539341314,
w= [  0.          -0.         379.30812187   0
.           0.
   0.           -0.           0.         317.42349078
0.        ]
Selecting all features
X_train.shape=  (331, 10)
X_train_poly.shape=  (331, 65)
Polynomial + Linear Regression
R2 train score = 0.6207810962295993
R2 test score = 0.3472243986719092 4
b: 55.74564209005716,
w= [ 1.06137498e+02 -2.77244219e+02  5.11354358e+02  2.
51478306e+02
 -1.82518302e+04  1.59323845e+04  6.66445690e+03  1.
74014774e+02
  6.57536398e+03  9.66610282e+01  2.78325334e+03  3.
85281468e+03
 -1.53395915e+02  9.33380694e+02  7.84255464e+03 -1.
10762461e+04
 -1.11174456e+03  2.01277652e+03  1.35040875e+03 -1.
10327017e+03
 -1.67413428e+00  2.29828166e+03  2.55277891e+02 -6.
62033960e+02
  1.81130613e+03  1.37538779e+02 -6.93403727e+03  1.
68439720e+03
```

```
  1.60179356e+03  1.15224299e+03  3.13930733e+03 -8.
23706391e+02
  6.06446052e+02  9.05587243e+02 -1.25957240e+03  3.
92326702e+02
  7.84474860e+02 -3.72762355e+02  1.50641940e+04 -1.
23251806e+04
 -3.94541792e+03  3.05725415e+03 -5.21151753e+03 -2.
22762962e+03
  8.83280542e+04 -1.14624080e+05 -7.24321258e+04 -3.
63921143e+04
 -2.64089121e+04 -4.87133850e+03  3.72219511e+04  4.
48634626e+04
  2.00114668e+04  1.20913439e+04  9.24913877e+02  1.
31372359e+04
  9.59115876e+03  1.12090903e+04  1.07482695e+04  3.
89815589e+03
  9.14000032e+03  8.77867792e+03  2.96364287e+04  3.
13815886e+03
  1.70557446e+03]

Process finished with exit code 0
```