

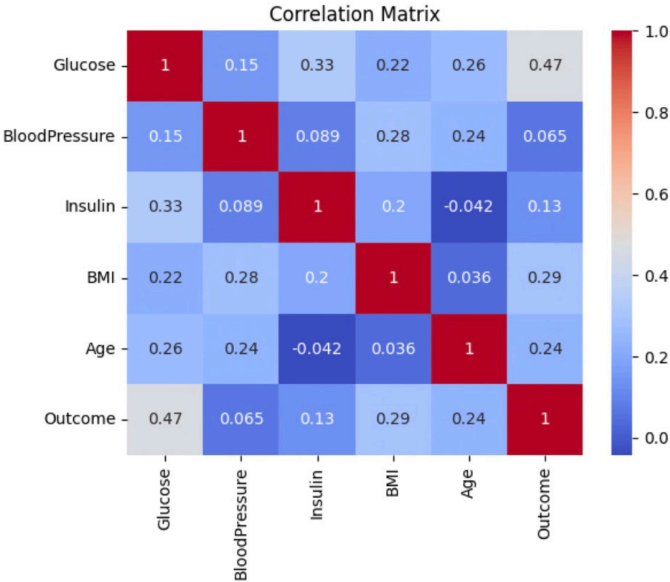
EXPERIMENT 1

|   | Glucose | BloodPressure | Insulin | BMI  | Age | Outcome |
|---|---------|---------------|---------|------|-----|---------|
| 0 | 124     | 80            | 130     | 33.2 | 26  | 0       |
| 1 | 97      | 76            | 0       | 35.6 | 52  | 1       |
| 2 | 156     | 86            | 0       | 24.8 | 53  | 1       |
| 3 | 123     | 62            | 0       | 32.0 | 35  | 1       |
| 4 | 150     | 76            | 0       | 21.0 | 37  | 0       |
| 5 | 181     | 84            | 192     | 35.9 | 51  | 1       |
| 6 | 130     | 70            | 0       | 34.2 | 45  | 1       |
| 7 | 118     | 72            | 0       | 23.1 | 46  | 0       |
| 8 | 158     | 90            | 0       | 31.6 | 66  | 1       |
| 9 | 155     | 74            | 96      | 26.6 | 27  | 1       |



EXPERIMENT 2

|               | Glucose  | BloodPressure | Insulin   | BMI      | Age       | Outcome  |
|---------------|----------|---------------|-----------|----------|-----------|----------|
| Glucose       | 1.000000 | 0.152590      | 0.331357  | 0.221071 | 0.263514  | 0.466581 |
| BloodPressure | 0.152590 | 1.000000      | 0.088933  | 0.281805 | 0.239528  | 0.065068 |
| Insulin       | 0.331357 | 0.088933      | 1.000000  | 0.197859 | -0.042163 | 0.130548 |
| BMI           | 0.221071 | 0.281805      | 0.197859  | 1.000000 | 0.036242  | 0.292695 |
| Age           | 0.263514 | 0.239528      | -0.042163 | 0.036242 | 1.000000  | 0.238356 |
| Outcome       | 0.466581 | 0.065068      | 0.130548  | 0.292695 | 0.238356  | 1.000000 |



REPORT:-

On, a general note, I am not able to find any negative co-relations (except one). This signifies that any pair of variables I take, they are positively co-related to each other which gives a feeling that linear regression can do well on this problem.

But, the +ve co-relations are not too strong as well. (i.e. co-relation values in range (0.5, 1) are null.

Glucose seems to be the most co-related parameter with the outcome and BP is least co-related. Co-relation value of BP and outcome is  $\sim 0.065$  which is very close to zero and suggests that they are near to independent. From this we can make an inference that weight associated with Bp should be small and weight associated to Glucose should be significant.

➡ Accuracy achieved after running closed form on training data = 77.85016286644951  
Accuracy achieved after running closed form on test data = 72.07792207792207

EXPERIMENT 3

