

## Solutions

Deliverable 1- R scripts attached

Deliverable 2 – R scripts is commented with the interpretations

Deliverable 3 – These are deeper interpretations see the comments in R script (line 25-27, 32-35, and 44-47)

### PCA output

```
Residuals:
    Min       1Q   Median       3Q      Max
-11.2404  -1.8713   0.7877   3.8002   5.9446

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  86.7200     1.0548  82.216  < 2e-16 ***
PC1          -3.3291     0.5377  -6.191 0.00000385 ***
PC2           4.1654     1.3780   3.023  0.00648 **
PC3           3.5110     2.3006   1.526  0.14191
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 5.274 on 21 degrees of freedom
Multiple R-squared:  0.7034,    Adjusted R-squared:  0.661
F-statistic: 16.6 on 3 and 21 DF,  p-value: 0.000009287
```

### Regression Output

```
Residuals:
    Min       1Q   Median       3Q      Max
-11.2404  -1.8713   0.7877   3.8002   5.9446

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  86.7200     1.0548  82.216  < 2e-16 ***
PC1          -3.3291     0.5377  -6.191 0.00000385 ***
PC2           4.1654     1.3780   3.023  0.00648 **
PC3           3.5110     2.3006   1.526  0.14191
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