

Assigned parameters	Values
Student Number	13
Prob ID	31763489
P value	0.01
Normalization	preprocessNoob
Statistical test	t-test

Task 3:

Table 1: task 3, flourscent intensity and type of the prob. Prob ID belongs to type II infimum.

Sample	Red fluor	Green fluor	Type	Color
200400320115_R01C01	3070	519	II	Red
200400320115_R02C01	4415	595	II	Red
200400320115_R03C01	3453	592	II	Red
200400320115_R04C01	3115	782	II	Red
200400320115_R02C02	263	301	II	Red
200400320115_R03C02	356	351	II	Red
200400320115_R04C02	2140	425	II	Red
200400320115_R05C02	252	217	II	Red

Task 5:

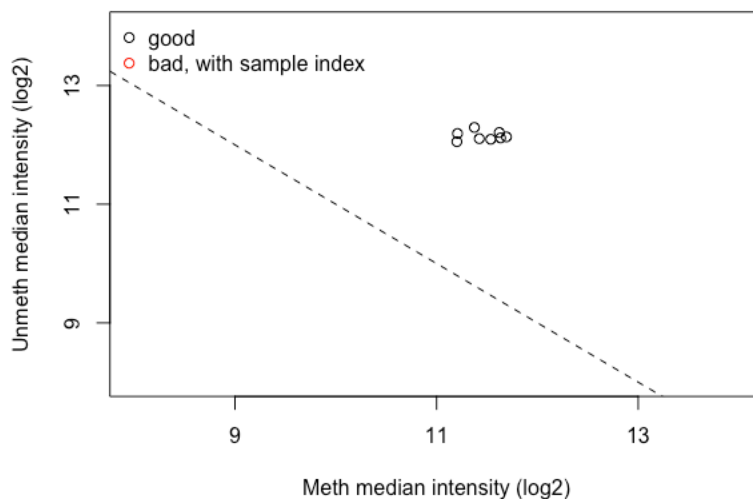


Figure 1 All dots are above the line. showing high median of intensity in methylated and unmethylate state. the quality is good

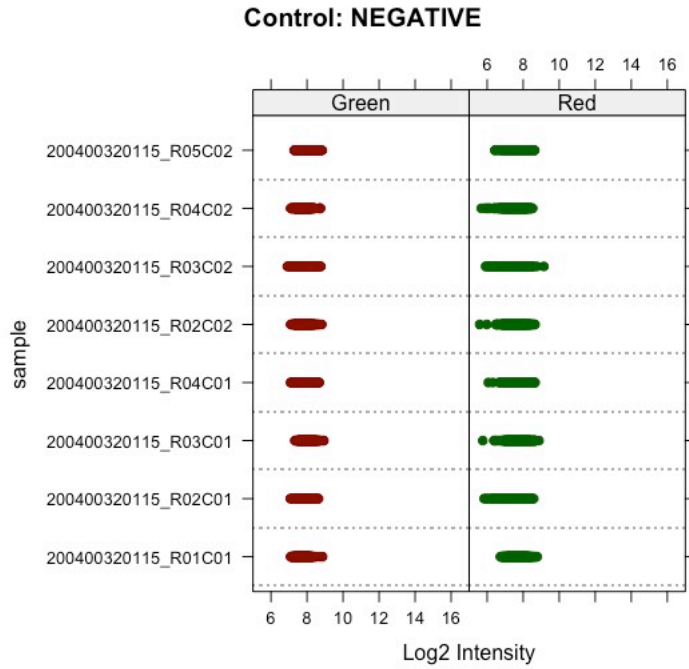


Figure 2 All values below 10 and the quality is good

Table 2: number of probs higher than our threshold (0.01)

Sample	Failed positions
200400320115_R01C01	56
200400320115_R02C01	39
200400320115_R03C01	42
200400320115_R04C01	35
200400320115_R02C02	242
200400320115_R03C02	186
200400320115_R04C02	21
200400320115_R05C02	550

Task 6:

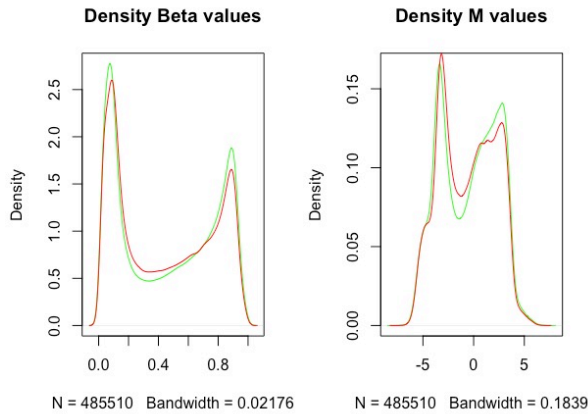


Figure 3: In this figure the WT(green) and MUT(red) are mostly the same however in the extreme parts WT have higher intensity.

Task 7:

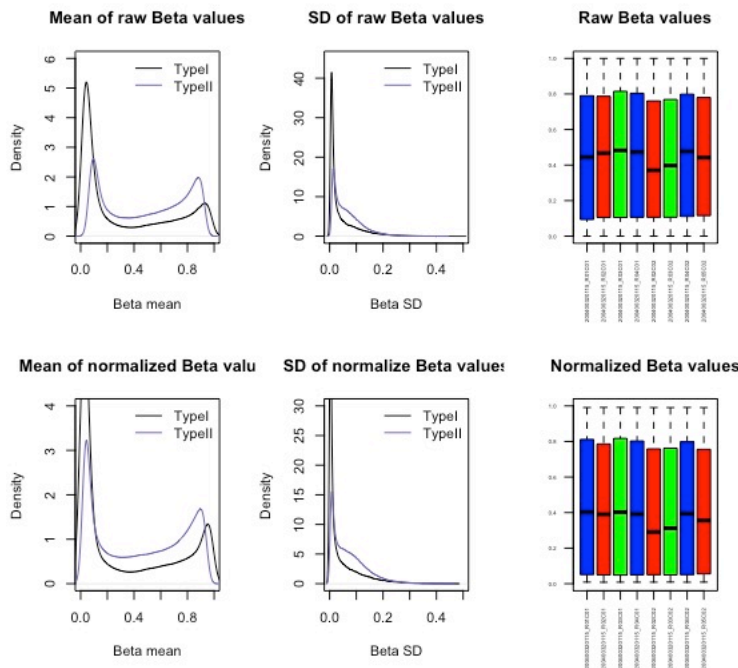


Figure 4: Mean plot, SD plot, and box plot in normalized and unnormalized states

- Mean Plot: Type II probes are less sensitive and they are more centralized. After normalization type II and type I is aligned
- SD plot: Peaks of type II are more lower than type one because of less sensitivity to extreme methylation values. But after normalizations are more closer to type I.

- Box Plot: their distribution, after normalization are more closer and comparable together

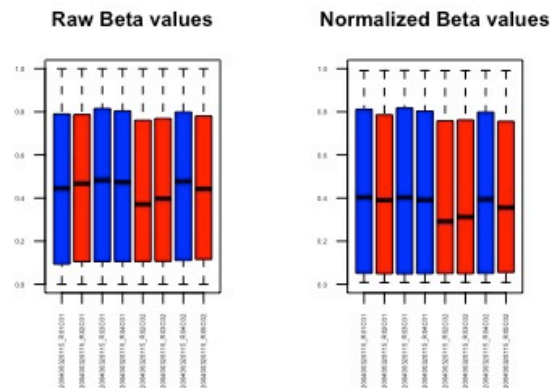


Figure 5, MUT: blue/ WT: red, the variability between two groups is hardly detectable and they almost have identical distributions

Task 8:

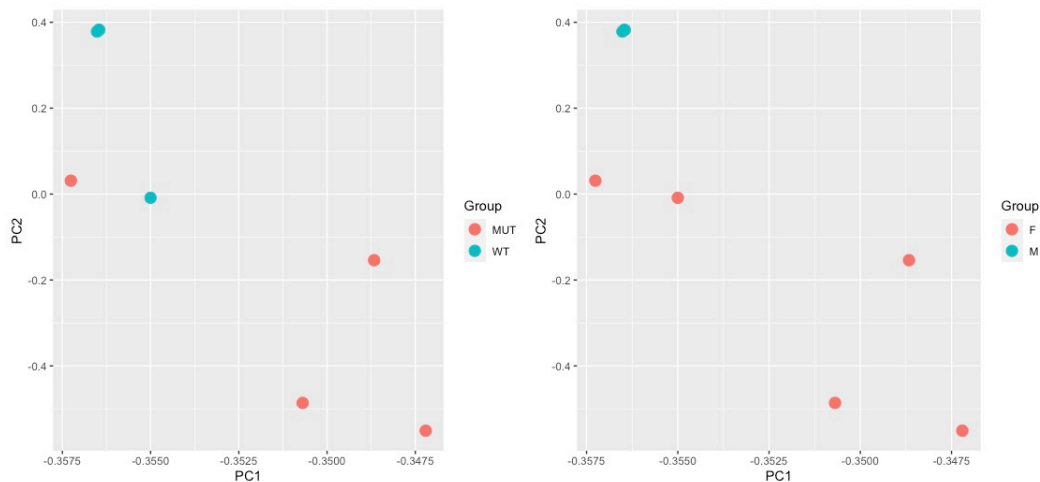


Figure 6: we can see in the PCA are values are well sorted according to target and sex, and target and group

Task 10:

Primary 915 probs have p-value less than or equal to 0.05

With Benferroni correction 2 probs has pvalue less than or equal to 0.05

After BH correction 5 probs shows p value less than or equal to 0.05

Task 11

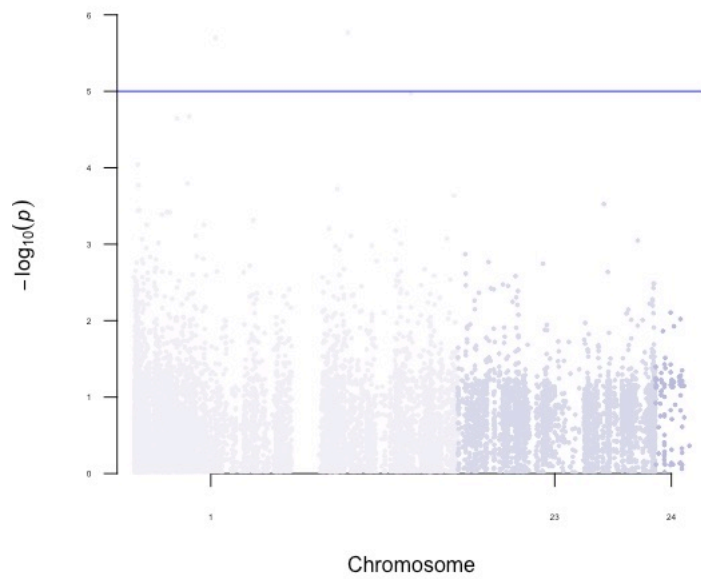
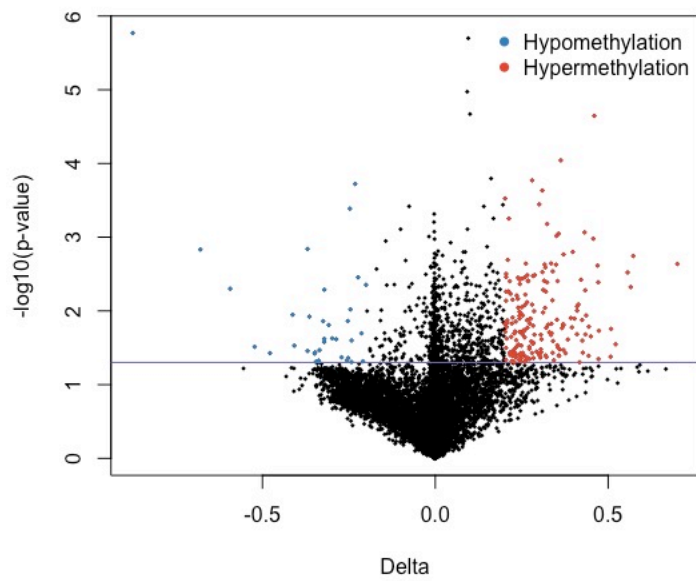


Figure 7: the Volcano and manhattan plot