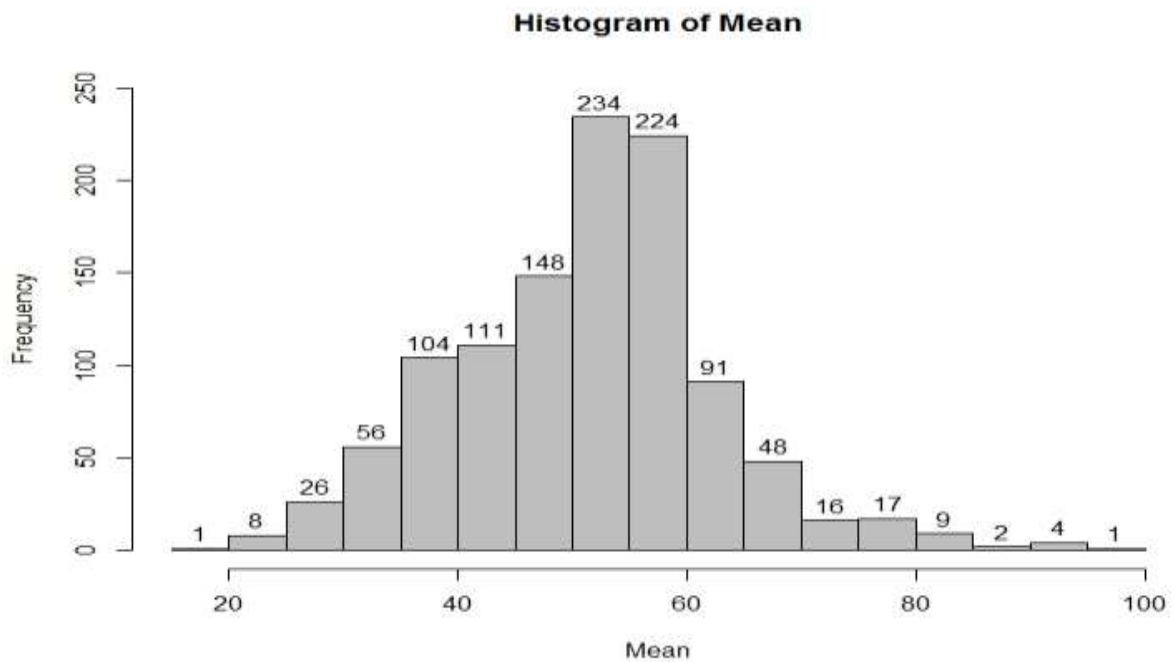


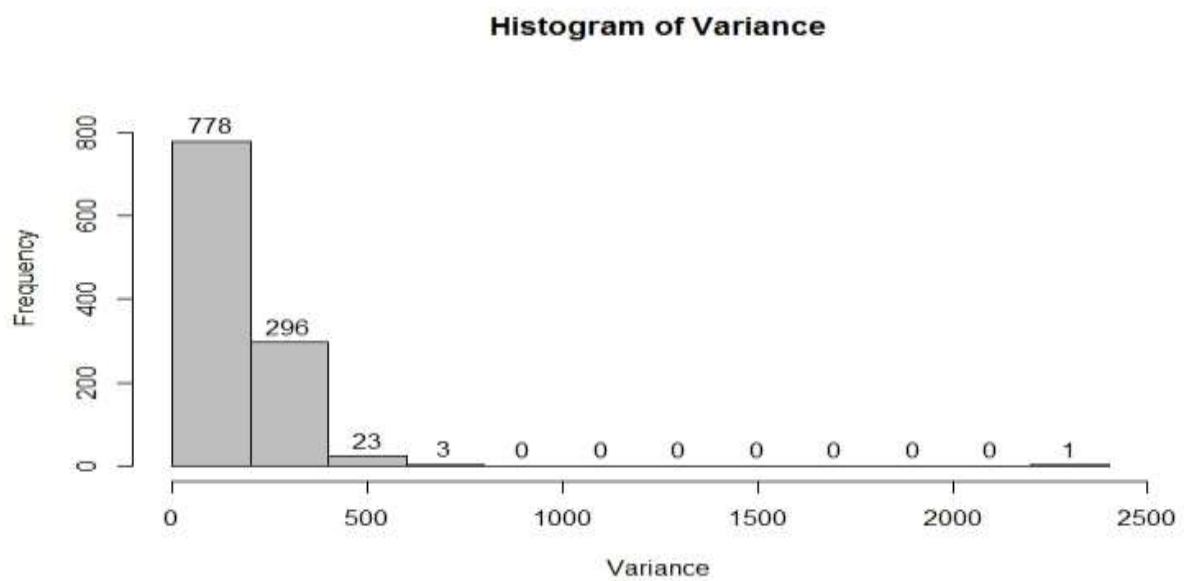
Solution to the Question (b.)

For calculation of Mean, Variance and Missing Percent refer the R code file.

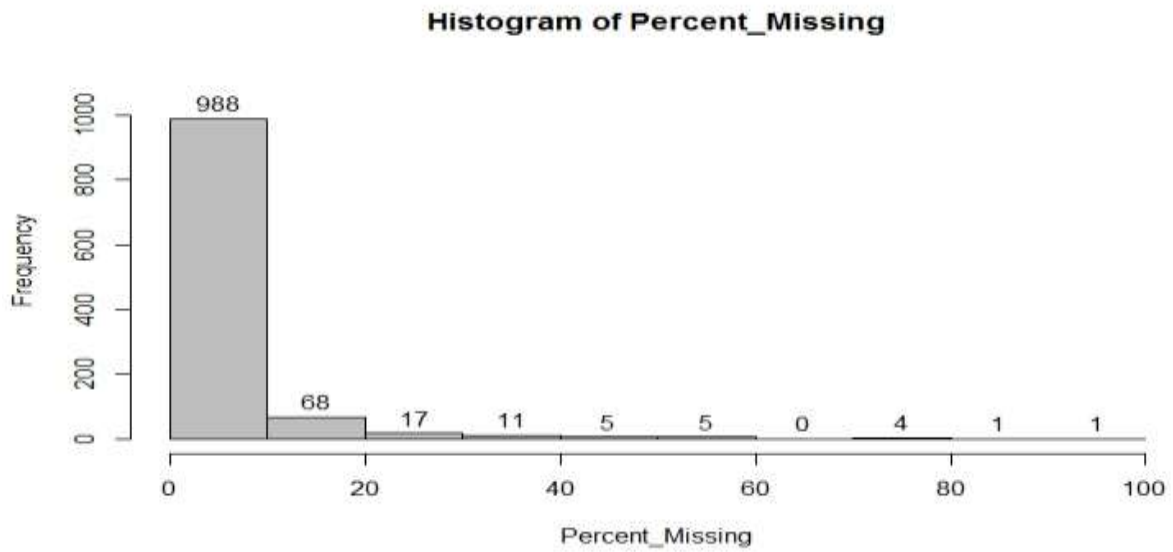
Following is the Histogram for Mean.



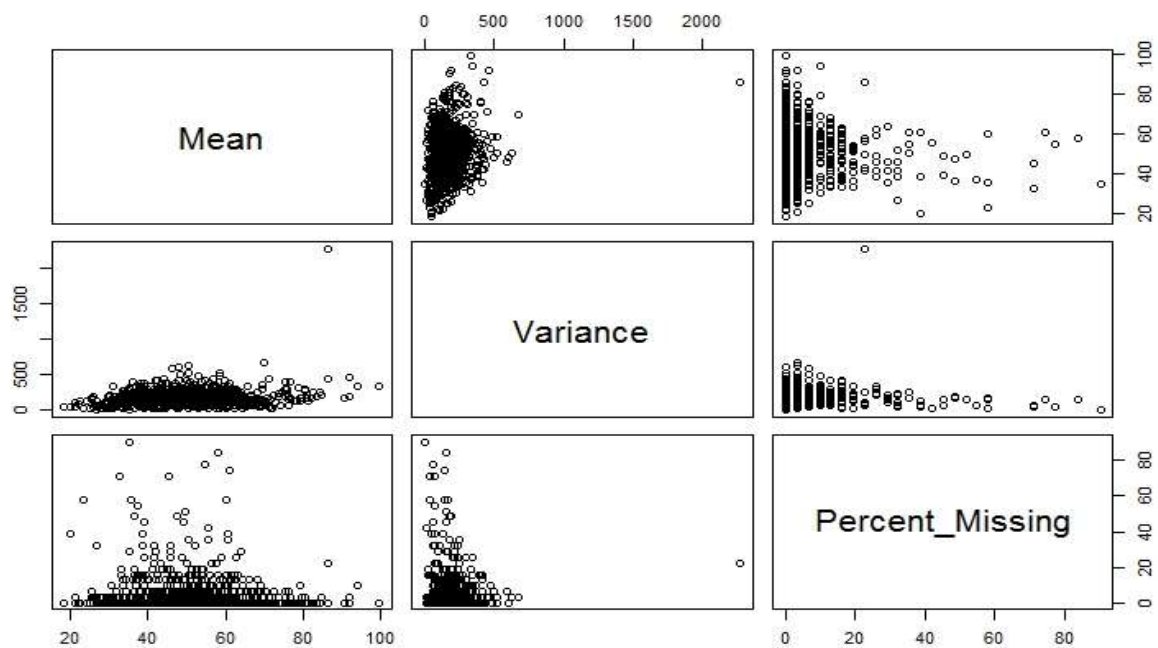
Following is the Histogram for Variance



Following is the Histogram for Missing Percent



Following is the scatter plot of each pair of Mean, Variance and Missing Percent



For procedure of plotting all these please refer the R code file.

Question C: Solution

Fitting linear Regression Model: $Y = a_1 (\text{intercept}) + \beta_1 * x_1 + \beta_2 * x_2 + \text{Error}$.

Here is the R Code: ##### Linear Regression Model#####

Mean of the sites (Mean) = Response variable/ Independent Variable

Variance of the Sites (Variance) = dependent Variable

Percentage Missing of the sites (Percent_Missing)= dependent variable

Here is the R-code:

```
Model=lm(Mean~Variance+ Percent_Missing,data=Result)
summary(Model)
```

Here is the R Output:

Call:

```
lm(formula = Mean ~ Variance + Percent_Missing, data = Result)
```

Residuals:

```
    Min     1Q  Median     3Q     Max
-31.049 -7.486  0.740  6.348 44.978
```

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	48.582848	0.634854	76.526	< 2e-16 ***
Variance	0.017700	0.003074	5.759	1.1e-08 ***
Percent_Missing	-0.103545	0.036124	-2.866	0.00423 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 11.18 on 1097 degrees of freedom

Multiple R-squared: 0.0366, Adjusted R-squared: 0.03484

F-statistic: 20.84 on 2 and 1097 DF, p-value: 1.315e-09

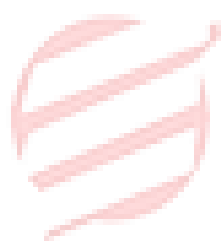
Interpretation:

This model indicates that sites of the variance is positively regressed with mean of the sites and negatively regressed with Percentage Missing. And the beta for the both covariate are significant at 1(alpha) % level of significance.

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