rrBlup for Maize

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References:

We will be using the following reference (rrBLUP Tutorial)for this portion of our project, we will add comments and clarification where needed or where we depart from the demonstration.

Set-Up:

Please install the rrBLUP package with `install.packages('rrBLUP')`, then load the packages with:

```
library(rrBLUP)
```

Load Sample Files:

You will have to change the path for yourself, or comment this line out and set it manually in the R terminal. Load data with either `read.table` or `read.csv` depending on whether or not you have a .txt or .csv file. You might have to st `header=F` in the read command if the marker file does not have names in the header.

```
setwd('/home/scott/Documents/Uni/PhD_Freshman/Foundations_Software/Final_Project')
#marker_data = read.csv('test.csv')
```

Impute Missing Markers:

Because rrBLUP does not allow you to have missing markers (NA values) for its `mixed.solve()` command, we need to impute missing markers. The imputed value is the population mean for that marker. The `max.missing` parameter is used to avoid imputing value for individuals(?) with over 50% missing markers, we don't want to impute with low information. Later we must remove the markers (columns) that did not get any imputed values, i.e they still had some NAs.

```
#initial_impute = A.mat(marker_data, max.missing=0.5, inpute.method='mean', return.imputed=T)
```

```
#final_impute = initial_inpute[,-c(colnum, colnum_2)]
```