Livestock Breeding and Genomics - Exercise 3

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Problem 1: Genotype and Allele Frequencies

Given the dataset available from:

```
## https://charlotte-ngs.github.io/lbgfs2023/data/lbgfs2023_lbg_ex03.csv
```

The dataset can be read using the following command

```
readr::read_delim("https://charlotte-ngs.github.io/lbgfs2023/data/lbgfs2023_lbg_ex03.csv",
delim = ",")
```

In the above dataset, genotypes are encoded as follows

LocusG	LocusH	Code
G_2G_2	H_2H_2	0
G_1G_2	H_1H_2	1
G_1G_1	H_1H_1	2

Your Tasks

- compute genotype frequencies
- compute allele frequencies

Problem 2: Check for Hardy-Weinberg Equilibrium

Use the dataset from Problem 1 and check for Hardy-Weinberg equilibrium at both loci using a χ^2 test.