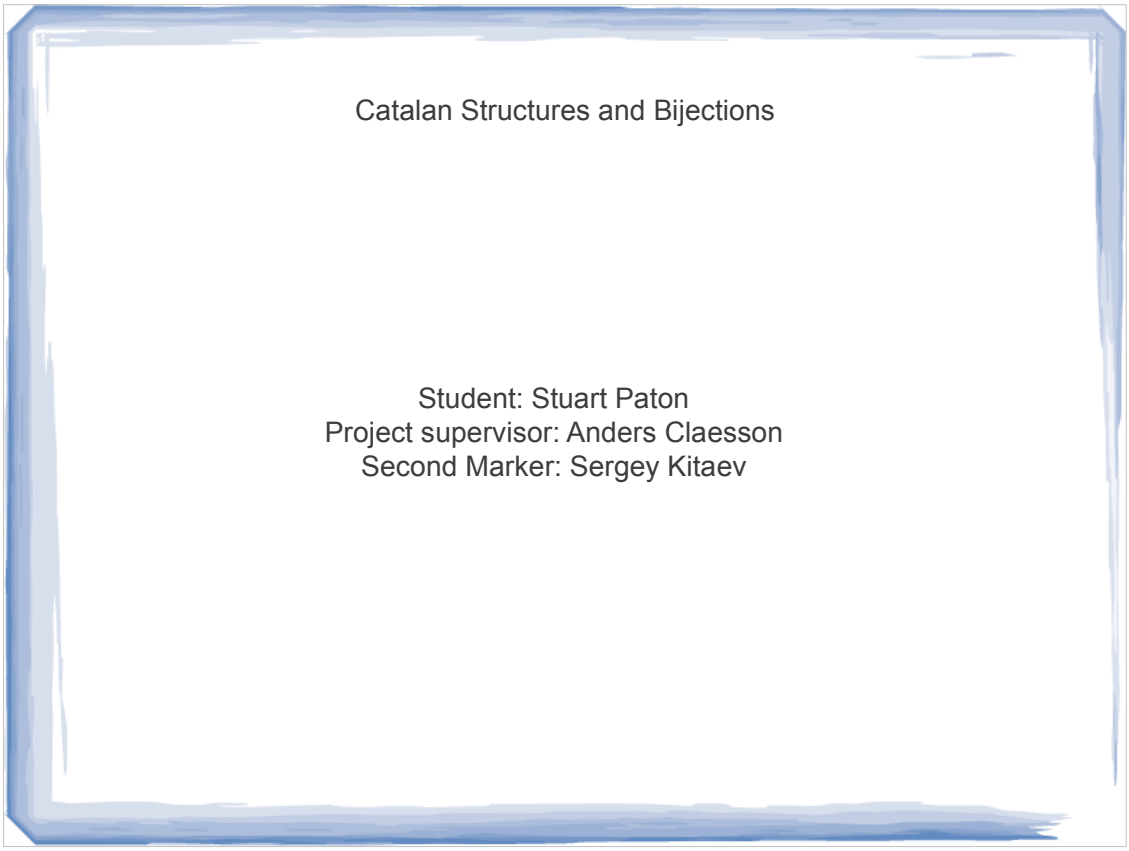
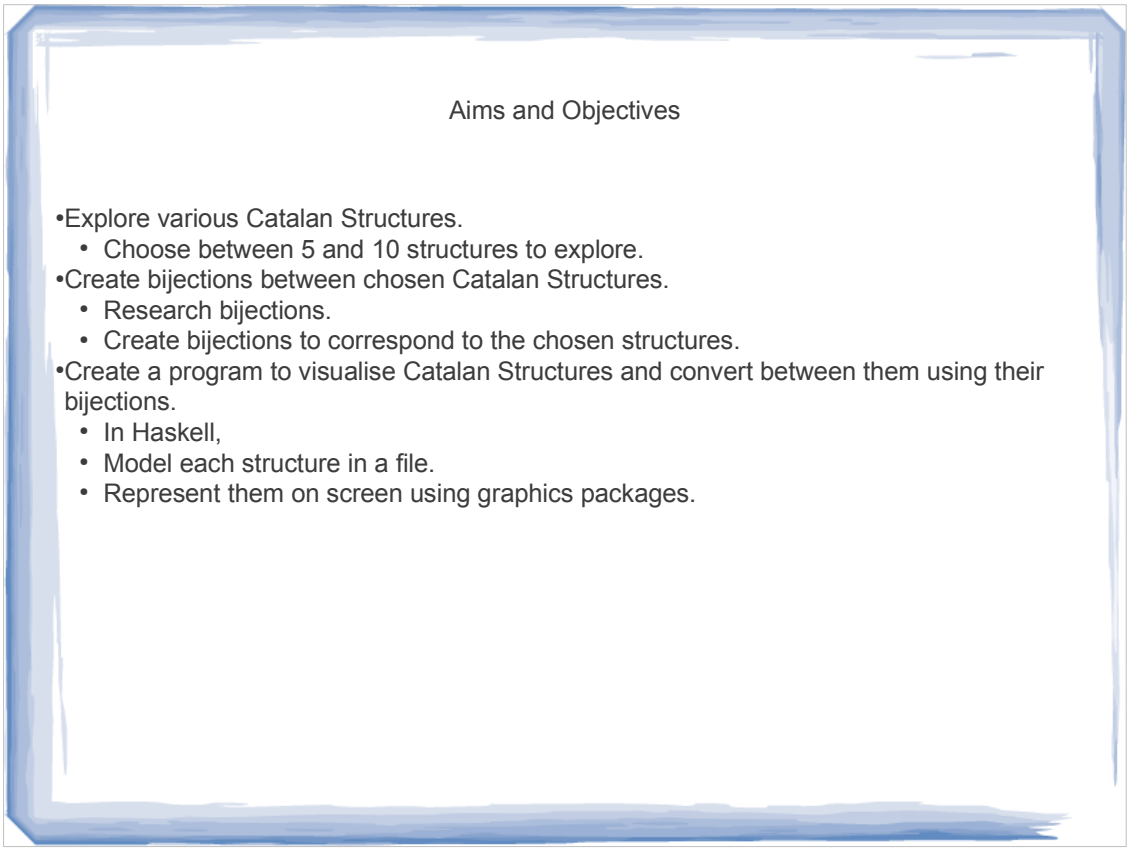


Say hello and introduce the title of the subject.

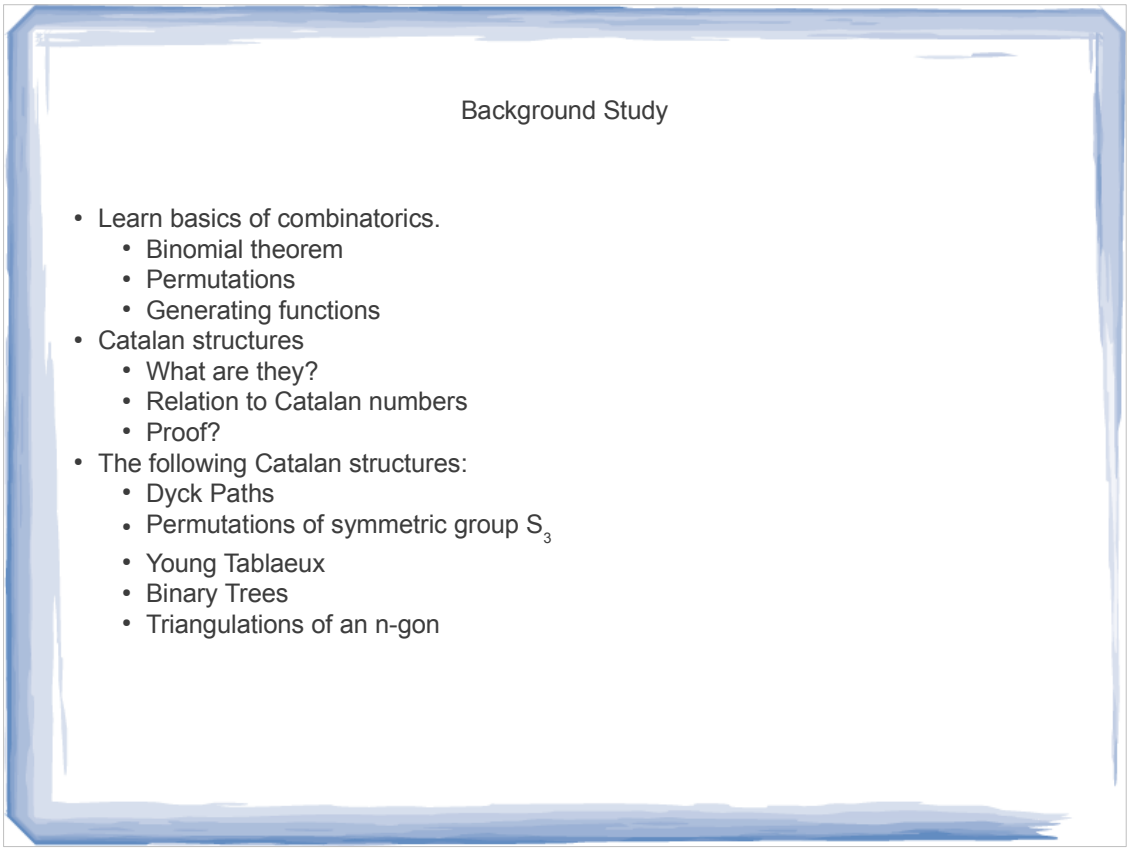
Introduce myself.



Explain the key aims:

Structures so far are:
permutations of S3.
Dyck Paths
Young Tableaux (primarily to biject between dyck path and Av(132) permutations)
Triangulations of an n-gon

Research bijections: Dyck path → SSP and other S3 permutations are in Classification of bijections between 321 and 132 avoiding permutations – Anders Claesson and Sergey Kitaev.

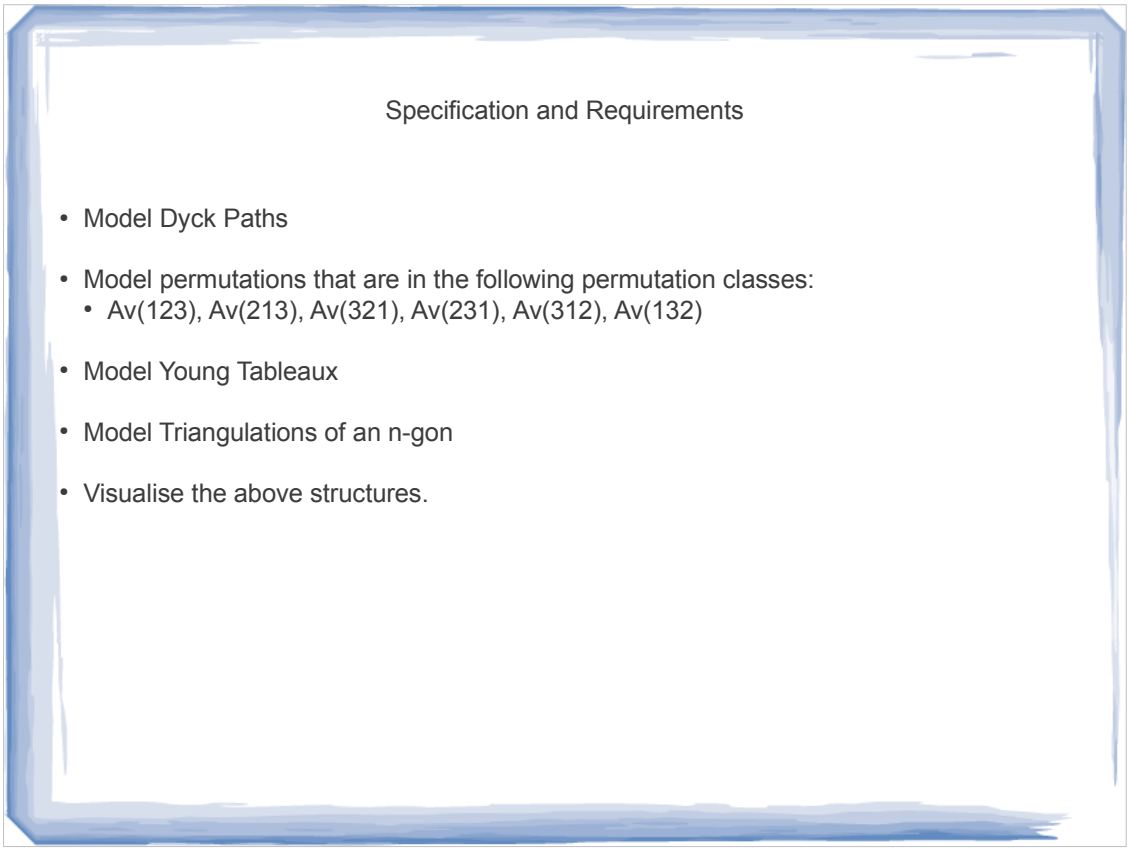


Speak of knowledge of combinatorics: how you know about permutations, binomial theorem and generating functions – and how to find catalan numbers from recurrences to generating functions!

Speak about what Catalan structures actually are:

- Formal power series from structures generating function is the Catalan sequence

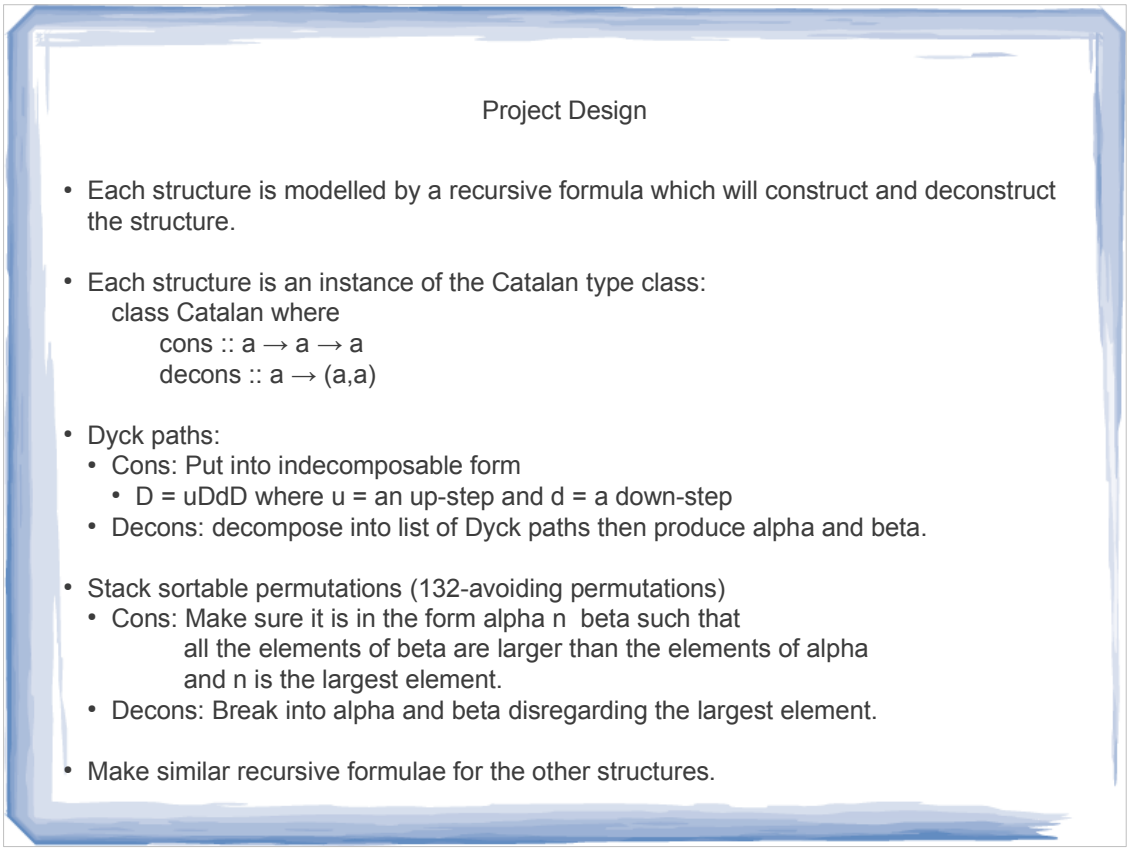
- Each Catalan number is of the form:



Speak about:

Encoding of each structure, and then that it'll be done for each in Haskell and finally that it'll be visualised.

Dyck paths in Haskell
Permutations in Haskell so far
Fact they'll be visualised using Diagrams.

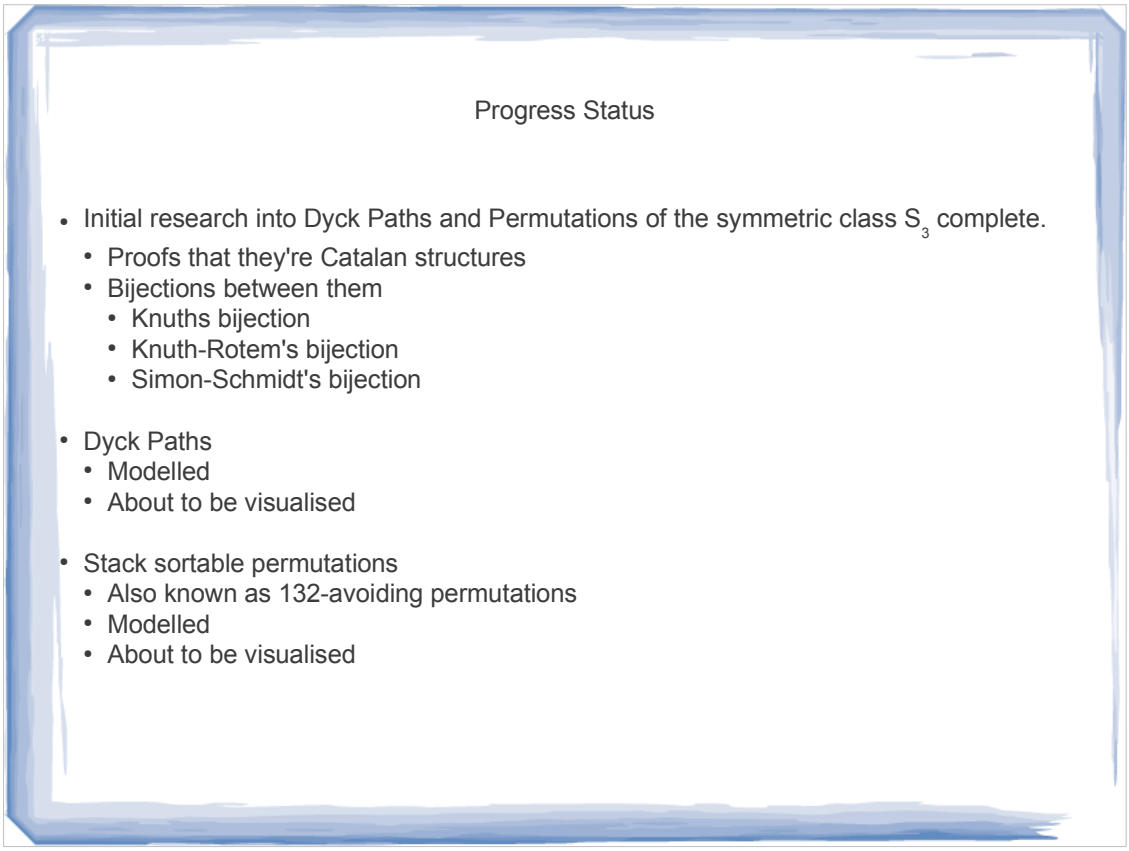


Speak about how to model I will make a recursive mathematical model, and implement in Haskell.

Speak about Catalan typeclass and how each structure is an instance of it (Shown on slide.)

Dyck Path: indecomposable form = U + alpha + D

For the decons part of Dyck paths speak about how it works exactly by getting the height of each element of the Dyck path by their partial sums and how it extracts the alpha and



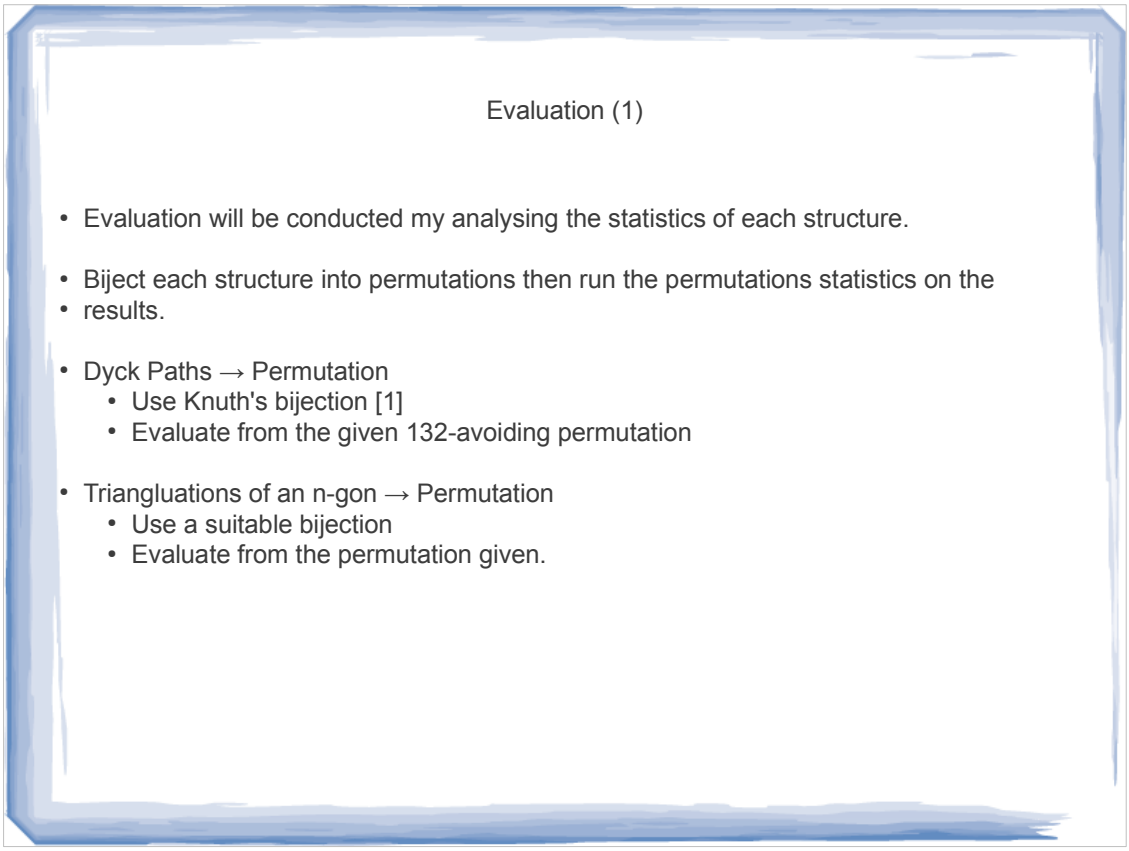
Speak about overall progress so far:

Mention proofs of each structure and that I've written notes on each of them so far in the form of a paper.

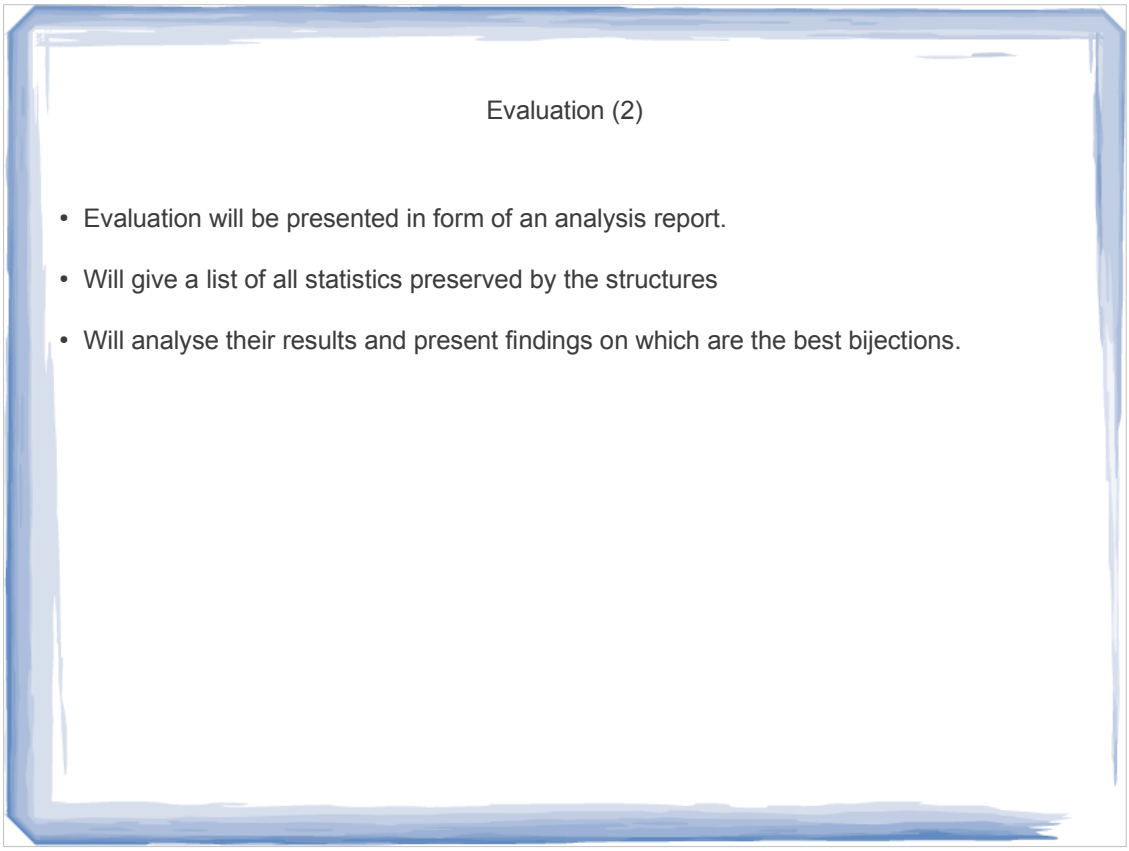
Mention the bijections between Dyck Paths and the permuations of Sym(3).

State how the models of Dyck Paths corresponds with my design.

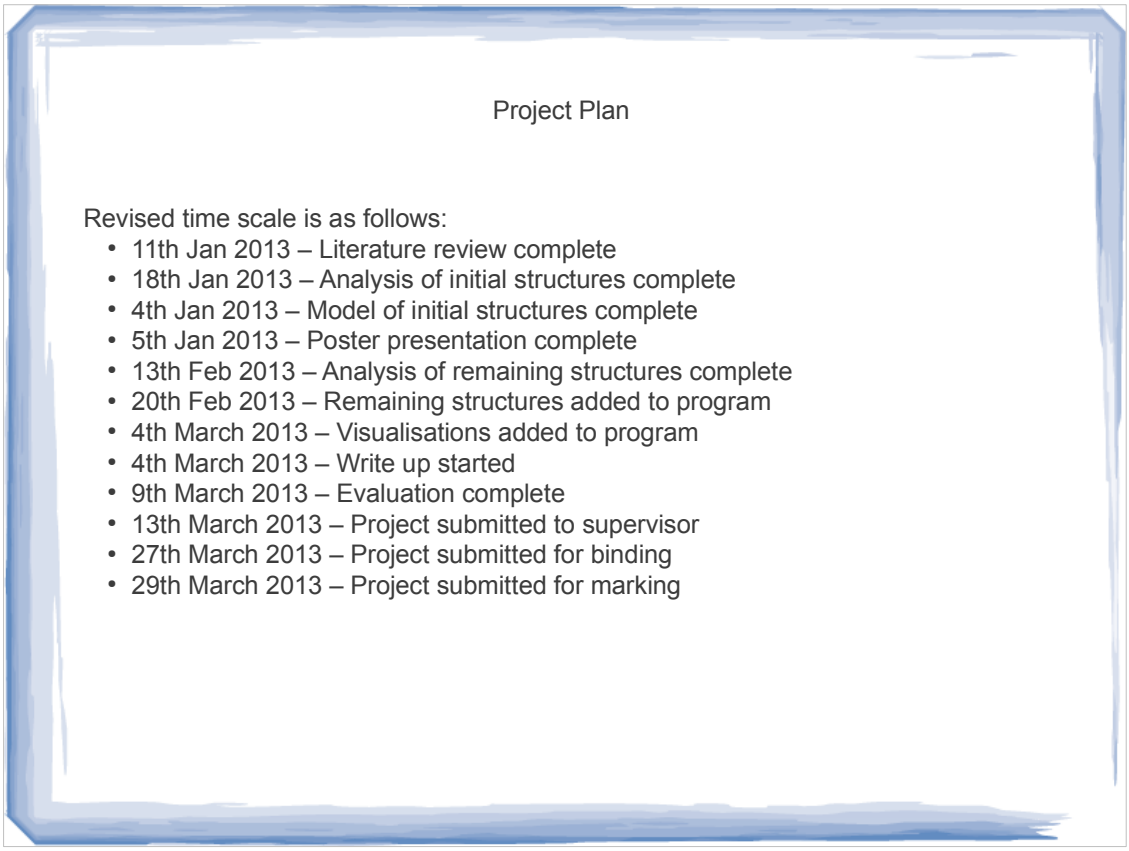
State how the models of



Speak about the base set of permutation statistics and how they will be referenced against.



Speak about ways to presenting the findings.



Speak of how I've revised my plan from original plan.