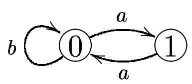
: In the theory of *symbolic dynamical systems* one is concerned with sets of sequences – words – written using a finite alphabet. For instance the alphabet could be $\{0,1\}$ and X_1 the set of doubly infinite sequences in which the word '11' never occurs, as

$$\ldots 00010010010010000001001010101 \ldots$$

Another example is the set X_2 of sequences over the alphabet $\{a,b\}$ in which there is always an even number of 'a' between to consecutive 'b', as

$$\ldots baaaabbaabbbaaaaaabaaaabaab \ldots$$

Note that X_1 and X_2 both can be described as the labels one can encounter under a walk on the graph:



The system is made "dynamic" by considering also the right shift on the space. Such dynamical systems were introduced to study more complex topological dynamical systems, but have proved to have important applications in a surprisingly varied selection of scientific subjects within both pure and applied mathematics. We mention *Markov chains* from statistics; *billard systems* from physics; *formal languages*, *automata theory*, *data storage* and *data compression* from computer science. Among mathematical disciplins where they have been useful the lecturer is particularly partial to *operator algebras*.

The fundamental theory of symbolic dynamics employs elements of graph theory, linear algebra, metric spaces and real analysis. One recurring theme is what similarities and dissimilarities persist between systems which, like X_1 and X_2, "inhabit" the same graph.

To the extent that the participants are interested and can be convinced to share their knowledge from subjects such as the ones above, we can focus on applications in up to a third of the time allotted.