Simulation design:

Possible research:

* Watch tutorials of building card towers (effective/efficient ways to build)
* Research more about card shapes, materials, flexibility

Card specifications needed to be considered:

* Weight of a single card
* Width
* Length
* Thickness

Card selection:

* Loop load cards
* Generate new cards (set designs for the cards)
* Choice of cards? 52
* Random picking for the Ai to use. To have a good end display
  + Take away card design once used
* Place two cards at a time leaning against one another

Training the system:

* Initial test- Place two cards balancing on one another
* Testing with 5 cards, all going horizontally (focusing on continuously having pairs of cards balancing)
* Further testing of singular rows building to the right ->, building to the left
* Start testing with building upwards
* Development- continuously add on the number of cards required for the tower
* Final test – create a card tower/house of cards that is 5 cards high 5 cards wide

Final rendering of the simulation:

* Table- with a tablecloth
* Stack of cards

Output/visual data:

* Card placement order
* Paired cards angels
* Card angle from the ground
* Card force downwards

Possible future measurements:

* Card friction from base

Standard playing cards measurements:

* 64mm horizontally
* 89mm virtually
* Weight: 300-310 GSM (Grams per quare metre)
  + - Weight calculation: 0.064\*0.089 =0.005696 metres squared

Ans \* 300= 1.7088g

Force:

* Need the cards to reach equilibrium force, forces must be equal
* Cards are acting against one another
* Card and base (friction, weight)

Once working:

* change weight of cards 300-310gsm. Test with different weights to see if there are differences in the most efficient structure for a card tower
* possible randomisation of card weight to implement more lifelike anomalies and variances in production of cards

Future development:

* does difference in the simulated “ground” texture effect the ideal angle of the cards

Collecting data:

* Optimisation
  + Creating a graph that displays the effectiveness of each angle between cards
  + Effectiveness can be measured by likely hood to fall/ time expected to drop