# EECS 510 Final Project

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#### 1. General Description

blah blah blah testing doing this locally i guess if it compiles, it compiles testing again

#### 2. Grammar for the Language

Move Name for each State (Paired together for general buttons/functionality): S is the initial variable for the beginning of a combo

State	Name
$\overline{S}$	Neutral State
$q_{ss}$	Side Smash
$q_{os1}$	Overhead Smash I
$q_{os2}$	Overhead Smash II
$q_u$	Upswing
$q_{bb1}$	Big Bang I
$q_{bb2}$	Big Bang II
$q_{bb3}$	Big Bang III
$q_{bb4}$	Big Bang IV
$q_{bbf}$	Big Bang Finisher
$q_{sb1}$	Spinning Bludgeon (Time 0)
$q_{sb2}$	Spinning Bludgeon (Time 1)
$q_{sb3}$	Spinning Bludgeon (Time 2)
$q_{sss}$	Spinning Side Smash
$q_{sfu}$	Spinning Follow Up
$q_{ssu}$	Spinning Strong Upswing
$q_{c1}$	Charge (Time 0)
$q_{c2}$	Charge (Time 1)
$q_{c3}$	Charge (Time 2)
$q_{csb}$	Charged Side Blow
$q_{cu}$	Charged Upswing
$q_{cbb}$	Charged Big Bang
$q_{cfu}$	Charged Follow-up
$q_{mc1}$	Mighty Charge (Time 0)
$q_{mc2}$	Mighty Charge (Time 1)
$q_{mcu}$	Mighty Charge Upswing
$q_{mcs}$	Mighty Charge Slam
$q_{fben}$	Focus Blow: Earthquake (No Wound)
$q_{fbew1}$	Focus Blow: Earthquake (Wound Option 1)
$q_{fbew2}$	Focus Blow: Earthquake (Wound Option 2)

```
S \rightarrow yq_{os1} \mid bq_{bb1} \mid rq_{c1} \mid fq_{fben} \mid fq_{fbew1} \mid yq_{ss} \mid \lambda
q_{ss} \rightarrow yq_{os2} \mid bq_bb1 \mid rq_{c1} \mid cq_{sb1} \mid S
q_{os1} \rightarrow yq_{os2} \mid bq_bb1 \mid rq_{c1} \mid cq_{sb1} \mid S
q_{os2} \rightarrow yq_u \mid bq_bb1 \mid rq_{c1} \mid cq_{sb1} \mid S
q_u \rightarrow bq_{bb1} \mid rq_{c1} \mid cq_{sb1} \mid dq_{mc1} \mid S
q_{bb1} \rightarrow bq_{bb2} \mid rq_{c1} \mid S
q_{bb2} \rightarrow bq_{bb3} \mid rq_{c1} \mid S
q_{bb3} \rightarrow bq_{bb4} \mid rq_{c1} \mid S
q_{bb4} \rightarrow bq_{bbf} \mid dq_{mc1} \mid rq_{c1} \mid S
q_{bbf} \rightarrow rq_{c1} \mid cq_{sb1} \mid S
q_{sb1} \rightarrow q_{sb2} \mid yq_{sss}
q_{sb2} \rightarrow q_{sb3} \mid yq_{sfu}
q_{sb3} \to S \mid yq_{ssu}
q_{sss} \rightarrow y q_{os2} \mid b q_{bb1} \mid r q_{c1} \mid S
q_{sfu} \rightarrow yq_{os1} \mid bq_{bb1} \mid rq_{c1} \mid S
q_{ssu} \rightarrow yq_{os1} \, | \, bq_{bb1} \, | \, rq_{c1} \, | \, dq_{mc1} \, | \, S
q_{c1} \rightarrow q_{c2} \mid rq_{csb} \mid yq_{csb} \mid bq_{cs1} \mid fq_{fben} \mid fq_{fbew1}
q_{c2} \rightarrow q_{c3} \mid rq_{csu} \mid yq_{csu} \mid bq_{cs2} \mid fq_{fben} \mid fq_{fbew1}
q_{c3} \rightarrow rq_{cbb} \mid yq_{cbb} \mid bq_{cs3} \mid cq_{mc1} \mid fq_{fben} \mid fq_{fbew1}
q_{csb} \rightarrow yq_{cfu} \mid bq_{ss} \mid rq_{c1} \mid S
q_{cu} \rightarrow yq_{cfu} \mid bq_{bb1} \mid rq_{c1} \mid cq_{sb1} \mid S
q_{cbb} \rightarrow rq_{c1} \, | \, cq_{sb1} \, | \, yq_{os1} \, | \, bq_{bb1} \, | \, yq_{ss} \, | \, S
q_{cfu} \rightarrow yq_{os1} \mid bq_{bb1} \mid rq_{c1} \mid cq_{sb1} \mid S
q_{mc1} \rightarrow q_{mc2} \mid rq_{mcu} \mid yq_{mcu}
q_{mc2} \rightarrow rq_{mcs} \mid yq_{mcs}
q_{mcu} \rightarrow yq_{os1} \mid yq_{ss} \mid bq_{bb1} \mid cq_{sb1} \mid S
q_{mcs} \rightarrow cq_{sb1} \, | \, yq_{os1} \, | \, yq_{ss} \, | \, bq_{bb1} \, | \, S
q_{fben} \rightarrow bq_{bb1} | rq_{c1} | S
q_{fbew1} \rightarrow rq_{c1} \mid q_{fbew2}
q_{fbew2} \rightarrow rq_{c1} \mid yq_{os2} \mid S
```

#### 3. Automaton

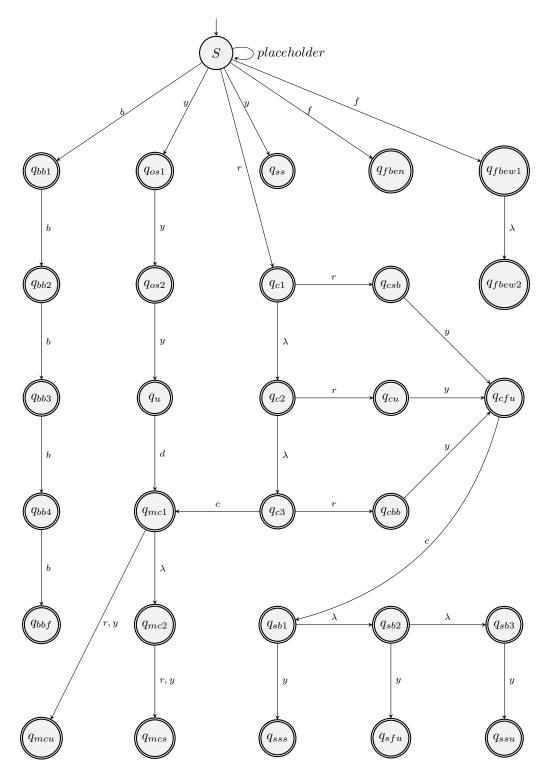


Figure 1: Automaton for Language

- 4. Data Structure
- 5. Testing