

CSE 484 HW1 REPORT

This report details the implementation of Turkish plural and possessive rules in a finite state transducer using the OpenFST library.

Output Analysis: The system determines whether a given Turkish word follows plural or possessive rules.

```
şamdanlar    -> Category: plural
kedi         -> Category: neither plural nor possessive
arabam       -> Category: possessive
evler        -> Category: plural
köpek        -> Category: neither plural nor possessive
kitaplar     -> Category: plural
çocuk        -> Category: neither plural nor possessive
kale         -> Category: neither plural nor possessive
dolaplar     -> Category: plural
bilgisayarlar -> Category: plural
masam        -> Category: possessive
defterler    -> Category: plural
```

Plural Rule:

Based on the last vowel in the word.

If the last vowel is a back vowel (a, ɪ, o, u), add the suffix 'lar'.

If the last vowel is a front vowel (e, i, ö, ü), add the suffix 'ler'.

Possessive Rule:

Based on the last vowel and whether the word ends in a consonant.

For 'ai':

Without a final consonant: Add 'ım', 'ın', 'i'.

With a final consonant: Add 'm', 'n', 'si'.

For 'ei':

Without a final consonant: Add 'im', 'in', 'i'.

With a final consonant: Add 'm', 'n', 'si'.

For 'ou':

Without a final consonant: Add 'um', 'un', 'u'.

With a final consonant: Add 'm', 'n', 'su'.

For 'öü':

Without a final consonant: Add 'üm', 'ün', 'ü'.

With a final consonant: Add 'm', 'n', 'sü'.

Here are few example outputs:

