LIN 177 Homework 6

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1. One such program is as follows:

```
morph(revolution).

abides(Morph, Morphary) :-
    atom_concat(Morph, ary, Morphary).

counter(Morph, Countermorph) :-
    atom_concat(counter, Morph, Countermorph).

counterrevolutionary(Morph) :-
    morph(X),
    counter(X, Y),
    abides(Y, Morph).
counterrevolutionary(Morph) :-
    morph(X),
    abides(X, Y),
    counter(Y, Morph).
```

The output of this program is:

```
?- counterrevolutionary(X).
X = counterrevolutionary ;
X = counterrevolutionary.
```

2. One such program is as follows:

```
carribean([m, o, m, e, n, t], [stem]).
carribean([p, o, k], [stem]).

carribean([i, t], [affix, diminutive]).
carribean([i, k], [affix, diminutive]).

carribean([o], [affix, masculine]).

carribean(Carribean, [stem]):-
    append(Stem, Dim, Carribean),
    last(Dim, t),
    last(Stem, k),
    carribean(Dim, [affix, diminutive]),
    carribean(Stem, [stem]).

carribean(Carribean, [stem]):-
    append(Stem, Dim, Carribean),
    last(Dim, k),
    last(Stem, t),
    carribean(Dim, [affix, diminutive]),
    carribean(Stem, [stem]).

carribean(Carribean, [noun, masculine]):-
    append(Stem, Affix, Carribean),
    carribean(Stem, [stem]),
    carribean(Affix, [affix, masculine]).
```

The output of this program is:

```
?- carribean(X, [noun, masculine]).
X = [p,o,k,o] ;
X = [p,o,k,i,t,o] ;
X = [m,o,m,e,n,t,o] ;
X = [p,o,k,i,t,i,k,o] ;
X = [m,o,m,e,n,t,i,k,o] ;
X = [p,o,k,i,t,i,k,i,t,o] ;
X = [m,o,m,e,n,t,i,k,i,t,o]
```

3. One such program is as follows:

```
dutch([b, e, e, n],    [noun, individual]).
dutch([b, e, r, g],    [noun, individual]).
dutch([s, t, e, e, n], [noun, individual]).
dutch([d, i, e, r],    [noun, individual]).

dutch(Noun, [noun, collective]) :-
    dutch(NounIndividual, [noun, individual]),
    append([[g, e], NounIndividual, [t, e]], Noun).
```

The output of this program is:

```
?- dutch(X, Y).
X = [b,e,e,n],
Y = [noun,individual] ;
X = [b,e,r,g],
Y = [noun,individual] ;
X = [s,t,e,e,n],
Y = [noun,individual] ;
X = [d,i,e,r],
Y = [noun,individual] ;
X = [g,e,b,e,e,n,t,e],
Y = [noun,collective] ;
X = [g,e,b,e,r,g,t,e],
Y = [noun,collective] ;
X = [g,e,s,t,e,e,n,t,e],
Y = [noun,collective] ;
X = [g,e,d,i,e,r,t,e],
Y = [noun,collective] ;
false.
```

4. The states that allow friggin' infixation are:

   - Ala-friggin'-bama
   - Ari-friggin'-zona
   - Cali-friggin'-fornia
   - Colo-friggin'-rado
   - Dela-friggin'-ware
   - Flori-friggin'-da
   - Ida-friggin'-ho
   - Illi-friggin'-nois
   - Indi-friggin'-ana
   - Ken-friggin'-tucky
   - Louisi-friggin'-ana

- Mary-friggin'-land
- Massa-friggin'-chusetts
- Michi-friggin'-gan
- Minne-friggin'-sota
- Missi-friggin'-ssippi
- Mon-friggin'-tana
- Ne-friggin'-braska
- Ne-friggin'-vada
- New-friggin'-hampshire or New Hamp-friggin'-shire
- New-friggin'-Jersey
- New-friggin'-Mexico or New Mexi-friggin'-co
- New-friggin'-York
- North-friggin'-carolina or North Caro-friggin'-lina
- North-friggin'-dakota
- O-friggin'-hio
- Okla-friggin'-homa
- Pennsyl-friggin'-vania
- Rhode-friggin'-Island
- South-friggin'-Carolina or South Caro-friggin'-lina
- South-friggin'-Dakota
- Tenne-friggin'-ssee
- Ver-friggin'-mont
- Vir-friggin'-ginia
- Washing-friggin'-ton
- West-friggin'-Virginia or West Vir-friggin'-ginia
- Wis-friggin'-consin
- Wy-friggin'-oming

One such program for this is as follows:

```
feet(alabama, [ala, bama]).
feet(alaska, [alaska]).
feet(arizona, [ari, zona]).
feet(arkansas, [arkansas]).
feet(california, [cali, fornia]).
feet(colorado, [colo, rado]).
feet(connecticut, [connecticut]).
feet(delaware, [dela, ware]).
feet(florida, [flori, da]).
feet(georgia, [georgia]).
feet(hawaii, [hawaii]).
feet(idaho, [ida, ho]).
feet(illinois, [illi, nois]).
feet(indiana, [indi, ana]).
feet(iowa, [iowa]).
feet(kansas, [kansas]).
feet(kentucky, [ken, tucky]).
feet(louisiana, [louisi, ana]).
feet(maine, [maine]).
feet(maryland, [mary, land]).
feet(massachusetts, [massa, chusetts]).
feet(michigan, [michi, gan]).
feet(minnesota, [minne, sota]).
feet(mississippi, [missi, ssippi]).
feet(missouri, [missouri]).
feet(montana, [mon, tana]).
feet(nebraska, [ne, braska]).
feet(nevada, [ne, vada]).
feet(new-hampshire, [new, hamp, shire]).
feet(new-jersey, [new, jersey]).
feet(new-mexico, [new, mexi, co]).
feet(new-york, [new, york]).
feet(north-carolina, [north, caro, lina]).
feet(north-dakota, [north, dakota]).
feet(ohio, [o, hio]).
feet(oklahoma, [okla, homa]).
feet(oregon, [oregon]).
feet(pennsylvania, [pennsyl, vania]).
feet(rhode-island, [rhode, island]).
feet(south-carolina, [south, caro, lina]).
feet(south-dakota, [south, dakota]).
feet(tennessee, [tenne, ssee]).
feet(texas, [texas]).
feet(utah, [utah]).
feet(vermont, [ver, mont]).
feet(virginia, [vir, ginia]).
feet(washington, [washing, ton]).
feet(west-virginia, [west, vir, ginia]).
feet(wisconsin, [wis, consin]).
feet(wyoming, [wy, oming]).

friggin(State, FrigginState) :-
```

```
    %% Get all the states with more than one foot.
    feet(State, [FirstFoot|Feet1]),
    %% Get a list of just the middle sections.
    append(Feet2, [LastFoot], Feet1),
    %% Try different `-friggin-` in different positions.
    select('-friggin\'-', Frigged, Feet2),
    %% Shove everything into a list.
    append([[FirstFoot], Frigged, [LastFoot]], Atoms),
    %% Concat it back together into a single atom.
    atomic_list_concat(Atoms, FrigginState).
```

The output of this program is:

```
?- findall(X, friggin(Y, X), Z).
Z = [ ala-friggin'-bama
    , ari-friggin'-zona
    , cali-friggin'-fornia
    , colo-friggin'-rado
    , dela-friggin'-ware
    , flori-friggin'-da
    , ida-friggin'-ho
    , illi-friggin'-nois
    , indi-friggin'-ana
    , ken-friggin'-tucky
    , louisi-friggin'-ana
    , mary-friggin'-land
    , massa-friggin'-chusetts
    , michi-friggin'-gan
    , minne-friggin'-sota
    , missi-friggin'-ssippi
    , mon-friggin'-tana
    , ne-friggin'-braska
    , ne-friggin'-vada
    , new-friggin'-hampshire
    , newhamp-friggin'-shire
    , new-friggin'-jersey
    , new-friggin'-mexico
    , newmexi-friggin'-co
    , new-friggin'-york
    , north-friggin'-carolina
    , northcaro-friggin'-lina
    , north-friggin'-dakota
    , o-friggin'-hio
    , okla-friggin'-homa
    , pennsyl-friggin'-vania
    , rhode-friggin'-island
    , south-friggin'-carolina
    , southcaro-friggin'-lina
    , south-friggin'-dakota
    , tenne-friggin'-ssee
    , ver-friggin'-mont
    , vir-friggin'-ginia
    , washing-friggin'-ton
```

```
    , west-friggin'-virginia
    , westvir-friggin'-ginia
    , wis-friggin'-consin
    , wy-friggin'-oming
    ].
```