function [best\_feature\_val] = optimizeMonth(fin\_model\_low, fin\_model\_med, fin\_model\_high, crit\_model, movie, objParams)

%Returns the optimal month that the movie should be released

if movie{1, 'AdjustedBudget'} < 11

internal\_fin\_model = fin\_model\_low;

elseif movie{1, 'AdjustedBudget'} >= 11 && movie{1, 'AdjustedBudget'} <= 75

internal\_fin\_model = fin\_model\_med;

else

internal\_fin\_model = fin\_model\_high;

end

obj\_values\_vec = zeros(1, 12);

month\_set = {'Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct',...

'Nov', 'Dec'};

num = length(month\_set);

for i=1:num

movie(1, month\_set{i}) = {0};

end

%Now, calcualte the objective values

%For the first time (just January)

movie(1, month\_set{1}) = {1};

box\_office = predict(internal\_fin\_model, movie);

critic = predict(crit\_model, movie);

obj\_value = getObjective(box\_office, critic, objParams);

obj\_values\_vec(1) = obj\_value;

for i=2:num

movie(1, month\_set{i-1}) = {0};

movie(1, month\_set{i}) = {1};

box\_office = predict(internal\_fin\_model, movie);

critic = predict(crit\_model, movie);

obj\_value = getObjective(box\_office, critic, objParams);

obj\_values\_vec(i) = obj\_value;

end

highest\_index = find(obj\_values\_vec==max(obj\_values\_vec));

best\_feature\_val = month\_set{highest\_index};

end