Intelligent Systems Assignment 1

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1 MatLab code

1.1 Changes to tsp.m

The decrease T by 0.1% was removed.

```
    for jstep=1:ceil(maxsteps);
        for ins = 1:100
            j = ceil(rand*n); len = ceil(rand*(n/2));
```

1.2 plotmean.m

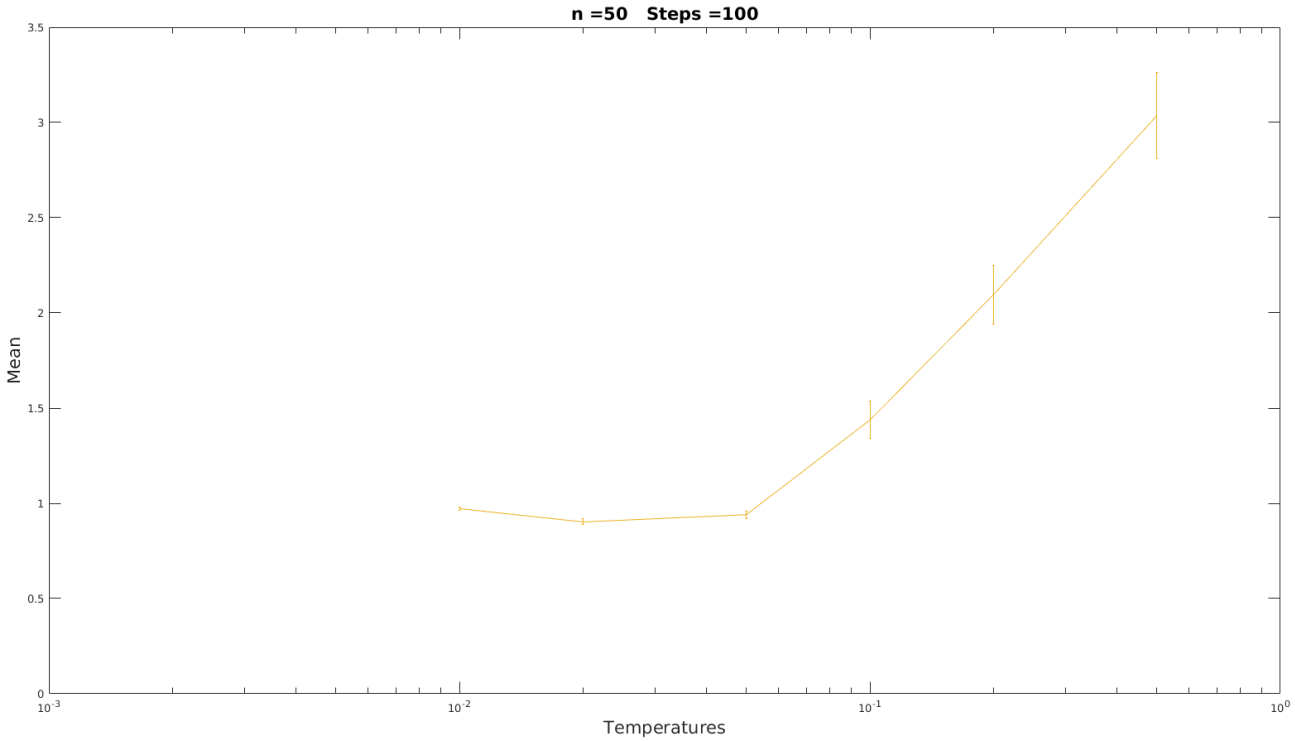
```
n = 100;
maxsteps = 200;
temp = [0.5, 0.2 ,0.1 ,0.05 ,0.02 ,0.01];
method = 1;

meanresults = zeros(size(temp));
standarddeviationresults = zeros(size(temp));

% Try the different temperatures
for index = 1:length(temp)
    results = tsp(n, maxsteps, temp(index), method);
    lastFifty = results(length(results) - 49:length(results));
    meanresults(index) = mean(lastFifty);
    standarddeviationresults(index) = sqrt(var(lastFifty));
    fprintf('mean: %f \n', mean(lastFifty));
    fprintf('varience: %f \n', var(lastFifty));
end


% Plot the results in a graph
figure(3); semilogx(0,0); hold on;
semilogx(temp, meanresults);
errorbar(temp, meanresults, standarddeviationresults)
title(['n =',num2str(n,'%d'),          ...
               '    Steps =',num2str(maxsteps,'%d')],    ...
               'fontsize',16);
```

```
xlabel(['Temperatures'],'fontsize',16);
ylabel(['Mean'],'fontsize',16);
```

2 Plots

To show the impact of T, several T values have been used to run the tsp function. The tsp function returns the generated distance values. The last fifty of these values are used to plot the mean against the used T value.

These plots show the value of T on the x-axis against the mean on the y-axis. The standard deviation is displayed around the data points.



3 T-Dependance

4 Work done

The MatLab code was written by Sander and refactored by Wessel.