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Data Basics

BY pavana Mysore Ganesh Note: I was not able to add the path of bmes.downloadurl and bmes.publish

```
t = readtable('Immunotherapy.xlsx');  
% Changing the name of attributes  
attributes =  
    {'sex','age','time','warts','type','area','diameter','result'};  
t.Properties.VariableNames=attributes;
```

For each attribute, find its correlation with result of treatment

```
for i = 1:numel(attributes)-1  
    correlation(i) = corr(t{:,attributes{i}},t{:,attributes{end}});  
end  
m = table(attributes(1:end-1)',correlation');  
name = {'attributes','correlation'};  
m.Properties.VariableNames = name;  
disp(m)
```

<i>attributes</i>	<i>correlation</i>
'sex'	0.018831
'age'	-0.18831
'time'	-0.36117
'warts'	-0.04716
'type'	0.083396
'area'	0.043349
'diameter'	-0.031273

t-test and find statistically significant attribute

```
testpos = t{:, 'result'} == 1;  
testneg = t{:, 'result'} == 0;  
for i = 1:numel(attributes)-1  
    [~,pvalue(i)] =  
        ttest2(t{testpos,attributes{i}},t{testneg,attributes{i}});
```

```

end
name2 = {'attributes', 'pvalue'};
s = table(attributes(1:end-1)', pvalue');
s.Properties.VariableNames = name2;
disp(s)
% Thershold Value is 0.05
sig = attributes(pvalue<0.01);
fprintf('statistically significant attribute is %s\n', char(sig))

```

<i>attributes</i>	<i>pvalue</i>
<i>'sex'</i>	<i>0.86017</i>
<i>'age'</i>	<i>0.07549</i>
<i>'time'</i>	<i>0.00046996</i>
<i>'warts'</i>	<i>0.65893</i>
<i>'type'</i>	<i>0.43453</i>
<i>'area'</i>	<i>0.68497</i>
<i>'diameter'</i>	<i>0.76982</i>

statistically significant attribute is time

Report the correlation coefficients and the pvalues of the attributes in a tabular format.

```

t1 = table(attributes(1:end-1)', 'correlation', 'pvalue');
n3 = {'attributes', 'correlation', 'pvalue'};
t1.Properties.VariableNames = n3;
disp(t1)

```

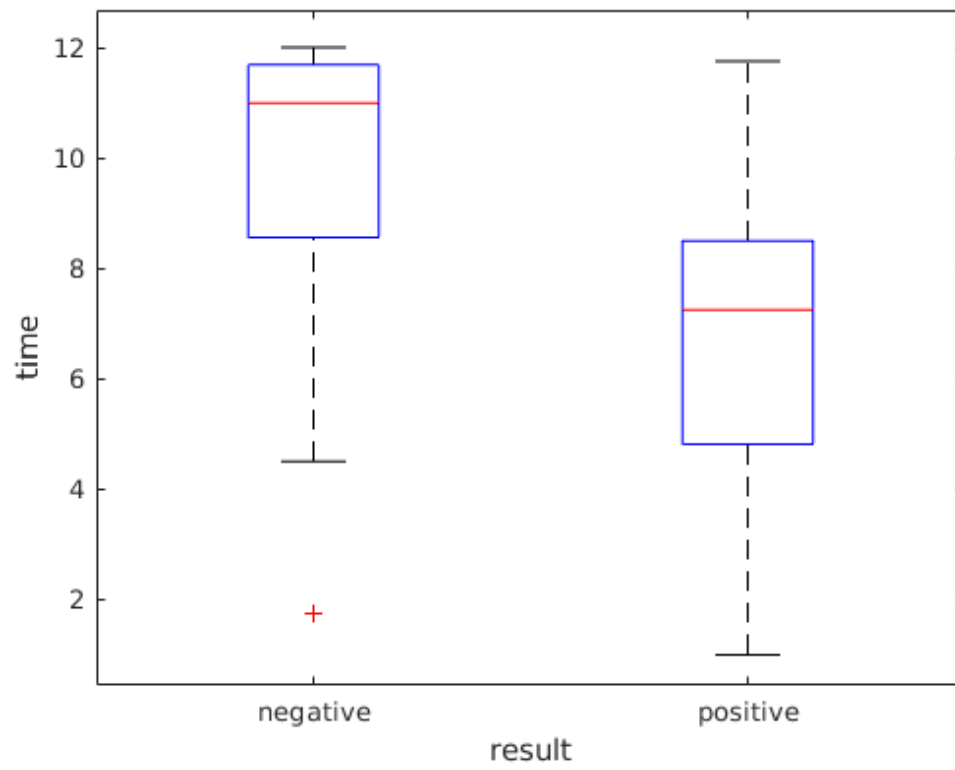
<i>attributes</i>	<i>correlation</i>	<i>pvalue</i>
<i>'sex'</i>	<i>0.018831</i>	<i>0.86017</i>
<i>'age'</i>	<i>-0.18831</i>	<i>0.07549</i>
<i>'time'</i>	<i>-0.36117</i>	<i>0.00046996</i>
<i>'warts'</i>	<i>-0.04716</i>	<i>0.65893</i>
<i>'type'</i>	<i>0.083396</i>	<i>0.43453</i>
<i>'area'</i>	<i>0.043349</i>	<i>0.68497</i>
<i>'diameter'</i>	<i>-0.031273</i>	<i>0.76982</i>

Box plot for significant attribute

```

boxplot(t{:, 'time'}, t{:, 'result'}, 'Labels', {'negative', 'positive'})
xlabel('result');
ylabel('time');

```



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