

% Übung 2

```
clear all  
close all
```

```
% Wetter  
% (a)
```

```
Wetter = readtable('UE01_Daten.xlsx', 'Sheet', 'Wetter');  
D = Wetter.Variables; % alle Spalten
```

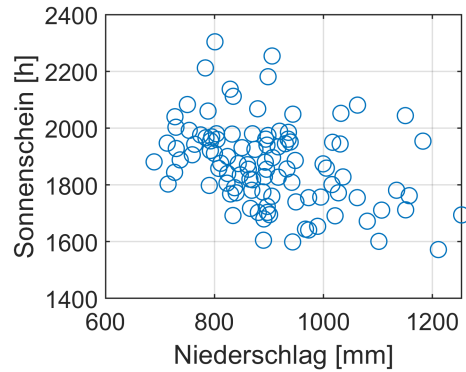
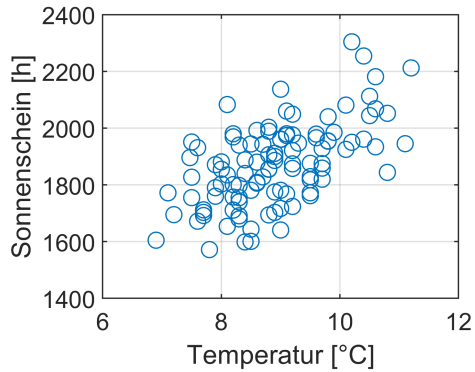
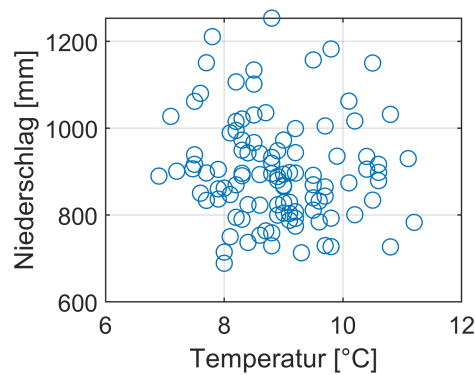
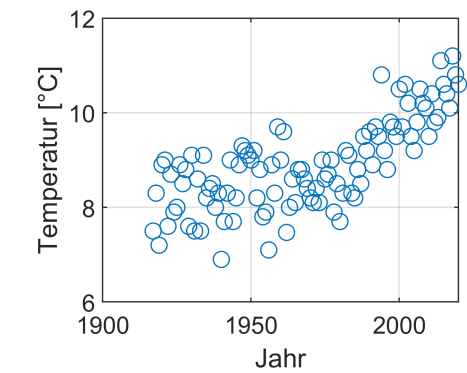
```
J = D(:,1); % Jahr  
T = D(:,2); % Temperatur  
N = D(:,3); % Niederschlag  
S = D(:,4); % Sonnenschein
```

```
nexttile  
plot(J,T,'o')  
xlabel('Jahr')  
ylabel('Temperatur [°C]')  
grid on
```

```
nexttile  
plot(T,N,'o')  
xlabel('Temperatur [°C]')  
ylabel('Niederschlag [mm]')  
grid on
```

```
nexttile  
plot(T,S,'o')  
xlabel('Temperatur [°C]')  
ylabel('Sonnenschein [h]')  
grid on
```

```
nexttile  
plot(N,S,'o')  
xlabel('Niederschlag [mm]')  
ylabel('Sonnenschein [h]')  
grid on
```



% (b)

```
C = corr([J,T,N,S])
```

```
C = 4x4
    1.0000    0.7156   -0.0125    0.3634
    0.7156    1.0000   -0.1014    0.5889
   -0.0125   -0.1014    1.0000   -0.3633
    0.3634    0.5889   -0.3633    1.0000
```

```
fprintf('          Jahr    Temperatur Niederschlag Sonnenschein\n')
```

```
Jahr    Temperatur Niederschlag Sonnenschein
```

```
fprintf('Jahr          %10.6f %10.6f %10.6f  %10.6f\n',C(1,:));
```

```
Jahr          1.000000    0.715578   -0.012535    0.363387
```

```
fprintf('Temperatur      %10.6f %10.6f %10.6f  %10.6f\n',C(2,:));
```

```
Temperatur      0.715578    1.000000   -0.101410    0.588868
```

```
fprintf('Niederschlag     %10.6f %10.6f %10.6f  %10.6f\n',C(3,:));
```

```
Niederschlag    -0.012535   -0.101410    1.000000   -0.363324
```

```
fprintf('Sonnenschein      %10.6f %10.6f %10.6f  %10.6f\n',C(4,:));
```

```
Sonnenschein     0.363387    0.588868   -0.363324    1.000000
```

```

% Studenten
% (a)
figure

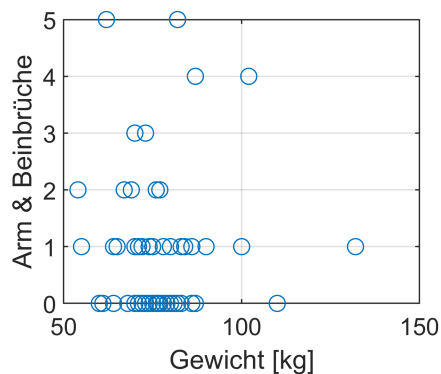
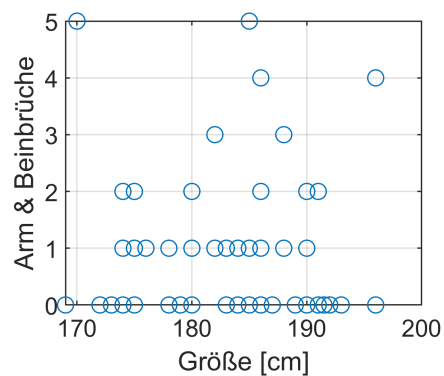
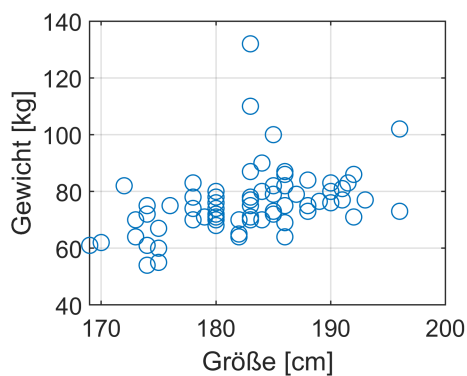
S = readtable('UE01_Daten.xlsx', 'Sheet', 'Studenten');

nexttile
plot(S.Groesse,S.Gewicht,'o')
xlabel('Größe [cm]')
ylabel('Gewicht [kg]')
grid on

nexttile
plot(S.Groesse,S.Arm_Beinbrueche,'o')
xlabel('Größe [cm]')
ylabel('Arm & Beinbrüche')
grid on

nexttile
plot(S.Gewicht,S.Arm_Beinbrueche,'o')
xlabel('Gewicht [kg]')
ylabel('Arm & Beinbrüche')
grid on

```



```
% (b)
```

```
C = corr(S.Variables)
```

```
C = 3x3
    1.0000    0.3943    0.0100
    0.3943    1.0000    0.0482
    0.0100    0.0482    1.0000
```

```
T = array2table(C);
T.Properties.VariableNames = {'Größe', 'Gewicht', 'Arm & Beinbruch'};
T.Properties.RowNames = T.Properties.VariableNames;
T
```

```
T = 3x3 table
```

	Größe	Gewicht	Arm & Beinbruch
1 Größe	1	0.3943	0.0100
2 Gewicht	0.3943	1	0.0482
3 Arm & Beinbruch	0.0100	0.0482	1