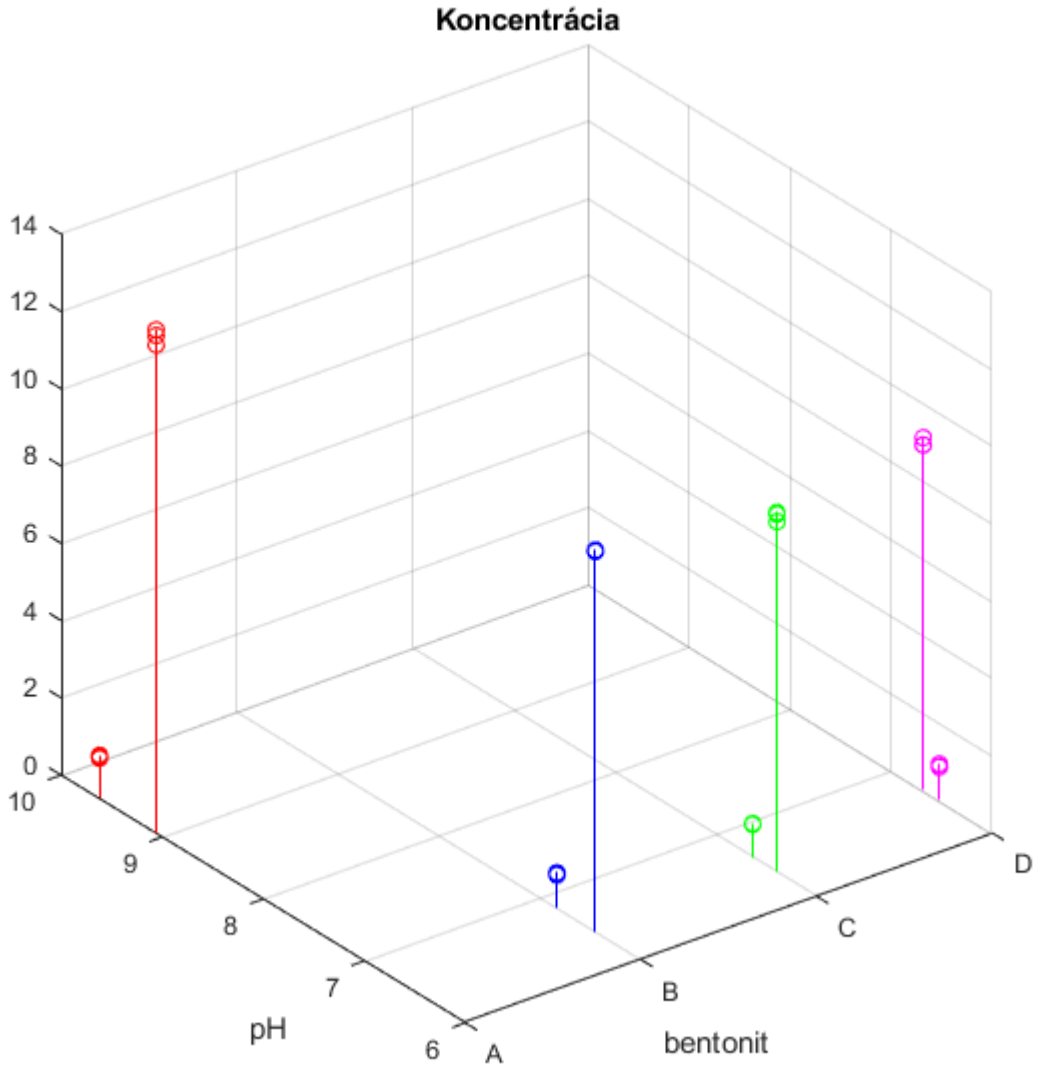
Bentonity

1) Načítanie údajov z Excelu

```
Data=readtable('databaza_bentonity.xlsx');
Data.bentonit=string(Data.bentonit);
Data.pk=string(Data.pk);
set(0, 'DefaultLineLineWidth', 2);
```

Znázornenie koncentrácie vzhľadom na bentonit a pH

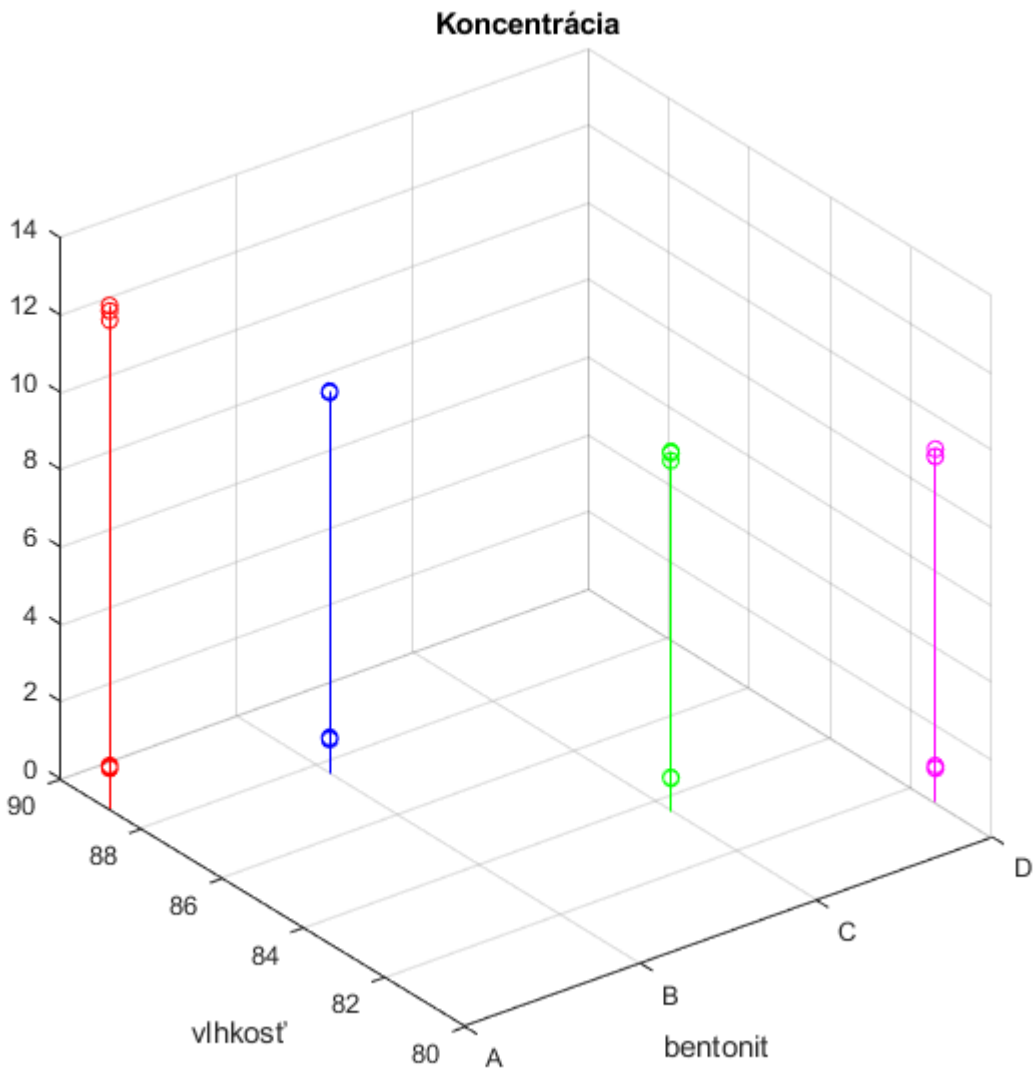
```
set(0, 'DefaultLineLineWidth', 1.5);
figure('position', [0, 0, 600, 600]);
stem3(ones(length(Data.bentonit(Data.bentonit == 'A')),1),Data.konecne_pH(Data.bentonit == 'A'
hold on
stem3(2*ones(length(Data.bentonit(Data.bentonit == 'B')),1),Data.konecne_pH(Data.bentonit == 'B
stem3(3*ones(length(Data.bentonit(Data.bentonit == 'C')),1),Data.konecne_pH(Data.bentonit == 'C
stem3(4*ones(length(Data.bentonit(Data.bentonit == 'D')),1),Data.konecne_pH(Data.bentonit == 'D
 xticks([1 2 3 4])
xticklabels({'A','B','C','D'})
grid on
title('Koncentrácia')
xlabel('bentonit')
ylabel('pH')
hold off
```



Znázornenie koncentrácie vzhľadom na bentonit a vlhkosť

```
figure('position', [0, 0, 600, 600]);
stem3(ones(length(Data.bentonit(Data.bentonit == 'A')),1),Data.vlhkost(Data.bentonit == 'A'),Da
hold on
stem3(2*ones(length(Data.bentonit(Data.bentonit == 'B')),1),Data.vlhkost(Data.bentonit == 'B')
stem3(3*ones(length(Data.bentonit(Data.bentonit == 'C')),1),Data.vlhkost(Data.bentonit == 'C')
stem3(4*ones(length(Data.bentonit(Data.bentonit == 'D')),1),Data.vlhkost(Data.bentonit == 'D')
xticks([1 2 3 4])
xticklabels({'A','B','C','D'})
grid on
title('Koncentrácia')
```

```
xlabel('bentonit')
ylabel('vlhkosť')
```




```
D.poradie=1:4
```

```
D = struct with fields:
    poradie: [1 2 3 4]
```

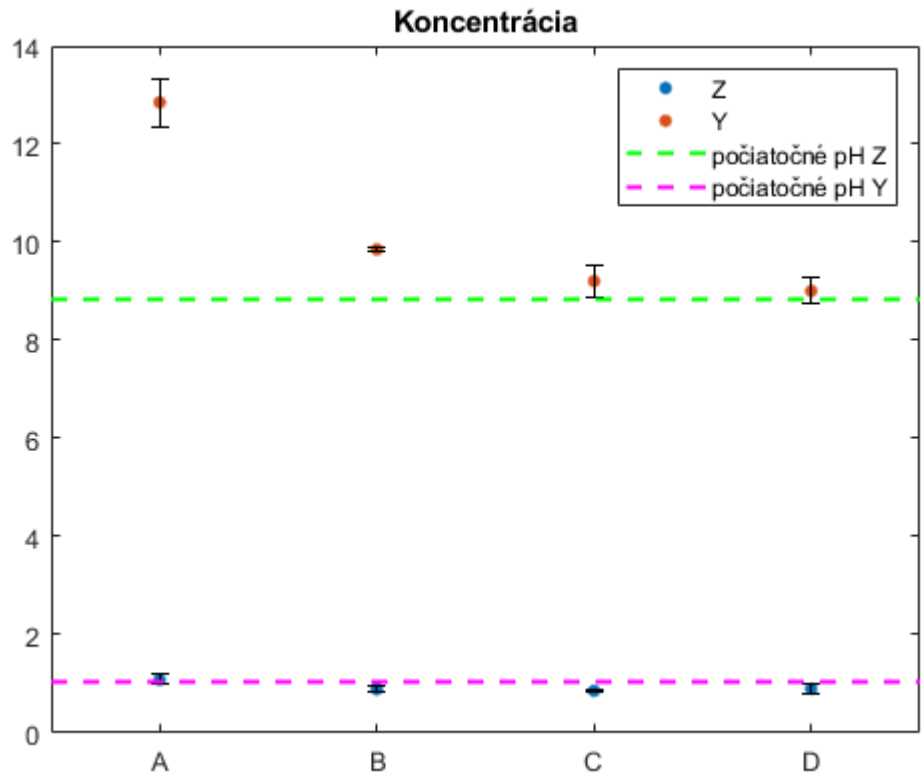
```
D.pismena=char(D.poradie+'A'-1)
```

```
D = struct with fields:
    poradie: [1 2 3 4]
    pismena: 'ABCD'
```

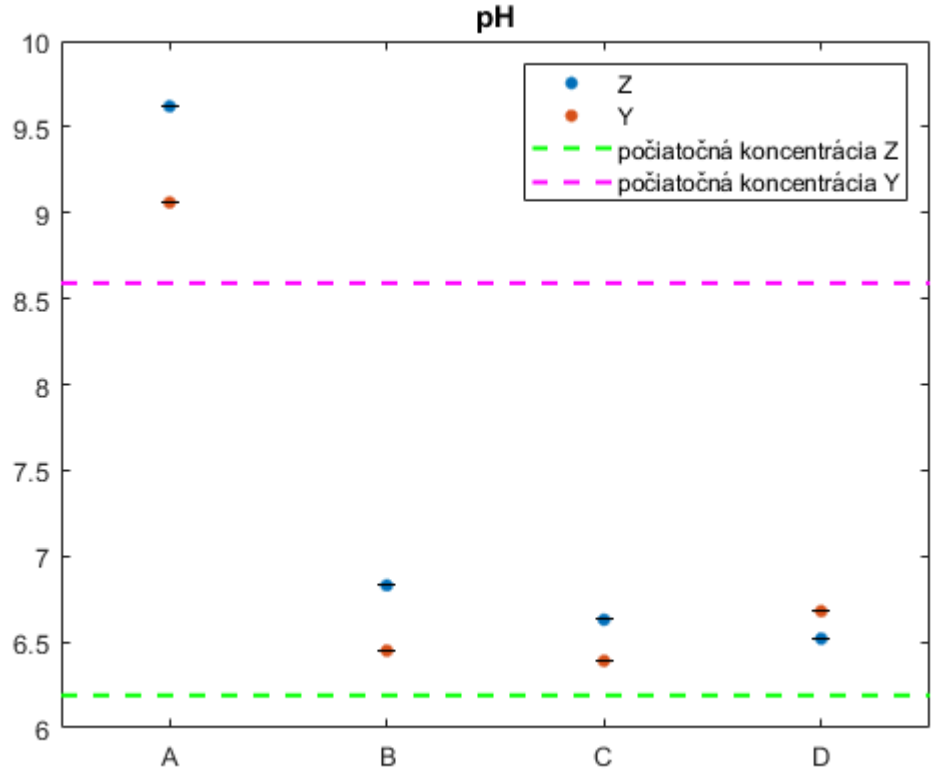
```
for k=1:4
```

```
    D.priemerna_koncentracia_Y(k)=mean(Data.Hg2((Data.bentonit)==D.pismena(k) & Data.pk=='Y'))
    pd = fitdist(Data.Hg2((Data.bentonit)==D.pismena(k) & Data.pk=='Y'),'Normal');
    ci = paramci(pd);
    D.koncentracia_is_Y(k)=D.priemerna_koncentracia_Y(k)-ci(1);

    D.priemerna_koncentracia_Z(k)=mean(Data.Hg2((Data.bentonit)==D.pismena(k) & Data.pk=='Z'))
    pd = fitdist(Data.Hg2((Data.bentonit)==D.pismena(k) & Data.pk=='Z'),'Normal');
    ci = paramci(pd);
    D.koncentracia_is_Z(k)=D.priemerna_koncentracia_Z(k)-ci(1);

    D.priemer_konecne_pH_Y(k)=mean(Data.konecne_pH((Data.bentonit)==D.pismena(k) & Data.pk=='Y
    pd = fitdist(Data.konecne_pH((Data.bentonit)==D.pismena(k) & Data.pk=='Y'),'Normal');
    ci = paramci(pd);
    D.konecne_pH_is_Y(k)=D.priemer_konecne_pH_Y(k)-ci(1);

    D.priemer_konecne_pH_Z(k)=mean(Data.konecne_pH((Data.bentonit)==D.pismena(k) & Data.pk=='Z
    pd = fitdist(Data.konecne_pH((Data.bentonit)==D.pismena(k) & Data.pk=='Z'),'Normal');
    ci = paramci(pd);
    D.konecne_pH_is_Z(k)=D.priemer_konecne_pH_Z(k)-ci(1);
end
```

```
figure
p1=plot(D.poradie,D.priemerna_koncentracia_Y,'.','MarkerSize',15);
hold on
p2=plot(D.poradie,D.priemerna_koncentracia_Z,'.','MarkerSize',15);
er1 = errorbar(D.poradie,D.priemerna_koncentracia_Y,D.koncentracia_is_Y);
er1.Color = [0 0 0];
er1.LineStyle = 'none';
er2 = errorbar(D.poradie,D.priemerna_koncentracia_Z,D.koncentracia_is_Z);
er2.Color = [0 0 0];
er2.LineStyle = 'none';
xlim([0.5 4.5])
xticks(D.poradie)
xticklabels({'A', 'B', 'C', 'D'})
l1=line([0.5 4.5], [Data.pociatocna_koncentracia(1) Data.pociatocna_koncentracia(1)],'Color','g
l2=line([0.5 4.5], [Data.pociatocna_koncentracia(end) Data.pociatocna_koncentracia(end)],'Colo
title('Koncentrácia')
legend([p1,p2,l1,l2],{'Z','Y','počiatočné pH Z','počiatočné pH Y'})
hold off
```




```
figure
p1=plot(D.poradie,D.priemer_konecne_pH_Y,'.','MarkerSize',15);
hold on
p2=plot(D.poradie,D.priemer_konecne_pH_Z,'.','MarkerSize',15);
er1 = errorbar(D.poradie,D.priemer_konecne_pH_Y,D.konecne_pH_is_Y);
er1.Color = [0 0 0];
er1.LineStyle = 'none';
er2 = errorbar(D.poradie,D.priemer_konecne_pH_Z,D.konecne_pH_is_Z);
er2.Color = [0 0 0];
er2.LineStyle = 'none';
xlim([0.5 4.5])
xticks(D.poradie)
xticklabels({'A', 'B', 'C', 'D'})
l1=line([0.5 4.5], [Data.pociatocne_pH(1) Data.pociatocne_pH(1)],'Color','green','LineStyle','
l2=line([0.5 4.5], [Data.pociatocne_pH(end) Data.pociatocne_pH(end)],'Color','magenta','LineSty
title('pH')
legend([p1,p2,l1,l2],{'Z','Y','počiatočná koncentrácia Z','počiatočná koncentrácia Y'})
hold off
```


pH
10
9.5
9
8.5
8
7.5
7
6.5
6
A
B
C
D
Z
Y
počiatočná koncentrácia Z
počiatočná koncentrácia Y