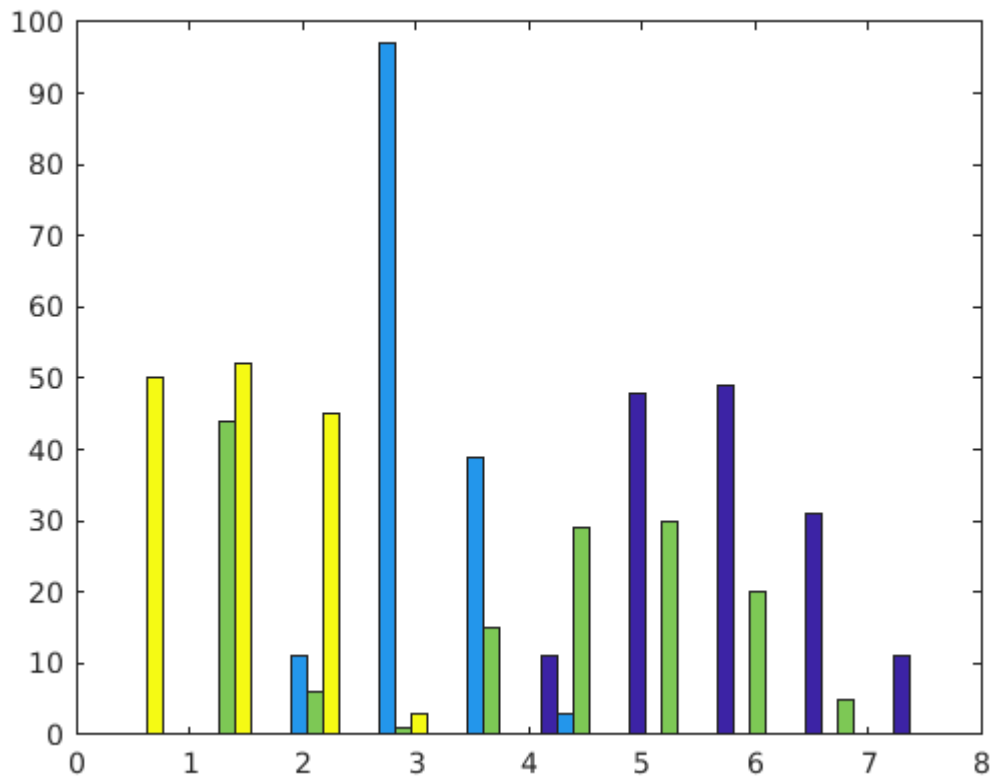


Open File and create table

```
format short
f = fopen("iiris data/iris.data","r");
sdata = fscanf(f,"%c");
final = split(sdata,newline);
final = split(final(1:150),' ');
data = (str2double(final(:,1:4)));
data_set = str2double(final(strcmpi(final(:,5),'Iris-setosa') ~= 0,1:4));
data_ver = str2double(final(strcmpi(final(:,5),'Iris-versicolor') ~= 0,1:4));
data_vir = str2double(final(strcmpi(final(:,5),'Iris-virginica') ~= 0,1:4));
hist(data)
```



preprocessing

```
m = mean(data);
sd = std(data,0);
data = (data - m) ./ sd
```

```
data = 150x4
-0.8977    1.0286   -1.3368   -1.3086
-1.1392   -0.1245   -1.3368   -1.3086
-1.3807    0.3367   -1.3935   -1.3086
-1.5015    0.1061   -1.2801   -1.3086
-1.0184    1.2592   -1.3368   -1.3086
-0.5354    1.9511   -1.1668   -1.0465
-1.5015    0.7980   -1.3368   -1.1776
-1.0184    0.7980   -1.2801   -1.3086
-1.7430   -0.3552   -1.3368   -1.3086
```

```
-1.1392    0.1061   -1.2801   -1.4396
      ⋮
```

co-variance

```
cv = cov(data); %(data' * data) / 149
```

singular value decomposition

```
[u, s, v] = svd(cv);
```

projecting and displaying

```
proj = data * u;
```

```
ans = 150x4
-0.9913    1.0609   -1.3012   -1.2436
-1.3295   -0.0570   -1.2225   -1.2189
-1.3510    0.3277   -1.3785   -1.3556
-1.4131    0.0740   -1.3469   -1.3364
-0.9933    1.2494   -1.3697   -1.3026
-0.5145    1.9443   -1.1676   -1.0682
-1.2456    0.7107   -1.4153   -1.3738
-1.0711    0.8147   -1.2889   -1.2431
-1.6257   -0.3955   -1.3798   -1.3916
-1.3060    0.1606   -1.2774   -1.2631
      ⋮
```

```
scatter(proj(:,1)',proj(:,2)')
```

