Hierarchical Clustering

Import libraries

In [1]:
```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

Import Dataset

In [2]:
```
dataset = pd.read_csv("datasets/Mall_Customers.csv")
X = dataset.iloc[ : , [3, 4]].values

print(X)
```

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Training the model on the dataset

In [3]:
```
from sklearn.cluster import AgglomerativeClustering

agglo_clust = AgglomerativeClustering(n_clusters = 5, affinity = "euclidean",
                                      linkage = "ward")
y = agglo_clust.fit_predict(X)

print(y)
```

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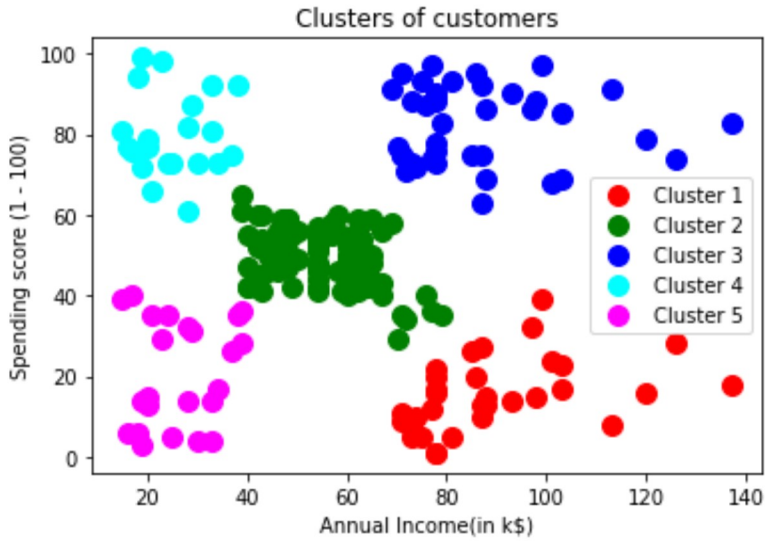
Visualise results

In [4]:
```
color = ("red", "green", "blue", "cyan", "magenta")

for i in range(5):
    plt.scatter(X[y == i, 0], X[y == i, 1], s = 100, c = color[i],
                label = "Cluster " + str(i + 1))

plt.title("Clusters of customers")
plt.xlabel("Annual Income(in k$)")
plt.ylabel("Spending score (1 - 100)")
plt.legend()
plt.show()
```


Clusters of customers
Spending score (1 - 100)
Annual Income(in k$)
Cluster 1
Cluster 2
Cluster 3
Cluster 4
Cluster 5
0
20
40
60
80
100
120
140

In [ ]: