

### Exercise 1:

#### Model A Contingency Table

Contingency Table - Model A (size features)

```
> print(table_A)
```

	Actual			
Predicted	young	adult	old	
young	205	70	18	
adult	68	226	98	
old	17	70	64	

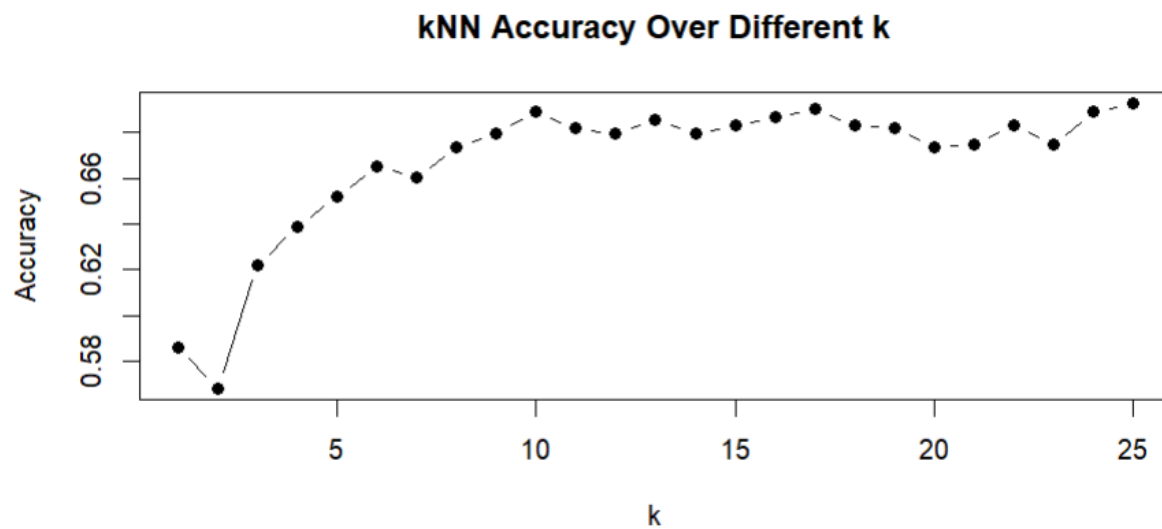
#### Model B Contingency Table

Contingency Table - Model B (weight features)

```
> print(table_B)
```

	Actual			
Predicted	young	adult	old	
young	209	78	9	
adult	74	245	84	
old	7	43	87	

#### Accuracy versus k Plot



```
> cat("\nThe optimal k value is:", best_k, "\n")
```

The optimal k value is: 25

```
> |
```

## Exercise 2:

### K-Means

```
> cat("Optimal K for K-Means:", best_k_kmeans, "\n")  
Optimal K for K-Means: 2
```

#### Silhouette Plot - K-Means (K = 2 )

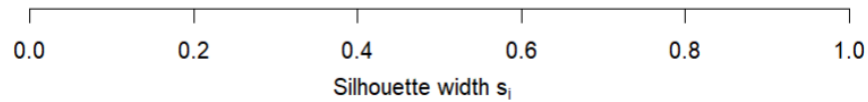
n = 4176

2 clusters  $C_j$

$j: n_j | \text{ave}_{i \in C_j} s_i$

1 : 2319 | 0.60

2 : 1857 | 0.46



Average silhouette width : 0.54

### PAM

```
> cat("Optimal K for PAM:", best_k_pam, "\n")  
Optimal K for PAM: 2
```

#### Silhouette Plot - PAM (K = 2 )

