**R Matrices**

A matrix is a two dimensional data set with columns and rows.

A column is a vertical representation of data, while a row is a horizontal representation of data.

A matrix can be created with the matrix() function. Specify the nrow and ncol parameters to get the amount of rows and columns:

Example

# Create a matrix

thismatrix <- matrix(c(1,2,3,4,5,6), nrow = 3, ncol = 2)

# Print the matrix

thismatrix

Access Matrix Items

**You can access the items by using [ ] brackets. The first number "1" in the bracket specifies the row-position, while the second number "2" specifies the column-position:**

**Example**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**thismatrix[1, 2]**

**Example**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**thismatrix[2,]**

**Access More Than One Row**

**More than one row can be accessed if you use the c() function:**

**Example**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange","grape", "pineapple", "pear", "melon", "fig"), nrow = 3, ncol = 3)**

**thismatrix[c(1,2),]**

**Add Rows and Columns**

**Use the cbind() function to add additional columns in a Matrix:**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange","grape", "pineapple", "pear", "melon", "fig"), nrow = 3, ncol = 3**

**newmatrix <- cbind(thismatrix, c("strawberry", "blueberry", "raspberry"))**

**# Print the new matrix**

**newmatrix**

**Remove Rows and Columns**

Use the c() function to remove rows and columns in a Matrix:

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange", "mango", "pineapple"), nrow = 3, ncol =2)**

**#Remove the first row and the first column**

**thismatrix <- thismatrix[-c(1), -c(1)]**

**thismatrix**

**Check if an Item Exists**

**To find out if a specified item is present in a matrix, use the %in% operator:**

**Example**

**Check if "apple" is present in the matrix:**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**"apple" %in% thismatrix**

**Number of Rows and Columns**

**Use the dim() function to find the number of rows and columns in a Matrix:**

**Example**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**dim(thismatrix)**

**Example**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**dim(thismatrix)**

**Matrix Length**

**Use the length() function to find the dimension of a Matrix:**

**Example**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**length(thismatrix)**

**Loop Through a Matrix**

**You can loop through a Matrix using a for loop. The loop will start at the first row, moving right:**

**Example**

**Loop through the matrix items and print them:**

**thismatrix <- matrix(c("apple", "banana", "cherry", "orange"), nrow = 2, ncol = 2)**

**for (rows in 1:nrow(thismatrix)) {**

**for (columns in 1:ncol(thismatrix)) {**

**print(thismatrix[rows, columns])**

**}**

**}**

**Combine two Matrices**

**Again, you can use the rbind() or cbind() function to combine two or more matrices together:**

**Example**

**# Combine matrices**

**Matrix1 <- matrix(c("apple", "banana", "cherry", "grape"), nrow = 2, ncol = 2)**

**Matrix2 <- matrix(c("orange", "mango", "pineapple", "watermelon"), nrow = 2, ncol = 2)**

**# Adding it as a rows**

**Matrix\_Combined <- rbind(Matrix1, Matrix2)**

**Matrix\_Combined**

**# Adding it as a columns**

**Matrix\_Combined <- cbind(Matrix1, Matrix2)**

**Matrix\_Combined**