**1. Write a Python program to reverse an array (first element becomes last).**

*Original array:*
*[12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37]*
*Reverse array:*
*[37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12]*

**2. Write a Python program to create a 2d array with 1 on the border and 0 inside.**

*Expected Output:*
*Original array:*
*[[ 1. 1. 1. 1. 1.]*
*[ 1. 1. 1. 1. 1.]*
*[ 1. 1. 1. 1. 1.]*
*[ 1. 1. 1. 1. 1.]*
*[ 1. 1. 1. 1. 1.]]*
*1 on the border and 0 inside in the array*
*[[ 1. 1. 1. 1. 1.]*
*[ 1. 0. 0. 0. 1.]*
*[ 1. 0. 0. 0. 1.]*
*[ 1. 0. 0. 0. 1.]*
*[ 1. 1. 1. 1. 1.]]*

**3. Write a Python program to Create a 1-D array of 30 evenly spaced elements between 2.5. and 6.5, inclusive.**

*Expected Output:*
*[ 2.5 2.63793103 2.77586207 2.9137931 3.05172414 3.18965517*
*3.32758621 3.46551724 3.60344828 3.74137931 3.87931034 4.01724138*
*4.15517241 4.29310345 4.43103448 4.56896552 4.70689655 4.84482759*
*4.98275862 5.12068966 5.25862069 5.39655172 5.53448276 5.67241379*
*5.81034483 5.94827586 6.0862069 6.22413793 6.36206897 6.5 ]*

**4. Mini project**

1) Look inside the file BodyTemperature.txt

2) Read the data from the file, and convert it into numeric format. What is a good data type (or data types) for the converted data?

3) Save the converted data into a new file

4) Create a function to extract the number of Males and Female in the dataset

5) The unit for Temperature in the data is Fahrenheit. Write a function to convert it to Celsius.

6) Compute the overall mean for Age, HeartRate and Temperature

7) Compute the mean, max and min of Age, HeartRate and Temperature for Male and Females separately and write the results into a file.

8) Define a function to normalize a 1D array (mean=0, variance=1). Apply the function to Temperature and check if it works.

9) Plot the histogram of the HeartRate and Temperature for Male, Female separately and together. Make sure to put proper axis labels and titles to the plot.

10) Plot the HeartRate and Temperature as a function of Age for Male and Female in the same figure.