1. *Python basics*: If you are not familiar with python, you can refer to `https://www.pythontutorial.net/python-basics/` or other tutorial links for help. Then you should be able to complete the following questions:

   (a) Write a program to display the current date and time.

   (b) Write a program to print a specified list after removing the 0th, 4th and 5th elements. The given list is ['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow'].

   (c) Define a class called *Student* that includes the student's name and age information. In addition, you should provide a method to display these information. Create an object for this class and call the display method.

2. *Array Manipulation and Basic Numpy Operations*: Perform a series of operations using NumPy to demonstrate understanding of array manipulation techniques including reshaping, sorting, slicing, and so on. You can refer to `https://numpy.org/doc/stable/user/absolute_beginners.html` for help.

   (a) **Reshape**: Create a 1D array with elements from 1 to 10, and then reshape it into a 2x5 matrix. Print the result.

   (b) **Slice**: Slice the 2x5 matrix from (a), consisting of the last two rows and the last two columns. Print the result.

   (c) **Sort**: Sort the given array in descending order. The given array is [2, 1, 5, 3, 7, 4, 6, 8]. Print the result.

   (d) **Insert**: Given an array [1, 2, 4, 5], insert integer 3 between 2 and 4, and append 6 at the end of the array. Print the result.

3. *Linear Algebra*: In this class, it is important to use Python to complete the linear algebra task. Let's get familiar with it now.

$$A = \begin{bmatrix} 1 & -1 & 0 \\ 1 & 2 & 2 \\ -1 & 0 & -1 \\ 0 & 1 & 0 \end{bmatrix} B = \begin{bmatrix} -2 & -1 & 1 \\ 1 & 5 & 4 \\ 1 & -1 & -2 \\ 1 & 2 & 1 \end{bmatrix}$$

   (a) Print the two matrices A and B.

   (b) Print the second row of A and the third column of B.

   (c) Print the results of A + B and A - B.

   (d) Construct a new 4×6 matrix [A, B] by appending B to the right of matrix A.

   (e) Compute $A^T B$

4. *Matplotlib*: Plot a unit circle, and then plot 10 plus signs "+" uniformly distributed on the unit circle. Show the result.