C/C++ Programming in UNIX

Lab 06

Create one single .c file and use functions for the questions (e.g. ex01, ex02, … for the function names)

1. Declare int variables x and y and int* pointer variables p and q. Set x to 2, y to 8, p to the address of x, and q to the address of y. Then print the following information:
   (1) The address of x and the value of x.
   (2) The value of p and the value of *p.
   (3) The address of y and the value of y.
   (4) The value of q and the value of *q.
   (5) The address of p (not its contents!).
   (6) The address of q (not its contents!).

2. Declare int variables x, y, z and int* pointer variables p, q, r. Set x, y, z to three distinct values. Set p, q, r to the addresses of x, y, z respectively.
   (1) Print with labels the values of x, y, z, p, q, r, *p, *q, *r.
   (2) Write the swapValue function to swap: z = x; x = y; y = z;
   (3) Print with labels the values of x, y, z, p, q, r, *p, *q, *r.

3. Declare int variables x, y, z and int* pointer variables p, q, r. Set x, y, z to three distinct values. Set p, q, r to the addresses of x, y, z respectively.
   (1) Print with labels the values of x, y, z, p, q, r, *p, *q, *r.
   (2) Write the swapPointer function to swap: r = p; p = q; q = r;
   (3) Print with labels the values of x, y, z, p, q, r, *p, *q, *r.

4. Define a dynamic array a with n integers with n input from keyboard.
   (1) Write a function to fill array a with random values between 1 and 99
   (2) Write a function to sort array a in increasing order
   (3) Now double the size of array a (i.e. a now contains 2*n elements), also fill the new elements with random value between 1 and 99 then sort the array again use the function sort above