1. Environment variables affect the behavior of the running process on a computer. As a dynamic-named value, they are collected when a shell session starts. And these value determines the path we access the files and settings on the system.

Therefore, to achieve the goal that the program works on all the existing legacy system, we can adjust the environment variables to make sure any IO operations are available. To do that, we can simply find the files contain environment variables then use an editor to adjust them.

1. To use POSIX primitives to replace System-V primitives, I would do following steps:
2. Obtain the file descriptor of shared memory through shm\_open().
3. Associate the shared memory with the address space through mmap().
4. Adjust the size of the shared memory in the parent process with ftruncate() before we write to the shared memory.
5. Move on to the child process, through the same steps, use shm\_open() and mmap() to obtain the file descriptor then associate it with the address space.
6. After the child process read from the shared memory, we can remove the shared memory with shm\_unlink().

Reference:

1. <https://man7.org/linux/man-pages/man3/shm_open.3.html>
2. <https://man7.org/linux/man-pages/man2/mmap.2.html>
3. https://linux.die.net/man/2/ftruncate