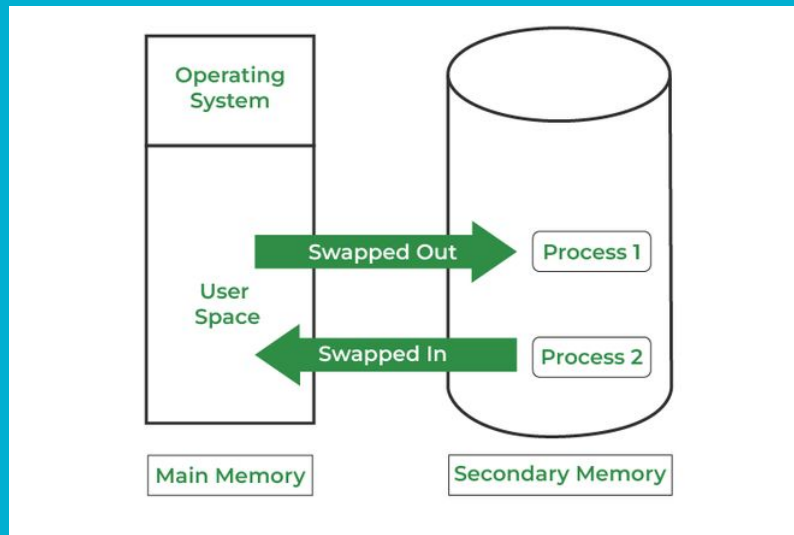


OSLab5

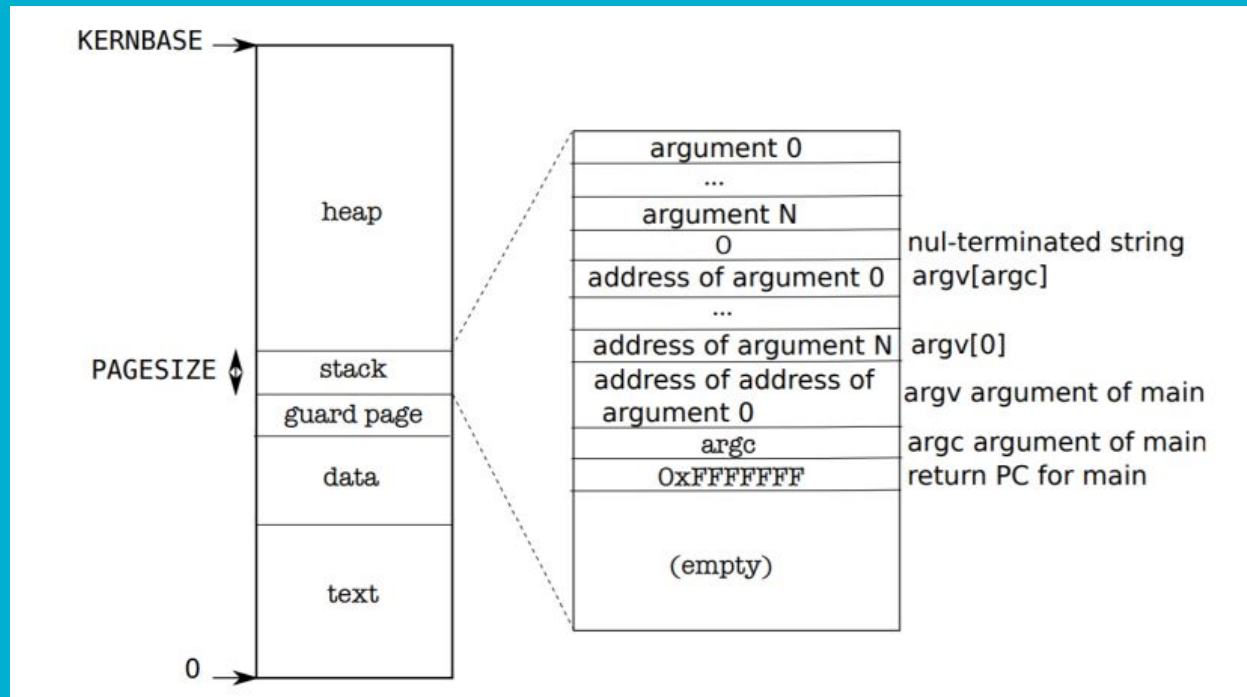
Memory Management

Mohammad Taha Fakharian, Soroosh Sadeghian



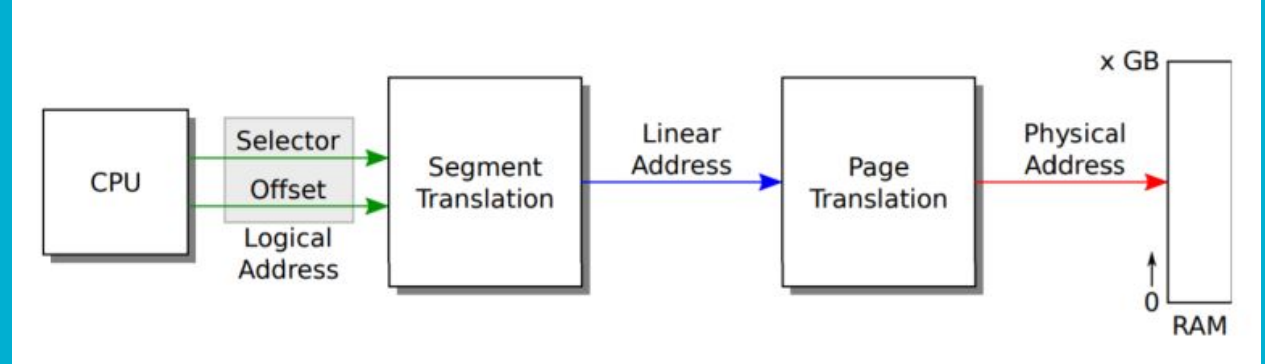
Memory Structure in XV6

- Code
- Heap
- Stack



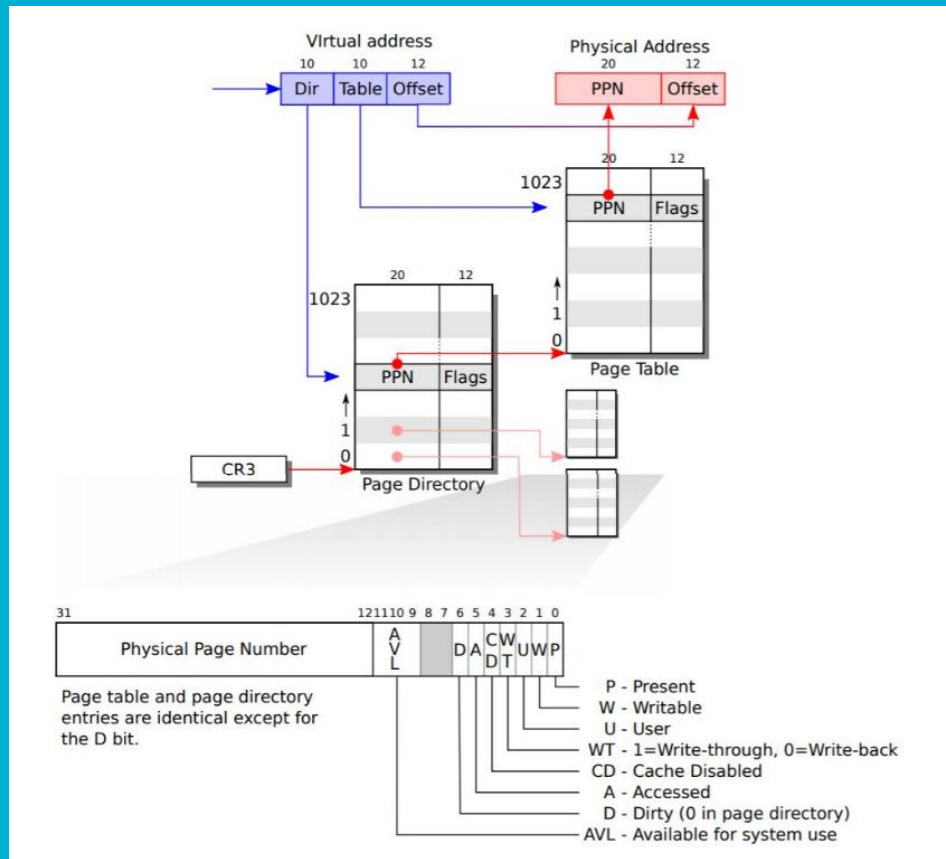
Memory Mapping

- Linear to virtual
- Virtual to physical
- No direct access



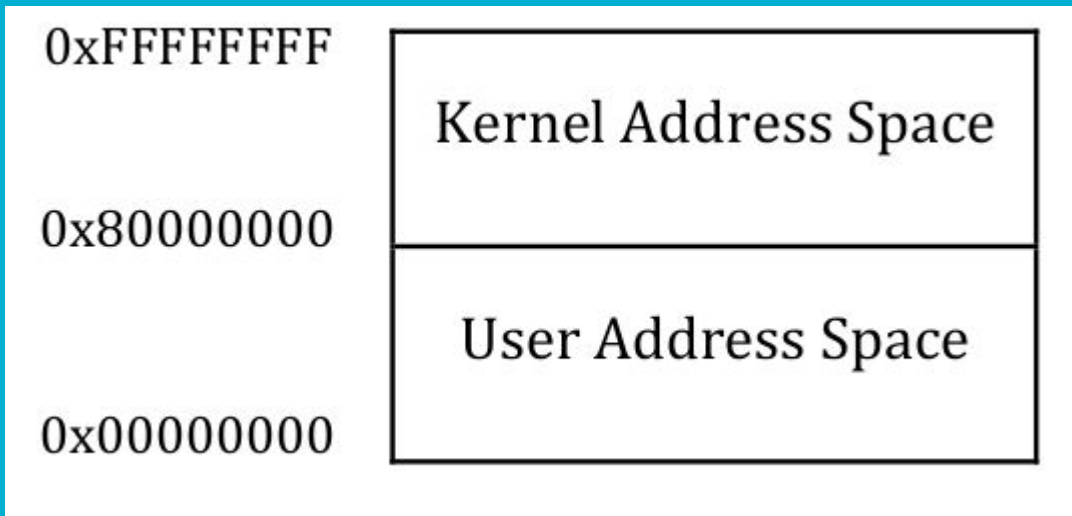
Paging

- Why?
 - Isolation
 - ABI simplicity
 - Memory swapping
- Page structure

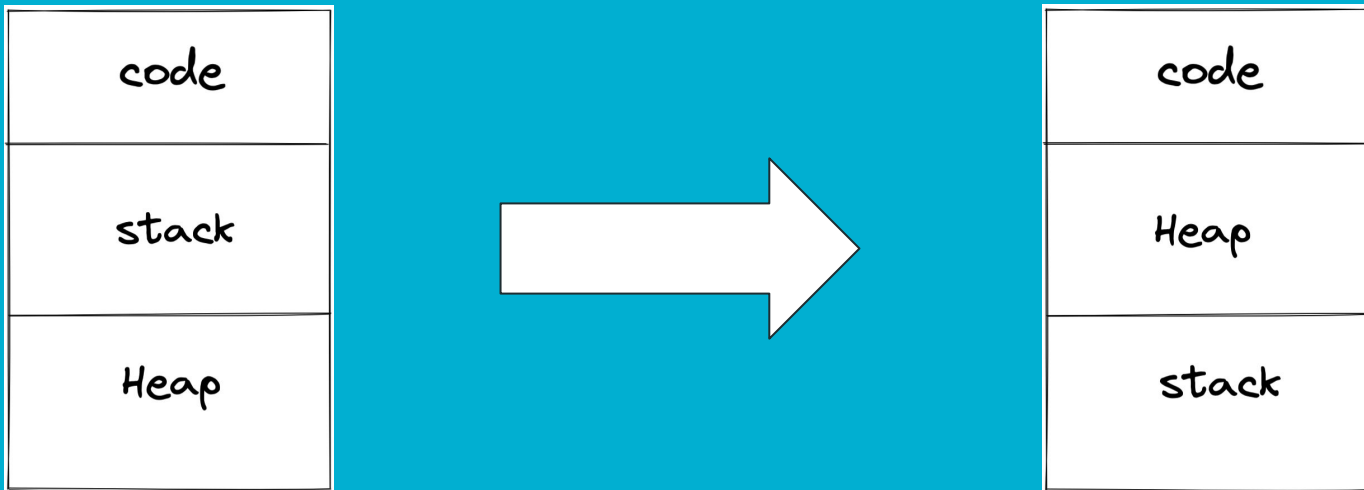


Memory Layout in XV6

- Overall structure
- Useful functions to check
 - Kvmalloc
 - Setupkvm
 - Mappages
 - exec

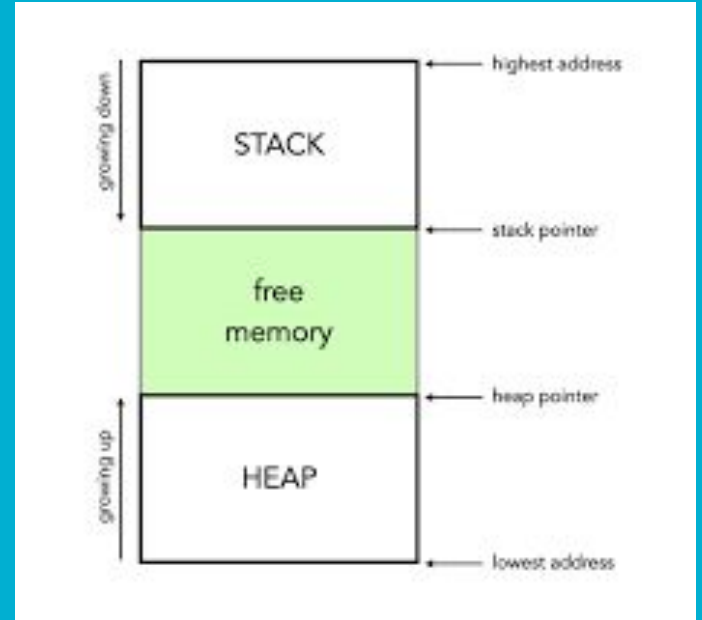


New Features We Want to Add



Stack Growing

- Probably need to add new pointers
- Change the place of stack
- Page fault handling



Notes

- Check exec.c for memory allocation
- New pointers!
- Change the implementation of syscalls
 - They don't work with the new layout
- Change copyvm for memory copying
- Use rcr2 for page fault handling

Good Luck!

Feel free to contact us for any question:

taha.fakharian@gmail.com

sadeqiansoroosh@gmail.com