

GROUP MEMBERS

GitHub - <https://github.com/Akshat22052/OS-ASS4>

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IMPLEMENTATION OF THE CODE

LOAD_AND_RUN_ELF FUNCTION and SEG_FAULT HANDLER

1. Open the file and store in in file descriptor.
2. Allocate memory to ehdr and phdr pointers using malloc function.
3. Read the elf file using the read function
4. we typecast the the function pointer and call the _start.
5. Now as we have not done mmap then see fault will come , I have defined the set fault handler function which is handling the set fault .
6. In the seg fault function, we are seeing in which segment the set fault occur by using the sig_info_t structure to find the address at which set fault came.
7. After finding that we doing mmap in the sea fault handler function after finding the segment in which segmentation fault occur.

8. In the seg fault handler we are doing mmap with size of page_size only as we have done the bonus part.

8. In the seg fault handler function we are also doing calculating the page allocations, page faults and the internal fragmentation .

9. At last in the main , we are printing we are printing the values of page faults, page allocations and the internal fragmentation and doing the loader cleanup.

LOADER_CLEANUP FUNCTION IMPLEMENTATION

1. We have used free to free the the memory allocated to ehdr and phdr pointers and closed the file descriptor and the memory given to the mmap by doing munmap, and also freeing the space given to the segments.

CONTRIBUTION

1. Akshat Karnwal handled handled the seg fault by making the signal.
2. Mohd Masood handled the calculation of the page faults, page allocations , and the internal fragmentation.
3. Both of us coded the bonus part and the file handling part collectively.