Memory Management

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File List

Here is a list of all files with brief descriptions:

File Documentation

memman.c File Reference

Takes in a 32-bit virtual address and outputs the page number and offset.

```
#include <stdio.h>
#include <stdlib.h>
```

Macros

- #define **MASK** 4095
  Mask to extract lower n bits.
- #define **BIT_SHIFT** 12
  Value to shift by to capture higher-order bits.

Functions

- int **main** (int argc, char *argv[])

Detailed Description

Takes in a 32-bit virtual address and outputs the page number and offset.

This program performs bitwise operations on the virtual address passed in. Based on the information provided regarding the page size, we can build a mask to extract the bits we need, in order to calculate the page number and offset, as required.

Compilation Instructions: make

Run: ./memman virtual-address

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Macro Definition Documentation

#define BIT_SHIFT 12

Value to shift by to capture higher-order bits.

#define MASK 4095

Mask to extract lower n bits.

Function Documentation

int main (int *argc*, char * *argv*[])

Function takes in a single decimal value from the command line. It performs bitwise operations to extract the lower 12 bits for the offset and the higher-order bits for the page number. It then prints this information to the console.

Parameters:

in	*argc*	Integer count of the command-line arguments
in	*argv*	Vector of the command-line arguments

Returns:

0 indicates normal termination of main.

Declare variables to store address, page number and offset

Check for correct number of command-line arguments

Convert command line argument to long long

Make sure address is within range

Perform bitwise operations to calculate offset and page number

Output page number and offset to console