

Search,fill bit patterns

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Chapter 1

File Index

1.1 File List

Here is a list of all documented files with brief descriptions:

bits.c	Function definitions for bit pattern check and fill	3
bits.h	Function prototypes for bit pattern check and fill	5
main.c	Driver program for bit pattern search and fill functionalities An char array of size 20 is used and a mixture of calls to function are made and output is printed in the format address v/s value . .	7

Chapter 2

File Documentation

2.1 bits.c File Reference

Function definitions for bit pattern check and fill.

```
#include "bits.h"
```

Functions

- void [process_pattern](#) (unsigned char pattern, int plength)
Computes and stores the byte sequences that repeat using the given pattern.
- unsigned char * [check_bit_pattern](#) (unsigned char *start_addr)
Checks whether the memory contains continuous repetition of the bit pattern from the given start address.
- void [fill_pattern](#) (unsigned char *start_addr, unsigned char *end_addr)
Fills the memory with continuous repetition of the bit pattern from start address to end address.
- void [init_zero](#) (unsigned char *start_addr, unsigned char *end_addr)
Initializes the memory with 0 from start address to end address.

Variables

- static unsigned char * [shifted_patterns](#)
An array to store all possible byte sequences which repeats. eg: 5 bit-pattern has 5 repeating byte sequences.
- static int [length](#)
Stores the length of the pattern (in bits)

2.1.1 Detailed Description

Function definitions for bit pattern check and fill.

This contains the function definitions for checking whether the memory is continuous repetition of given bit pattern and also to fill memory with the bit pattern.

Author

Freeze Francis

2.1.2 Function Documentation

2.1.2.1 unsigned char* check_bit_pattern (unsigned char * start_addr)

Checks whether the memory contains continuous repetition of the bit pattern from the given start address.

Parameters

<i>start_addr</i>	pointer to the starting address
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Returns

pointer to the point where the bit pattern repetition fails

2.1.2.2 void fill_pattern (unsigned char * *start_addr*, unsigned char * *end_addr*)

Fills the memory with continuous repetition of the bit pattern from start address to end address.

Parameters

<i>start_addr</i>	pointer to the starting address
<i>end_addr</i>	pointer to the end address

Returns

void

2.1.2.3 void init_zero (unsigned char * *start_addr*, unsigned char * *end_addr*)

Initializes the memory with 0 from start address to end address.

Parameters

<i>start_addr</i>	pointer to the starting address
<i>end_addr</i>	pointer to the end address

Returns

void

2.1.2.4 void process_pattern (unsigned char *pattern*, int *plength*)

Computes and stores the byte sequences that repeat using the given pattern.

Parameters

<i>pattern</i>	the bit pattern to be processed
<i>plength</i>	length of the pattern in bits

Returns

void

2.2 bits.h File Reference

Function prototypes for bit pattern check and fill.

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

Macros

- `#define BYTE_SIZE 8`

Functions

- unsigned char * [check_bit_pattern](#) (unsigned char *start_addr)
Checks whether the memory contains continuous repetition of the bit pattern from the given start address.
- void [fill_pattern](#) (unsigned char *start_addr, unsigned char *end_addr)
Fills the memory with continuous repetition of the bit pattern from start address to end address.
- void [init_zero](#) (unsigned char *start_addr, unsigned char *end_addr)
Initializes the memory with 0 from start address to end address.
- void [process_pattern](#) (unsigned char pattern, int plength)
Computes and stores the byte sequences that repeat using the given pattern.

2.2.1 Detailed Description

Function prototypes for bit pattern check and fill.

This contains the prototypes for checking whether the memory is continuous repetition of given bitpattern and also to fill memory with the bitpattern.

Author

Freeze Francis

2.2.2 Function Documentation

2.2.2.1 unsigned char* check_bit_pattern (unsigned char * start_addr)

Checks whether the memory contains continuous repetition of the bit pattern from the given start address.

Parameters

<i>start_addr</i>	pointer to the starting address
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Returns

pointer to the point where the bit pattern repetition fails

2.2.2.2 void fill_pattern (unsigned char * *start_addr*, unsigned char * *end_addr*)

Fills the memory with continuos repetition of the bit pattern from start address to end address.

Parameters

<i>start_addr</i>	pointer to the starting address
<i>end_addr</i>	pointer to the end address

Returns

void

2.2.2.3 void init_zero (unsigned char * *start_addr*, unsigned char * *end_addr*)

Initializes the memory with 0 from start address to end address.

Parameters

<i>start_addr</i>	pointer to the starting address
<i>end_addr</i>	pointer to the end address

Returns

void

2.2.2.4 void process_pattern (unsigned char *pattern*, int *plength*)

Computes and stores the byte sequences that repeat using the given pattern.

Parameters

<i>pattern</i>	the bit pattern to be processed
<i>plength</i>	length of the pattern in bits

Returns

void

2.3 main.c File Reference

Driver program for bit pattern search and fill functionalities An char array of size 20 is used and a mixture of calls to function are made and output is printed in the format address v/s value.

```
#include "bits.h"
```

Functions

- void **print_array_contents** (unsigned char *, unsigned char *)
- int **main** ()

2.3.1 Detailed Description

Driver program for bit pattern search and fill functionalities An char array of size 20 is used and a mixture of calls to function are made and output is printed in the format address v/s value.

Author

Freeze Francis

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