



```
*****  
* convolve.c  
*****/
```

```
/* Standard includes */  
#include <assert.h>  
#include <math.h>  
#include <stdlib.h> /* malloc(), realloc() */
```

```
/* Our includes */  
#include "base.h"  
#include "error.h"  
#include "convolve.h"  
#include "klt_util.h" /* printing */  
  
#define MAX_KERNEL_WIDTH 71
```

```
typedef struct {  
    int width;  
    float data[MAX_KERNEL_WIDTH];  
} ConvolutionKernel;
```

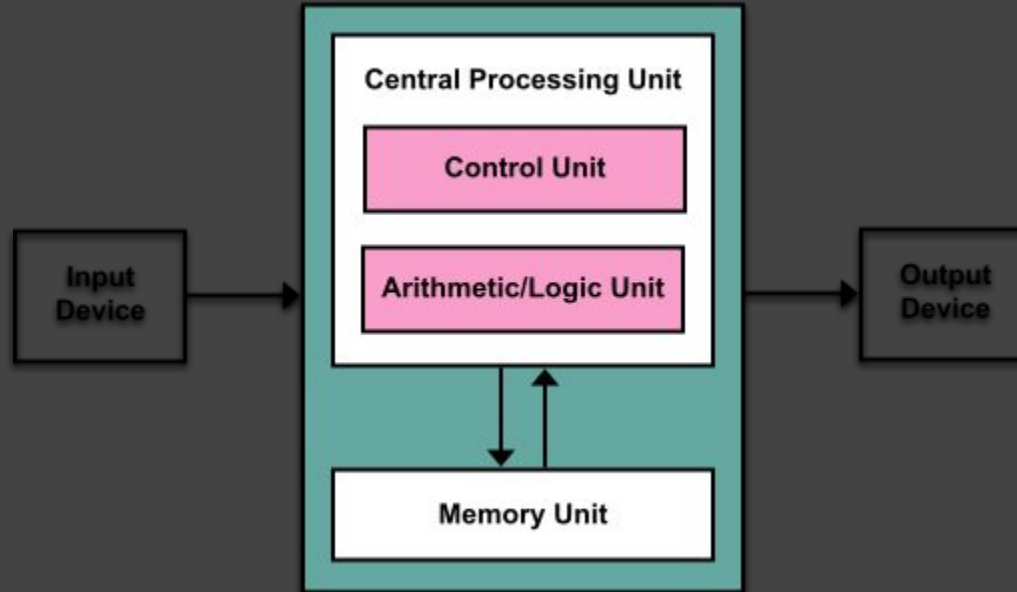
```
/* Kernels */
```

مبانی کامپیوتری و برنامه سازی

Computer Architecture



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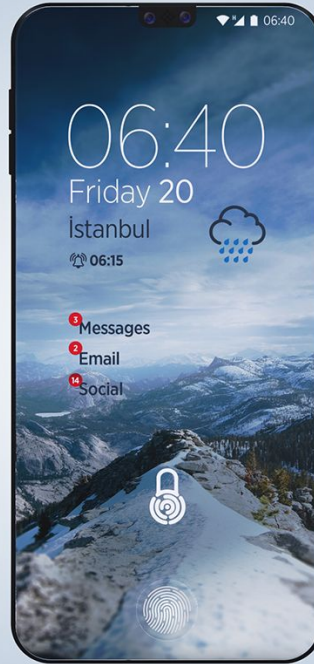


https://en.wikipedia.org/wiki/Von_Neumann_architecture

با هم یک کامپیوتر بسازیم!!



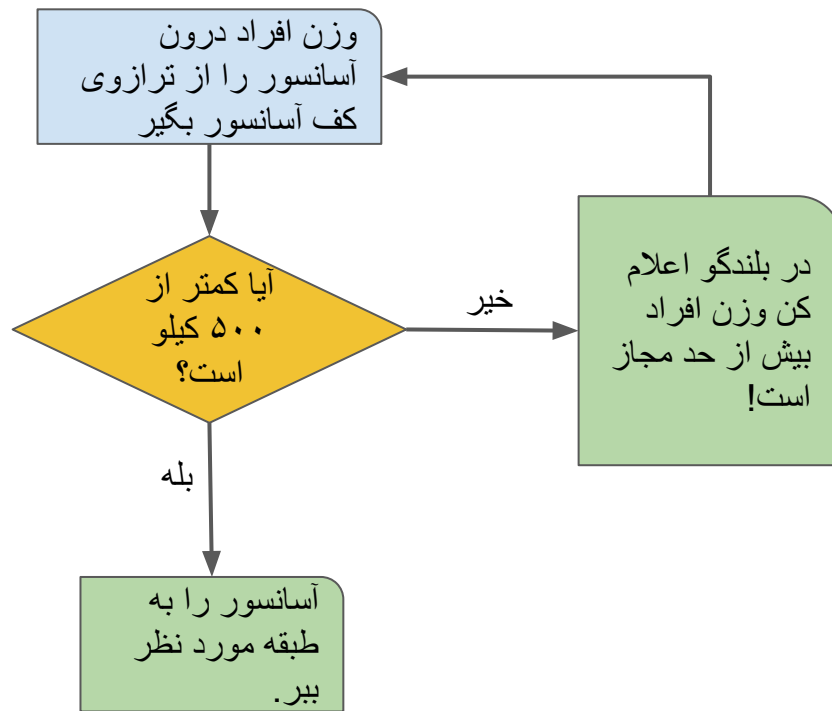
با هم یک کامپیوتر بسازیم!!



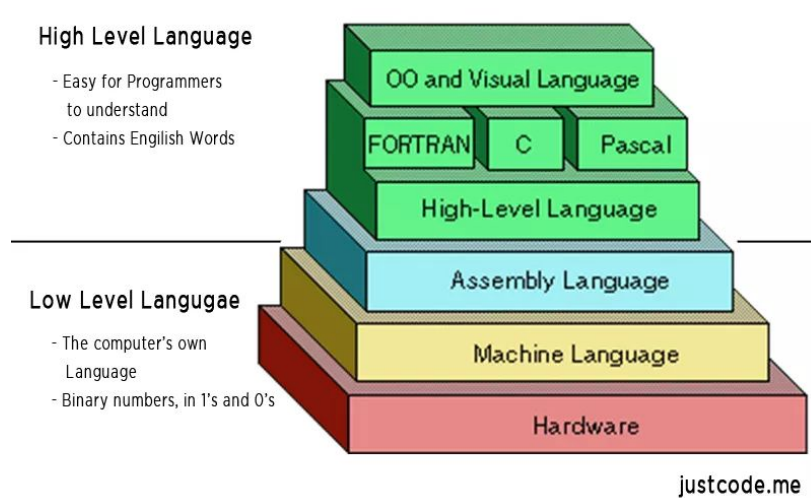
با هم یک کامپیوتر بسازیم!!



الگوریتم ها



زبانهای برنامه سازی



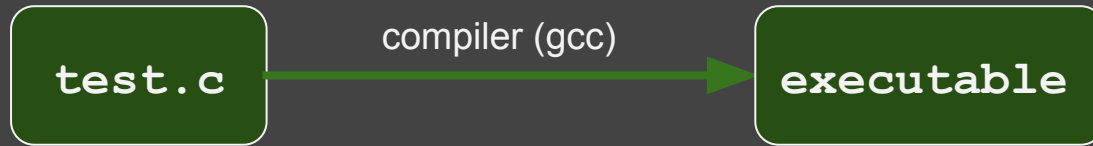
- زبان ماشین
- زبان سطح پایین (اسمبلی)
- زبانهای سطح بالا

<http://justcode.me/assembly/introduction-assembly-language-examples/>

Compiler



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زبانهای سطح بالا

- Compilers
- Interpreters
- Virtual Machines

Processors



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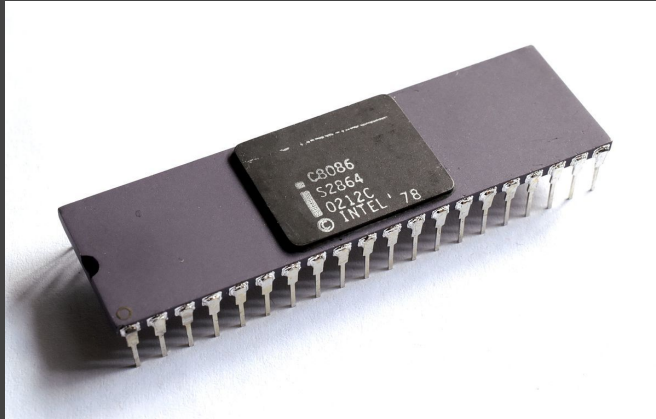


<https://knowyourhandheld.weebly.com/blog/what-are-the-necessary-features-in-latest-smartphones>

x86 Family



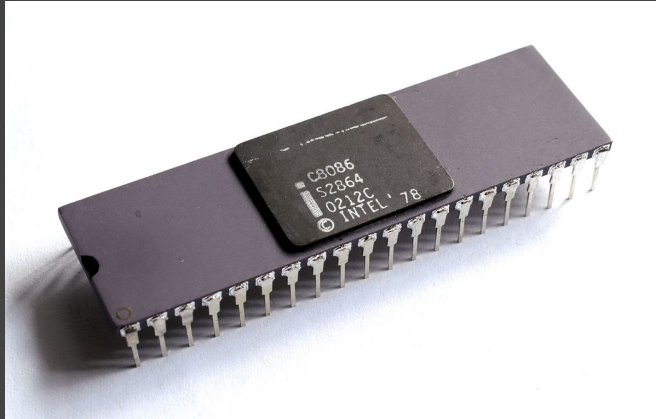
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x86 Family



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Storage



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1

bit

Storage



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0

bit

Storage

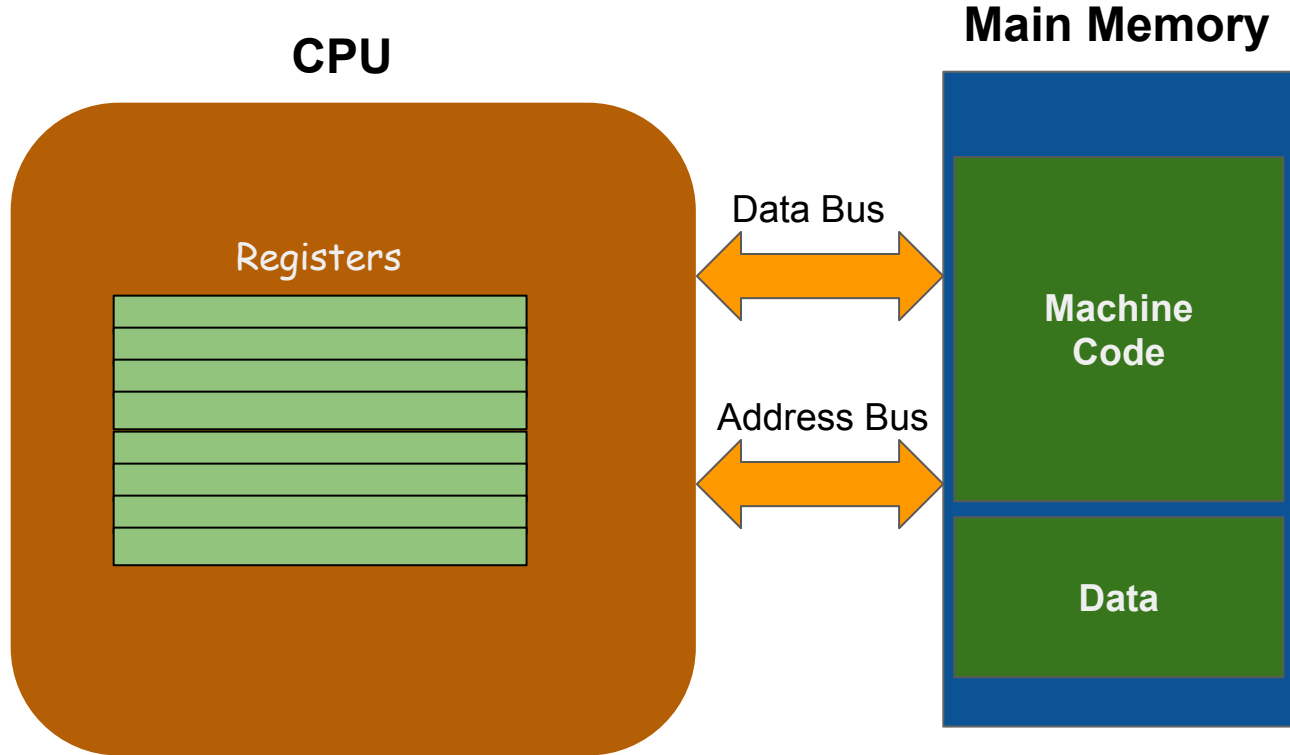


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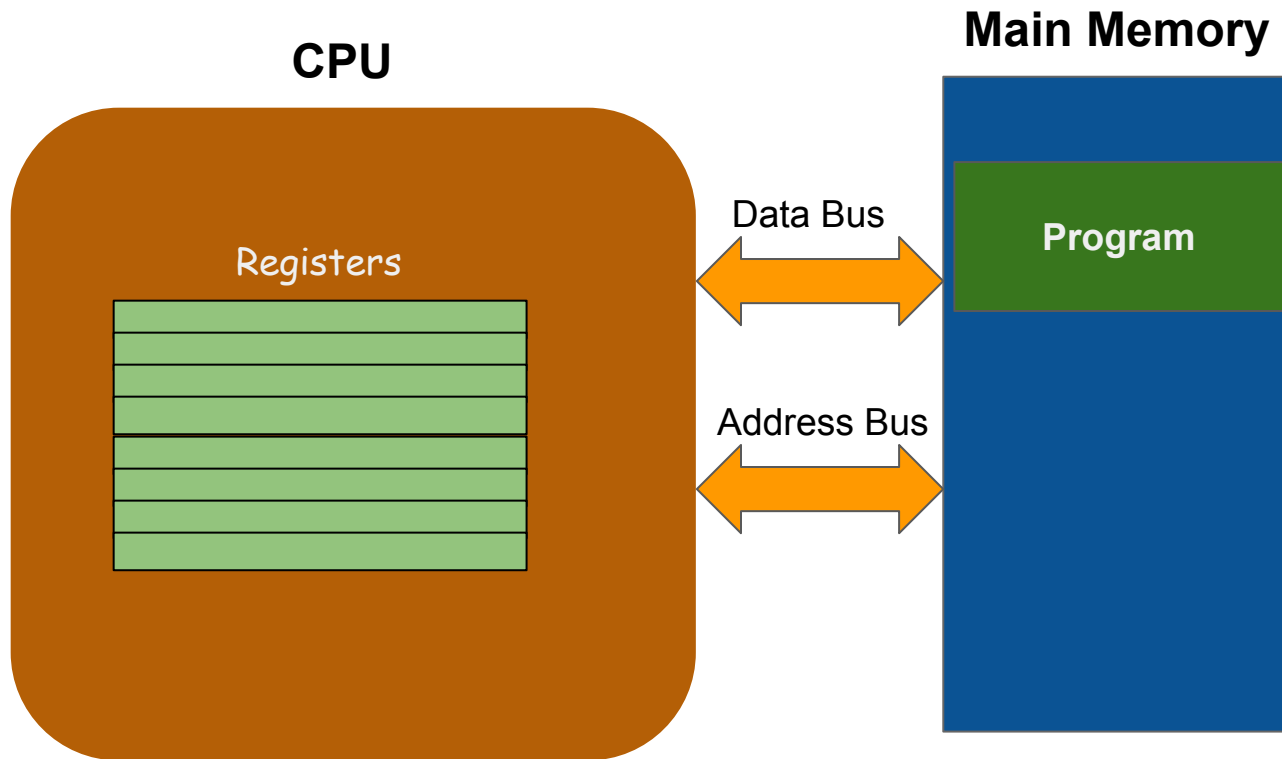


byte

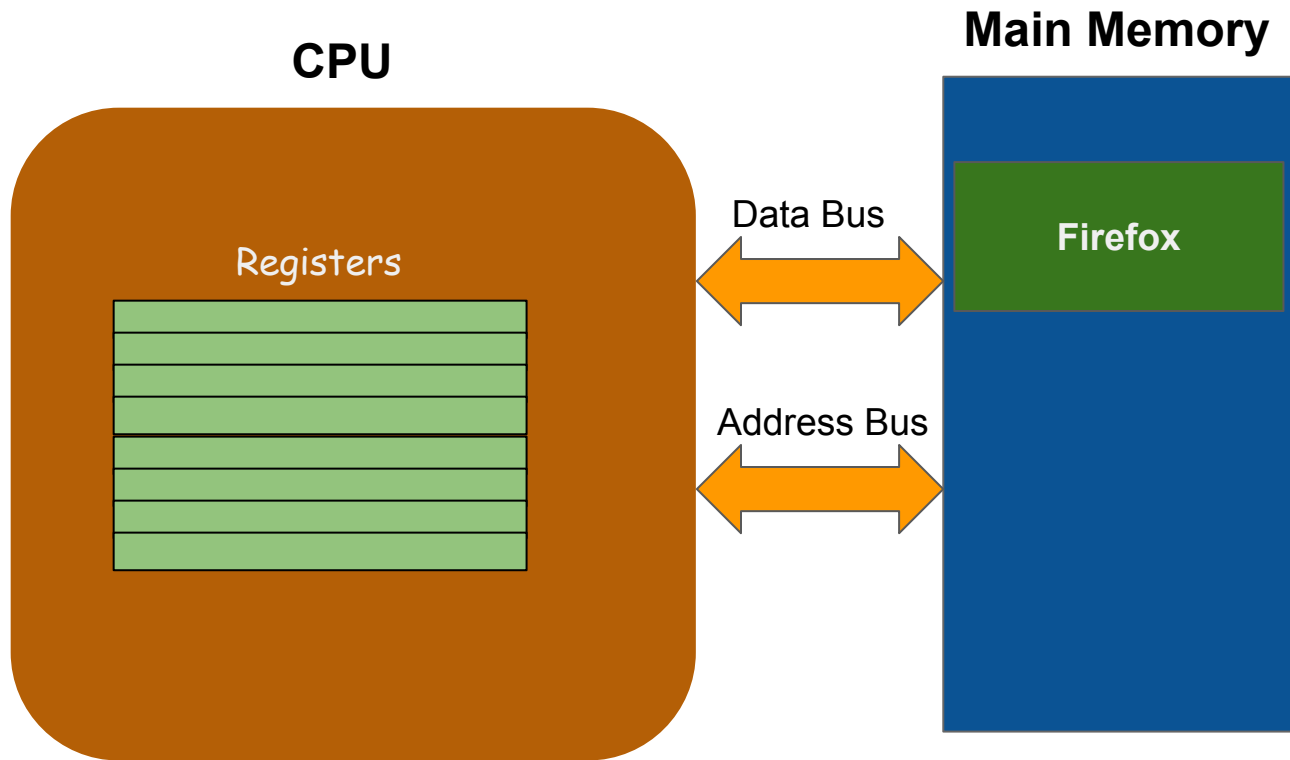
کامپیوترهای برنامه پذیر



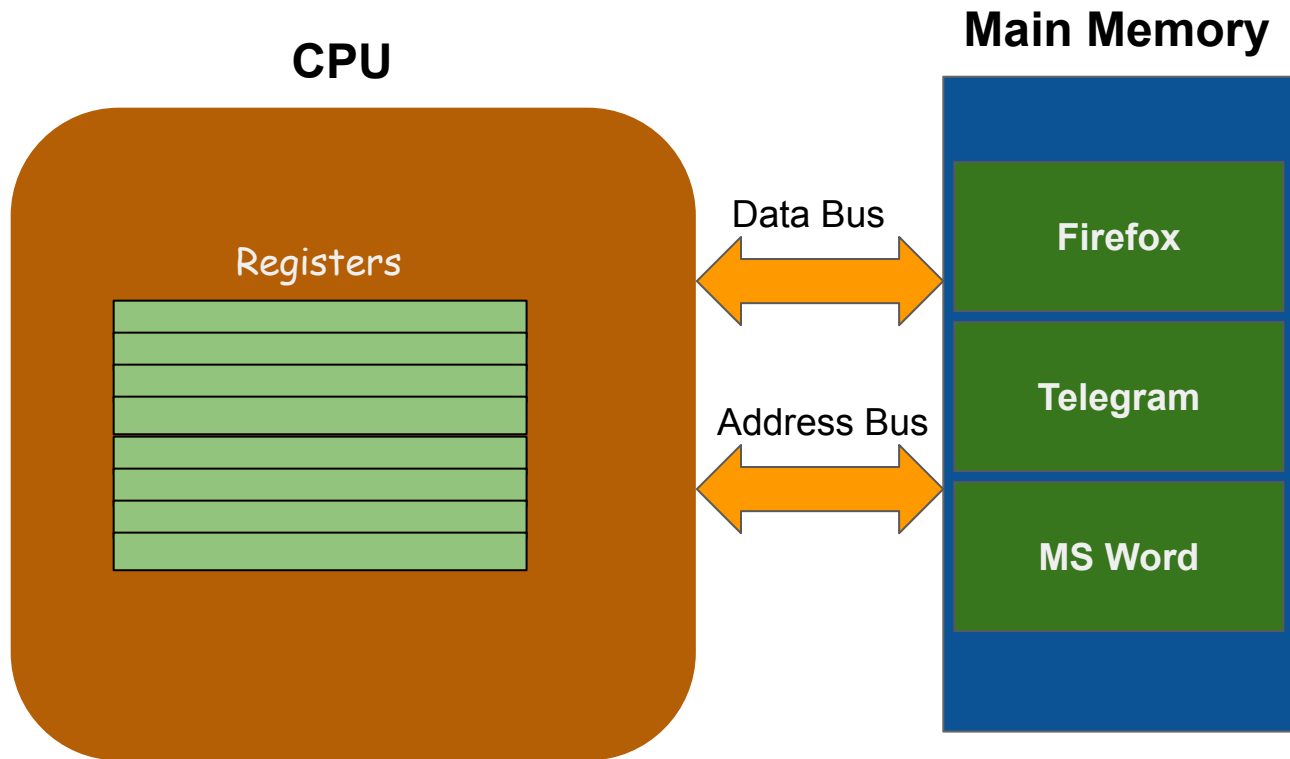
برنامه ها



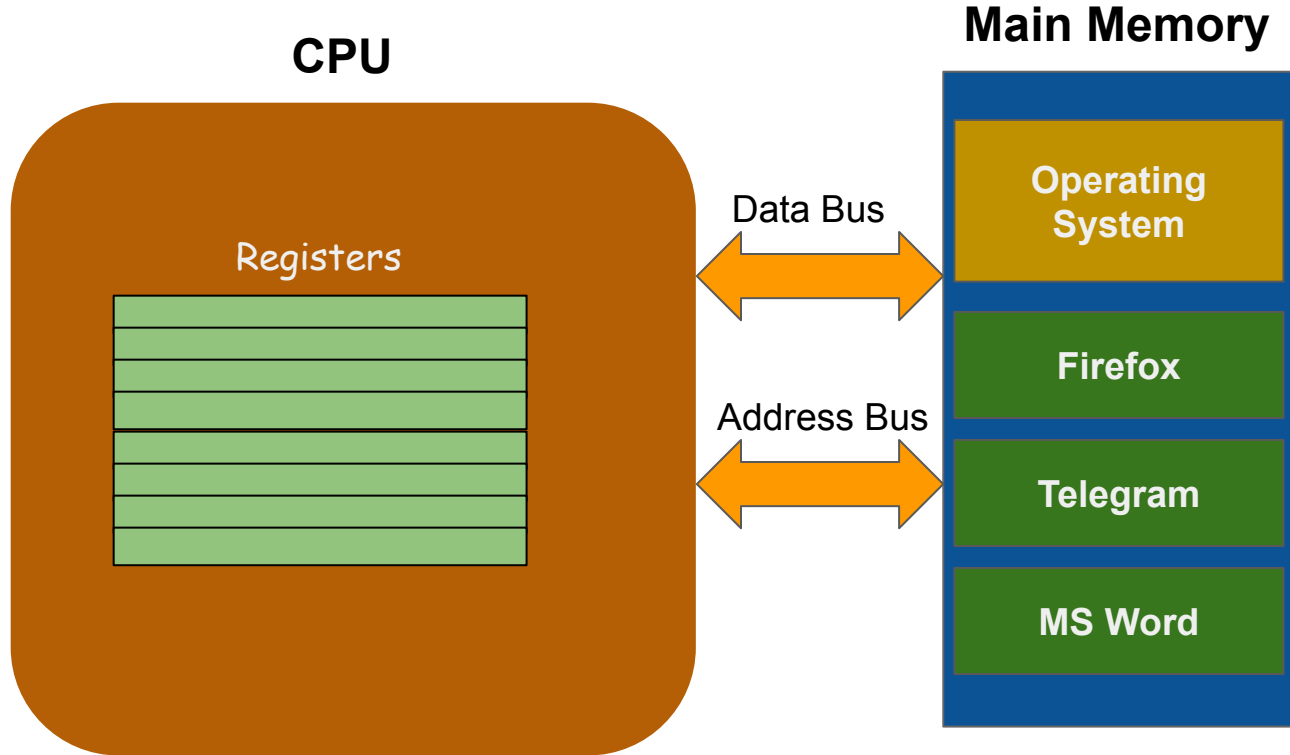
برنامه ها



برنامه ها



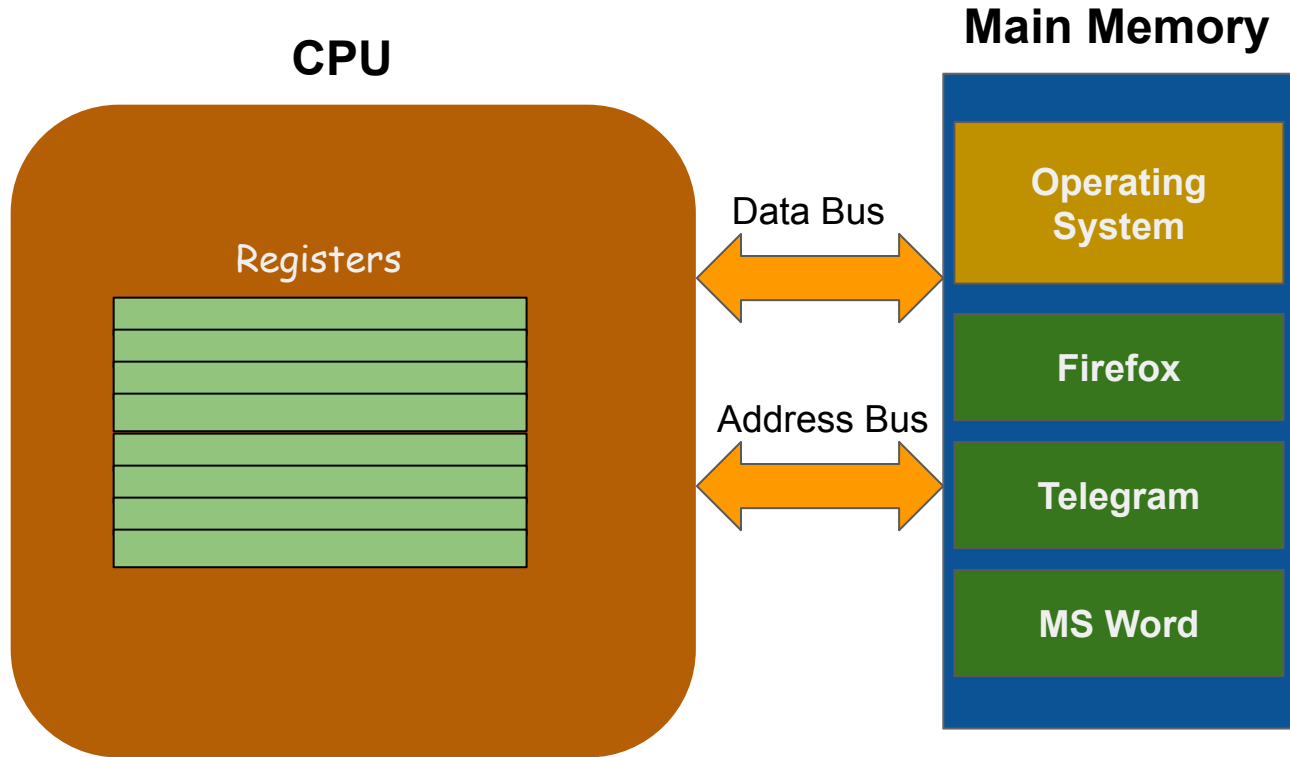
سیستم عامل



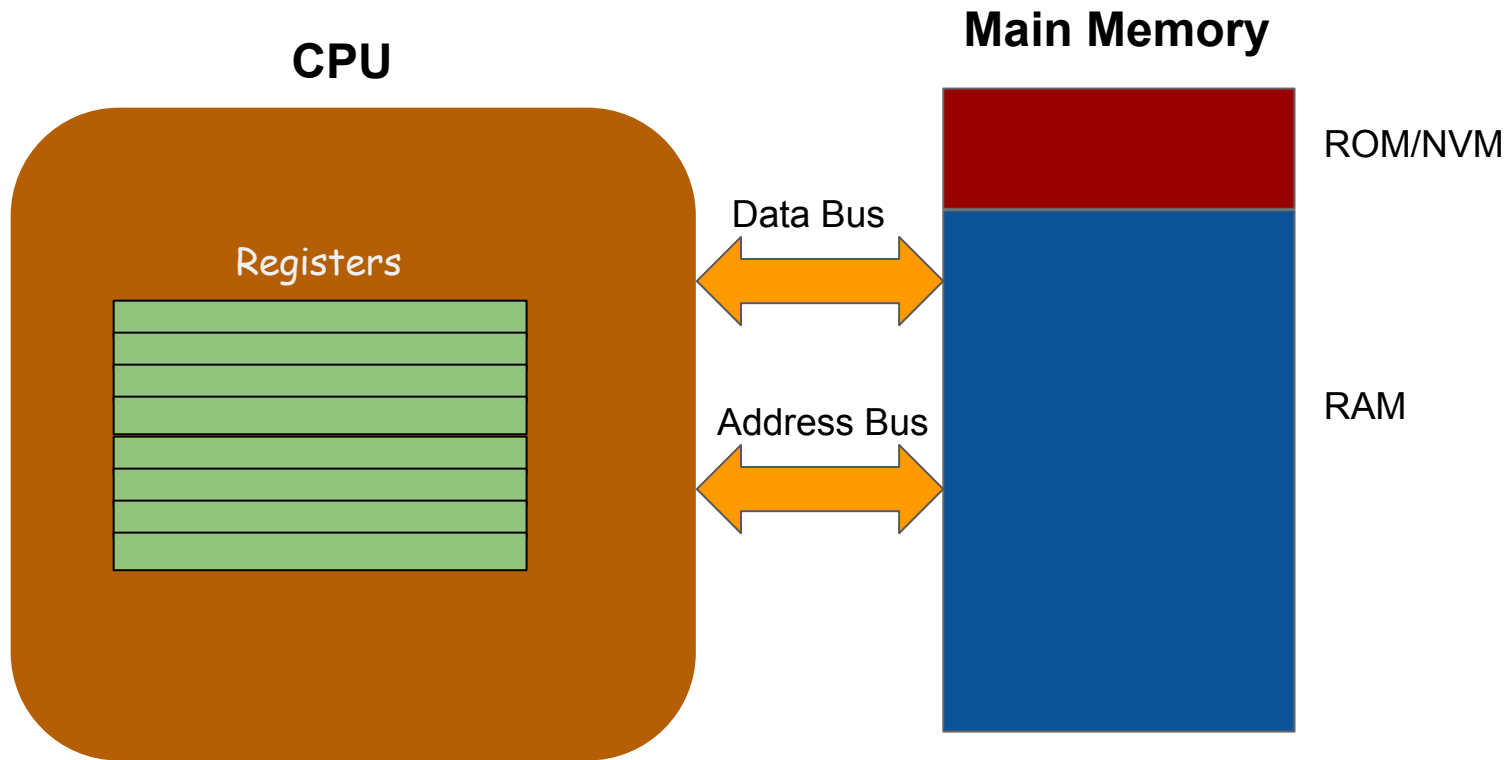
سیستم عامل



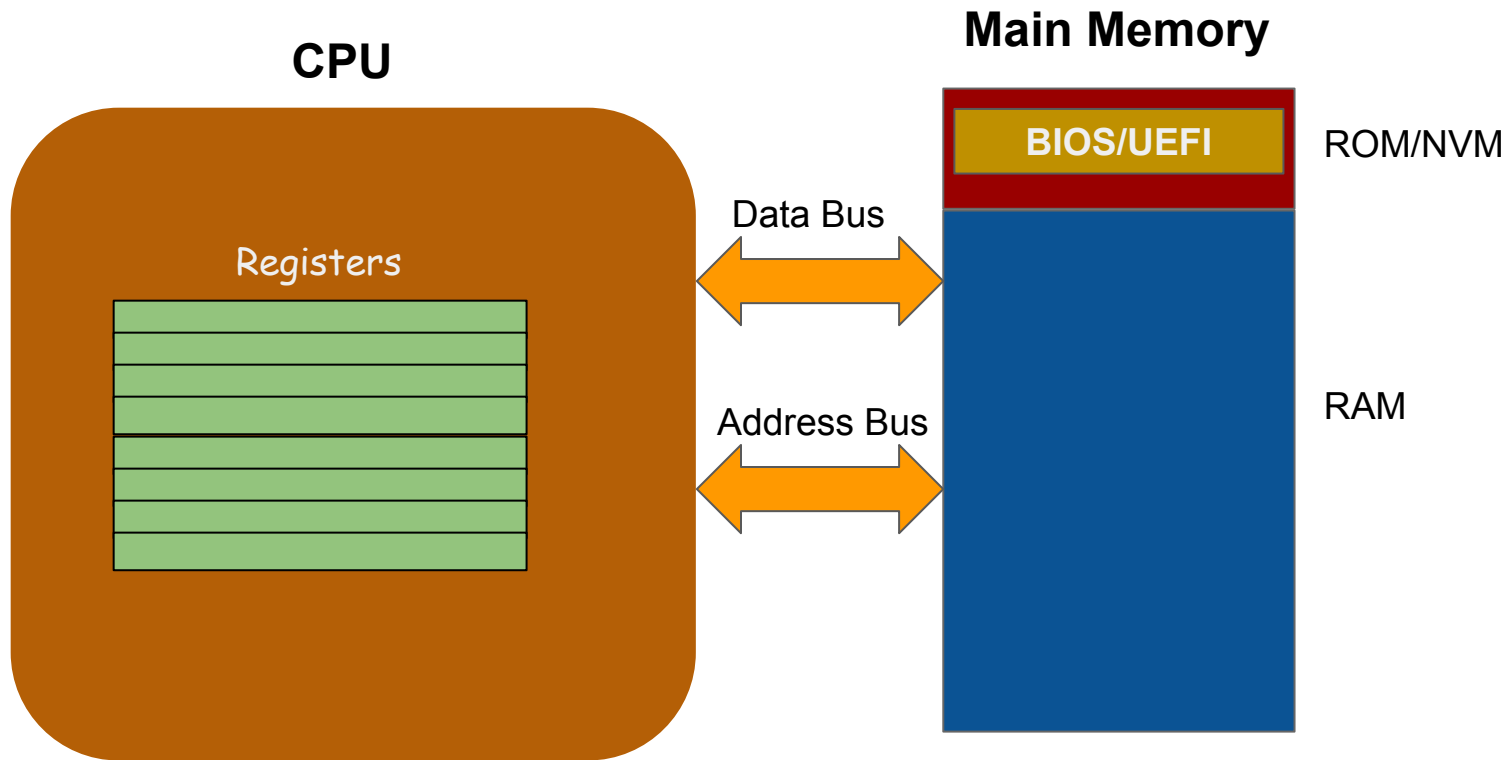
بوت شدن کامپیوتر؟



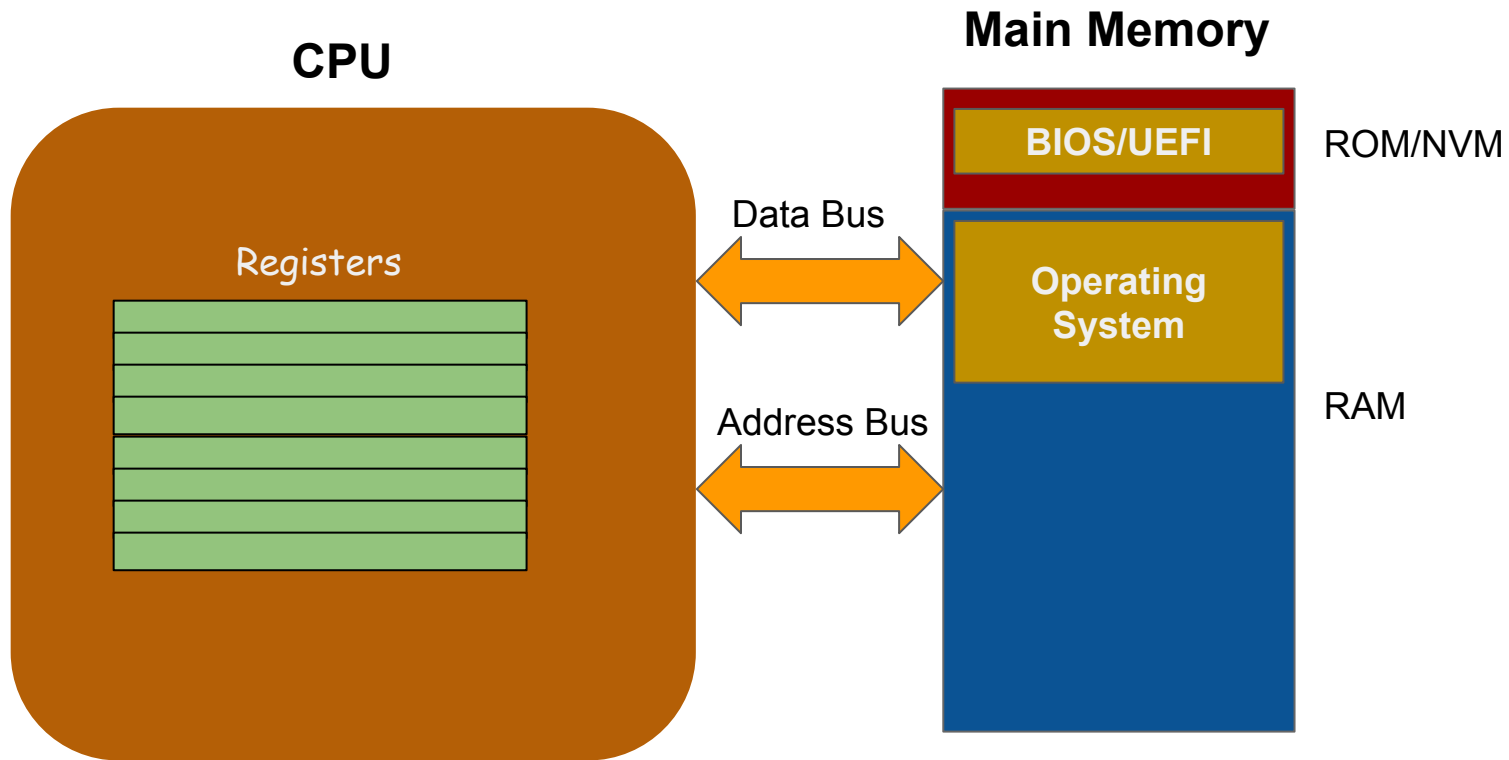
بوت شدن



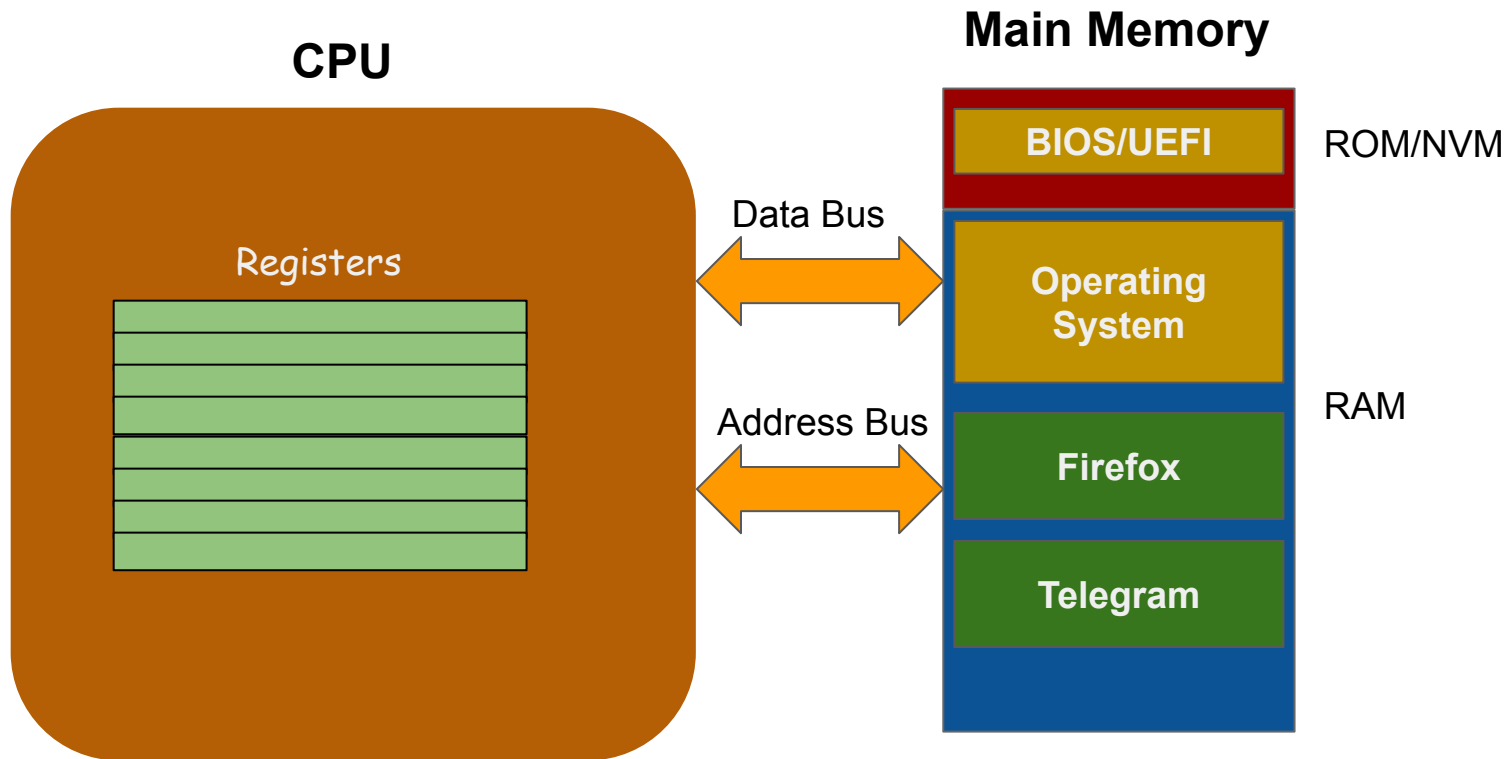
بوت شدن



بوت شدن



بوت شدن



Practice C

- https://www.tutorialspoint.com/compile_c_online.php
- <https://www.hackerrank.com>
- <https://www.tutorialspoint.com/cprogramming/>
- <http://www.programiz.com/c-programming>
- <http://www.c4learn.com/learn-c-programming-language/>

Set up your platform

- Linux Users
 - Choose an editor or IDE
 - gedit, **emacs**
 - Anjuta, Eclipse, Code::Blocks
 - C++-dev for linux
- Windows Users
 - **Install C++-dev**
 - <https://sourceforge.net/projects/orwelldevcpp/>
 - Eclipse, Code::Blocks
 - Visual C++
- MAC
 - Eclipse, Code::Blocks,