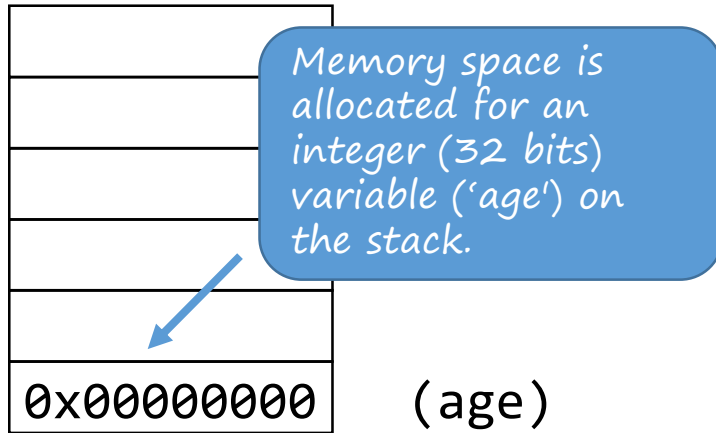


Arrays on stack/heap

Stack

(local variables)



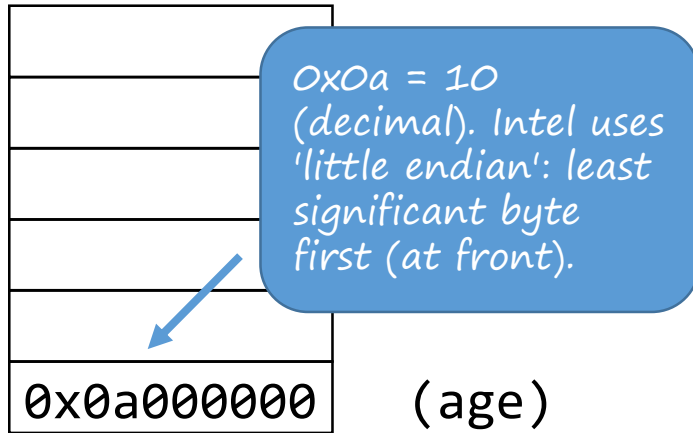
Heap

(objects & arrays)

```
static void Main(string[] args)
{
    int age;
}
```

Stack

(local variables)



`0xBE8A0D40`

Heap

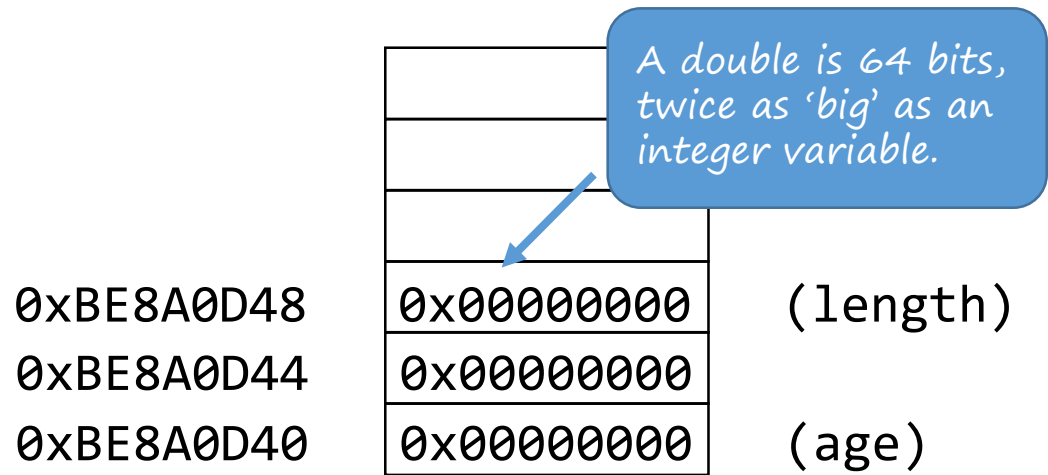
(objects & arrays)

```
static void Main(string[] args)
{
    int age;

    age = 10;
}
```

Stack

(local variables)



Heap

(objects & arrays)

```
static void Main(string[] args)
{
    int age;
    double length;
}
```

And what about arrays on stack?

Stack

(local variables)

0xBE8A0D4C	null	(numbers)
0xBE8A0D48	0x00000000	(length)
0xBE8A0D44	0x00000000	
0xBE8A0D40	0x00000000	(age)

*Declaring an array
does not allocate
space for the content
of the array!*

*The value 'null'
means: no reference
(to the heap).*

Heap

(objects & arrays)

```
static void Main(string[] args)
{
    int age;
    double length;
    int[] numbers;
}
```

Stack

(local variables)

0xBE8A0D4C	0x1A0834C0	(numbers)
0xBE8A0D48	0x00000000	(length)
0xBE8A0D44	0x00000000	
0xBE8A0D40	0x00000000	(age)

Heap

(objects & arrays)

0x1A0834C8	0x00000000	(numbers[2])
0x1A0834C4	0x00000000	(numbers[1])
0x1A0834C0	0x00000000	(numbers[0])

```
static void Main(string[] args)
{
    int age;
    double length;
    int[] numbers;

    numbers = new int[3];
    numbers[0] = 1;
    numbers[1] = 2;
    numbers[2] = 3;
}
```

Not until 'new ...'
memory space will
be allocated for the
array elements.

Stack

(local variables)

0xBE8A0D4C	0x1A0834C0	(numbers)
0xBE8A0D48	0x00000000	(length)
0xBE8A0D44	0x00000000	
0xBE8A0D40	0x00000000	(age)

Heap

(objects & arrays)

0x1A0834C8	0x00000000	(numbers[2])
0x1A0834C4	0x00000000	(numbers[1])
0x1A0834C0	0x00000001	(numbers[0])

```
static void Main(string[] args)
{
    int age;
    double length;
    int[] numbers;

    numbers = new int[3];
    numbers[0] = 1;
    numbers[1] = 2;
    numbers[2] = 3;
}
```

Stack

(local variables)

0xBE8A0D4C	0x1A0834C0	(numbers)
0xBE8A0D48	0x00000000	(length)
0xBE8A0D44	0x00000000	
0xBE8A0D40	0x00000000	(age)

Heap

(objects & arrays)

0x1A0834C8	0x00000000	(numbers[2])
0x1A0834C4	0x00000002	(numbers[1])
0x1A0834C0	0x00000001	(numbers[0])

```
static void Main(string[] args)
{
    int age;
    double length;
    int[] numbers;

    numbers = new int[3];
    numbers[0] = 1;
    numbers[1] = 2;
    numbers[2] = 3;
}
```


Stack

(local variables)

0xBE8A0D4C	0x1A0834C0	(numbers)
0xBE8A0D48	0x00000000	(length)
0xBE8A0D44	0x00000000	
0xBE8A0D40	0x00000000	(age)

Heap

(objects & arrays)

0x1A0834C8	0x00000003	(numbers[2])
0x1A0834C4	0x00000002	(numbers[1])
0x1A0834C0	0x00000001	(numbers[0])

```
static void Main(string[] args)
{
    int age;
    double length;
    int[] numbers;

    numbers = new int[3];
    numbers[0] = 1;
    numbers[1] = 2;
    numbers[2] = 3;
}
```