

Union (1A)

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Structure Memory Layout

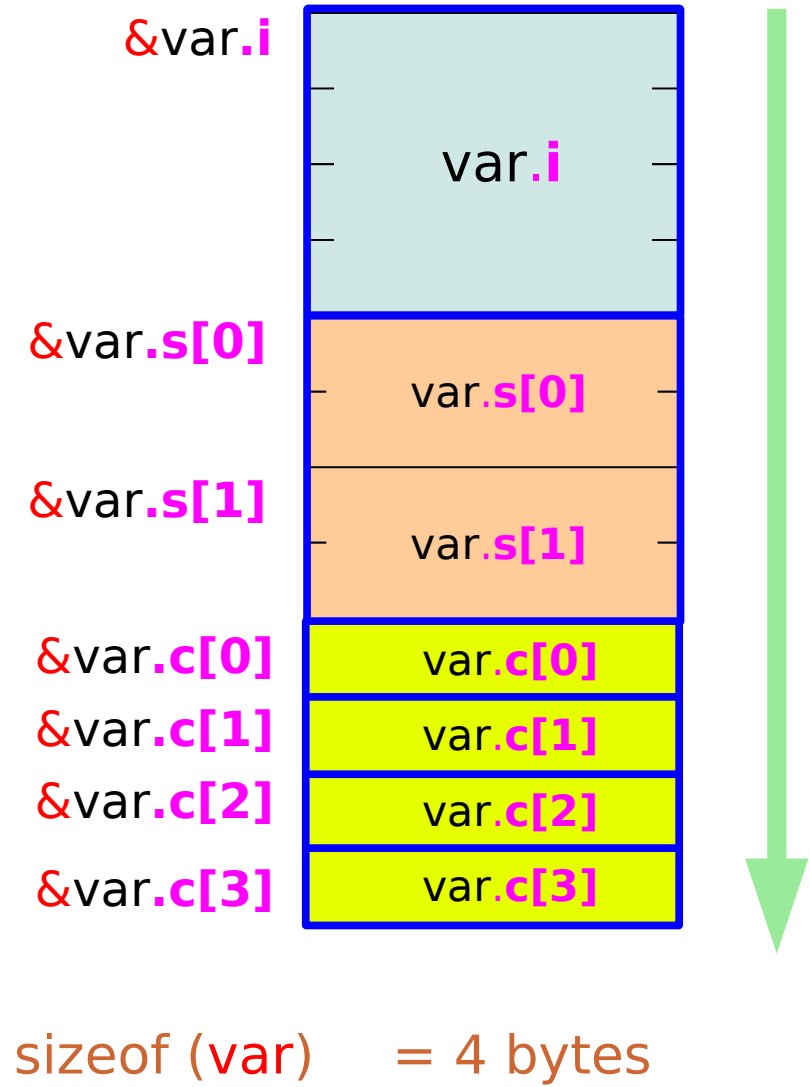
structure type definition

```
struct aaa {  
    int    i;  
    short  s[2];  
    char   c[4];  
};
```

```
struct aaa var;
```

var declaration

sizeof (int) = 4 bytes
sizeof (short) = 2 bytes
sizeof (char) = 1 bytes



Union Memory Layout

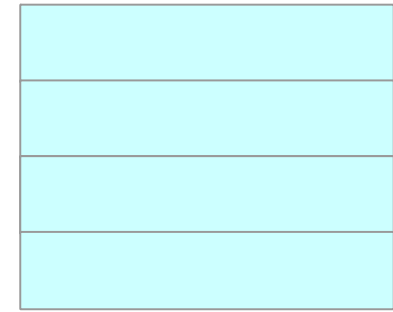
structure type definition

```
union bbb {  
    int    i;  
    short  s[2];  
    char   c[4];  
};
```

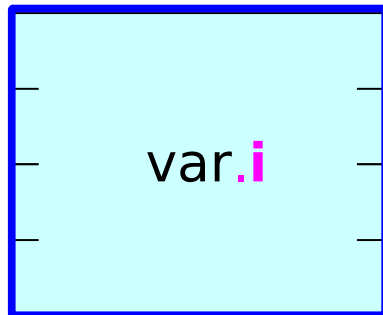
```
union bbb var;
```

var declaration

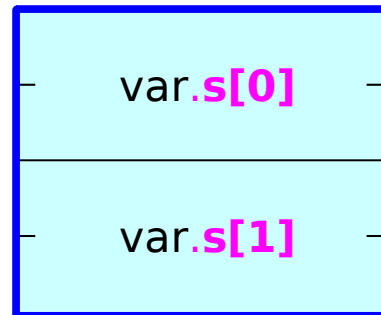
shares the same
memory locations



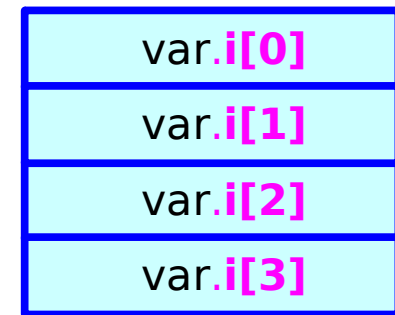
1. int view



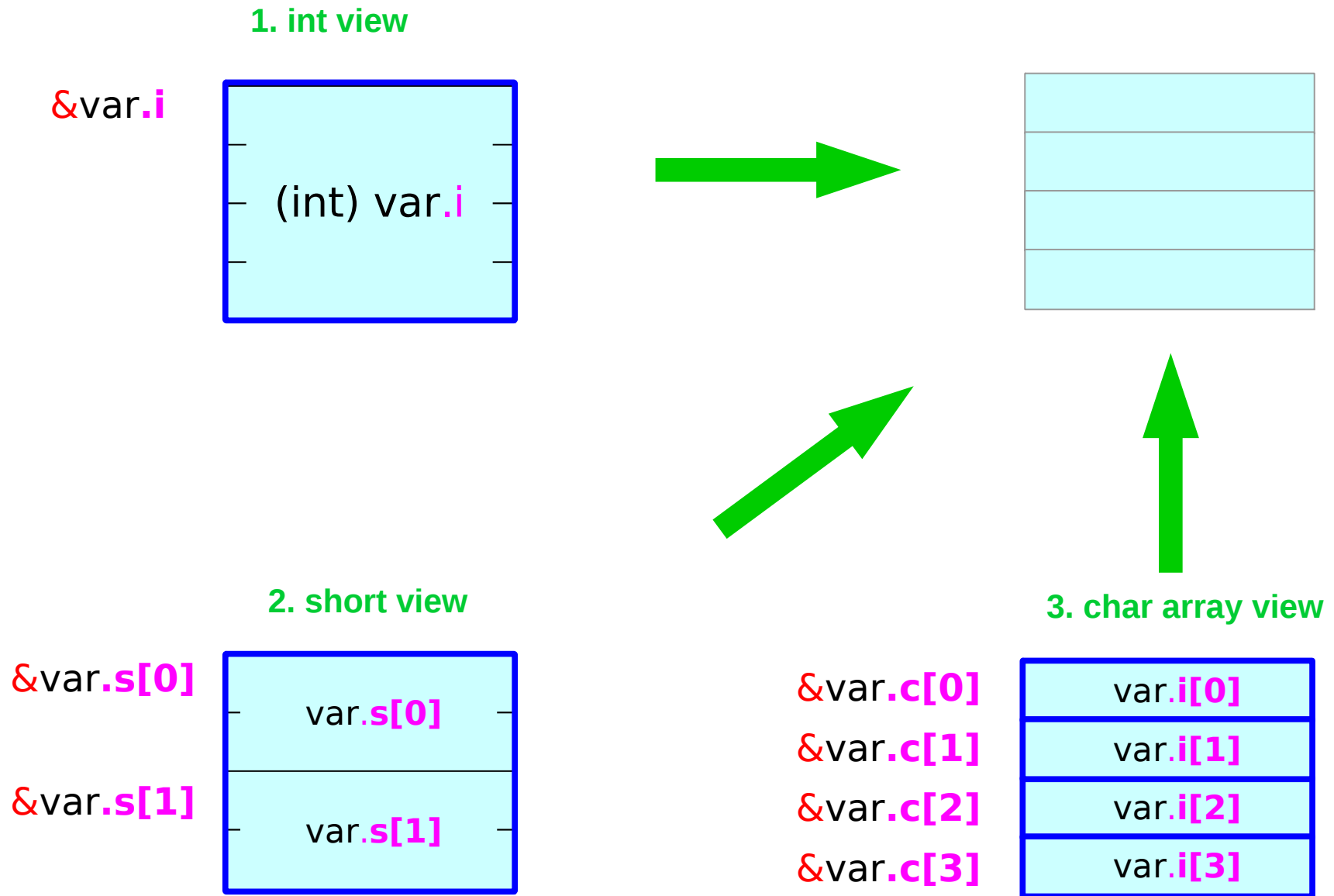
2. short view



3. char array view



Different views on the same memory locations

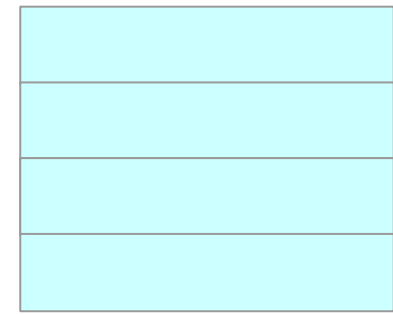


Little Endian

structure type definition

```
union bbb {  
    int    i;  
    short  h;  
    char   a;  
};
```

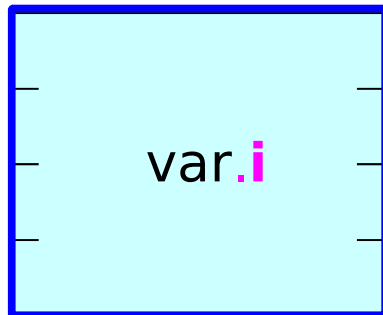
shares the same
memory locations



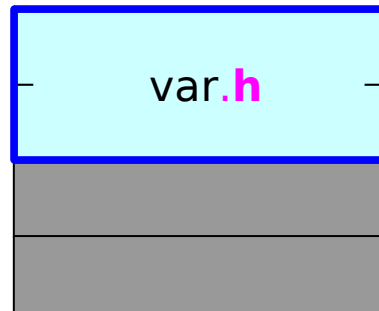
```
union bbb var;
```

var declaration

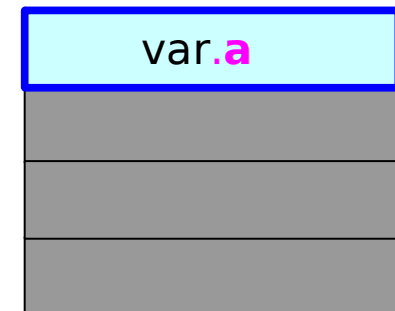
1. int view



2. short view



3. char array view



References

- [1] Essential C, Nick Parlante
- [2] Efficient C Programming, Mark A. Weiss
- [3] C A Reference Manual, Samuel P. Harbison & Guy L. Steele Jr.
- [4] C Language Express, I. K. Chun