

# Structures



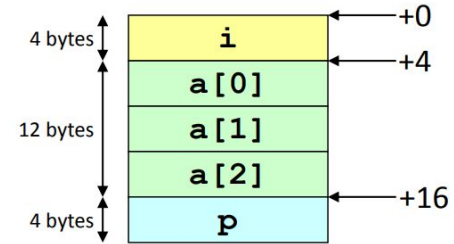
# Structures ( Structs )



- **Heterogeneous data set:**
  - contiguously stored in memory
  - referenced by name

## Example:

```
typedef struct {  
    int i;  
    int a[3];  
    int *p;  
} X;  
X S;  
  
Init(&S);
```



## Example:

```
void Init (X *S) {  
    (*S).i = 1;  
    S->a[2] = 0;  
    S->p = &(*S).a[0];  
}
```

# Structures ( Struct )



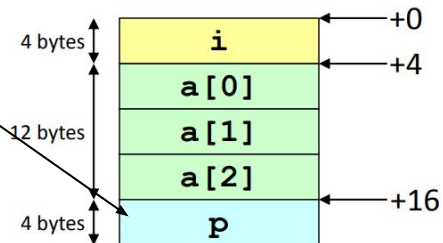
## Example:

```
typedef struct {  
    int i;  
    int a[3];  
    int *p;  
} X;  
X S;  
Init(&S);
```

## Traduction:

```
Init: push %ebp  
      movl %esp,%ebp  
      movl 8(%ebp),%edx  
      movl $1, (%edx)  
      movl $0,12(%edx)  
      leal 4(%edx),%eax  
      movl %eax,16(%edx)  
      popl %ebp  
      ret
```

24(%ebp)



## Example:

```
void Init (X *S) {  
    (*S).i = 1;  
    S->a[2] = 0;  
    S->p = &(*S).a[0];  
}
```