

COP 3502 8/28/23

Learn more dyn mem \Rightarrow M, W

Quiz \Rightarrow F

PO \Rightarrow Wed [2 param fgets I made 100,001
need it to be 100,002 or bigger]

PI will be posted Wed.

Examples:

(1) array of strings

(2) array of structs

(3) array of ptr to structs

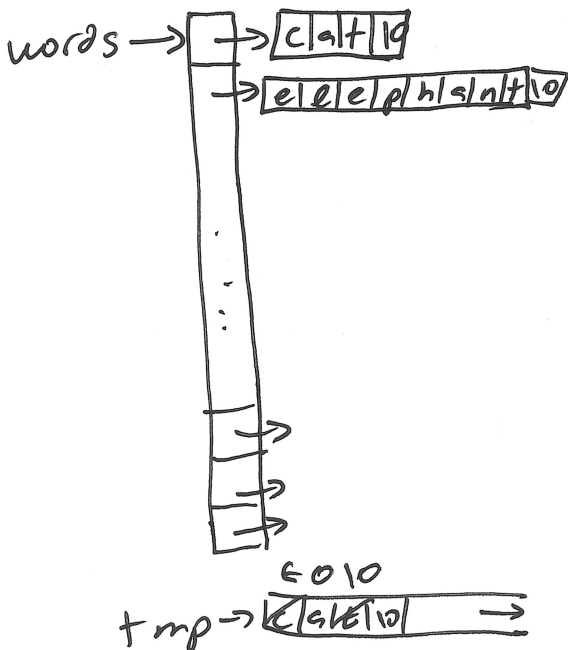
Ver1 for array of strings (efficient)

```
char ** words = calloc(n, sizeof(char*));
```

of words

```
for (int i = 0; i < n; i++) {  
    scanf("%s", tmp); // assume  
    words[i] = calloc(strlen(tmp)+1, sizeof(char));  
    strcpy(words[i], tmp);  
}
```

```
for (i = 0; i < n; i++)  
    free(words[i]);  
free(words);
```



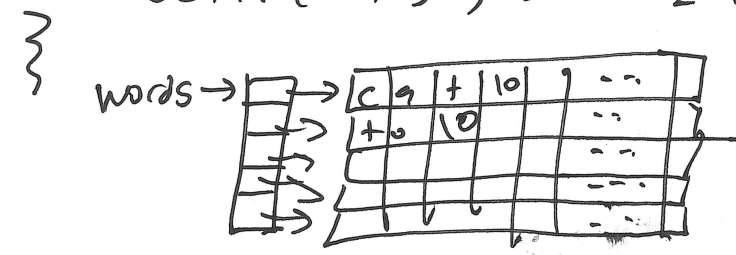
V2 - all strings same len

```
char** words = calloc(n, sizeof(char*));
```

```
for (i=0; i<n; i++) {
```

```
    words[i] = calloc(30, sizeof(char)); // assume all str ≤ 29 chars
```

```
    scanf("%s", words[i]); // just char
```



```
typedef struct card {
```

```
    char suit; // ['S', 'H', 'C', 'D']
```

```
    char kind; // ['A', '2', ..., '9', 'T', 'J', 'Q', 'K']
```

```
} card;
```

```
typedef struct hand {
```

```
    card* mycards;
```

```
    int numcards;
```

```
} hand;
```

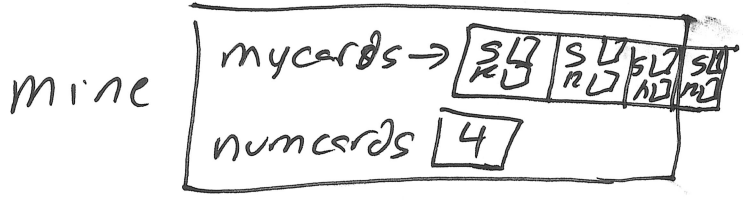
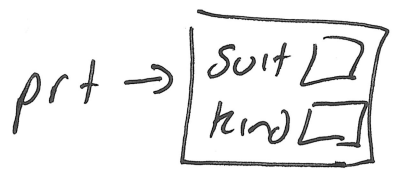
```
card mine;
```



```
hand mine;
```

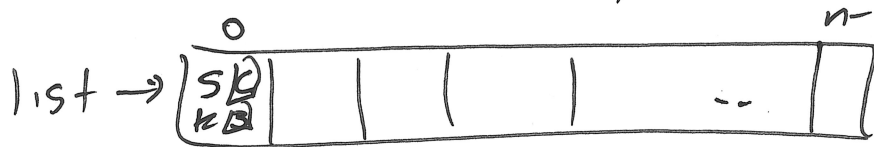


```
card* ptr = malloc(sizeof(card));
```



Alloc an array of card

```
card* list = calloc(n, sizeof(card));
```



```
for (i=0; i<n; i++) {  
    list[i].suit = getRndSuit();  
    list[i].kind = getRndKind();  
}  
:  
free(list)
```

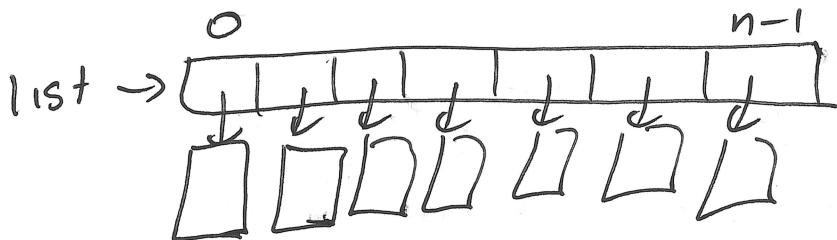
Array to ptr to struct

```
card** list = malloc(n * sizeof(card*));
```

```
for (i=0; i<n; i++) {
```

```
    list[i] = malloc(sizeof(card*));
```

```
    (*list[i]).suit = getRndSuit(); list[i]->kind = getRndKind();  
}
```



I like this one better!

easy + faster to swap array positions

~~list[i]~~

```
card* tmp = list[i];
```

```
list[i] = list[j];
```

```
list[j] = tmp;
```

