



# Arrays(Chapter 7.1-7.3)

- Vectors, words
- Defining arrays
- Accessing array elements
- Array Parameters

# Quantities Using More Than One Number

- A point in space requires number numbers.
- A point in space-time requires 4.
- The longest nontechnical word requires 28 characters
- The test scores in a class of 200 students requires 200 integers

# Arrays

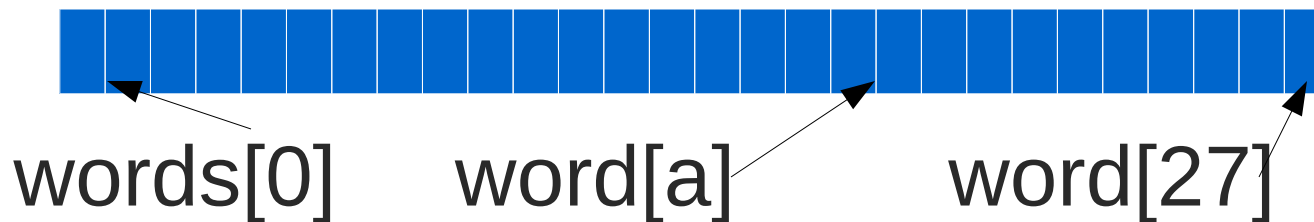
- `double p[3]` reserves 3 double memory location called `p[0]`, `p[1]`, `p[2]`.
- `char words[28]`:  
`words[0], ..., words[27]`
- `int scores[200]`:  
`scores[0], ..., scores[199]`

# Array Storage

- Double p[3]



- p[1] is 1 double away from p[0]
- p[2] is 2 doubles away from p[0]
- p[t] is t doubles away from p[0]
- char words[28]; int a=19;



# Array Storage

- Double p[5]
- |      |      |      |      |      |
|------|------|------|------|------|
| p[0] | p[1] | p[2] | p[3] | p[4] |
|------|------|------|------|------|
- `t=2;p[t-2]=3.7;p[t]=6.5;p[t+2]=4.2;`
- `For (t=0;t<3;t++) cout << p[t] <<endl;`
- output?
- `p[5]={2.5,4.4,15.3,34.7,-113.5};`
- `P[0]=2.5, p[1]=4.4,p[2]=15.3,...;`
- `somefunction(p[2],p[t]);` can be value or reference parameters.

# Example

Problem: Read in a sentence of nontechnical English words and print out the first word, alphabetically, in the sentence, and its position in the sentence. The sentence is complete when the user types a “.”

**solution**

# Homework

Problem: Compute the average and standard deviation of a set of  $n$  integer test scores, where the user is asked to input  $n$  and then the  $n$  test scores.

A partial solution is [here](#). Complete it and email it to me by class time on Thursday, November 5.