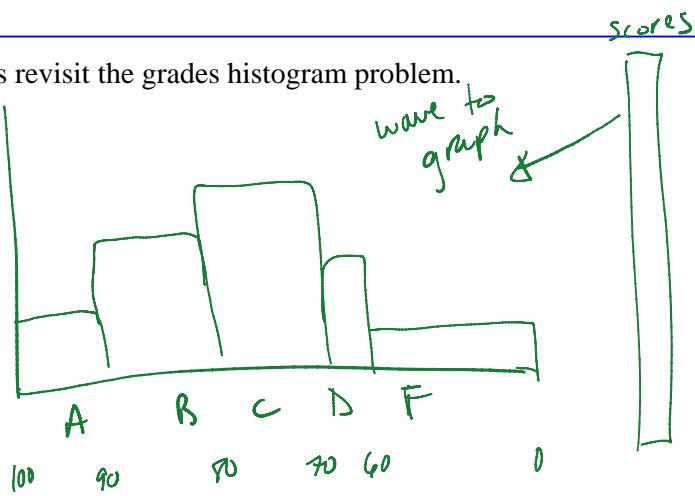


Let's revisit the grades histogram problem.



My code "right" ✓  
A) worked

B) didn't work

"nice" vs "less nice"

My code had

- A) no for loop
- B) 1 for loop (total)
- C) 1 for loop for each bin



Multiloop

```
for (each point in score[n])  
    if (that point > 90 && < 100)  
        A = A + 1 //counts A scores  
    endif  
endfor
```

```

for (each point)
  if (80 + 90)
    B = B + 1
  endif
endfor

```

single loop

```

for (each point in scoreWV)
  if (score < 60)
    F = F + 1
  elseif(score < 70)
    D = D + 1
  elseif ...
  endif
endfor

```

```

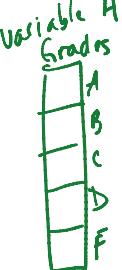
for
  if(score ≥ 90)
    A = A + 1
  elseif(score ≥ 80)
    B = B + 1
  :
  endif
endfor

```

```

for
  if(score ≥ 90 OR ≤ 100)
    A = A + 1
  elseif(score ≥ 80 OR < 90)
    B = B + 1
  :
  endif

```



being updated  
 $Grade[0] = Grade[0] + 1$

- outcome  
 (A) same  
 (B) different

Are the results (if counted for A, B, etc.)

- A) same B) different

Did your code

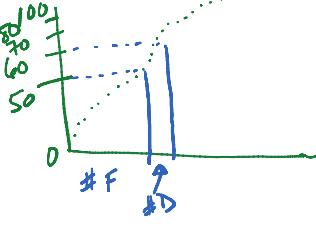
- (A) update a variable as a counter (shown above)  
 (B) update a value in a wave  
 (C) something else

↓  
 rounded score down to nearest 10  
 if < 60 → change all to 59

used histogram to bins

no for loop

sort scoreWV



binary search

binary search interp

Find Level  
(x vs. point)

variable Fbin = FindLevel(50)

Dbin = FindLevel(60) - Fbin

$$\begin{aligned} 60 &= D \\ &\approx 59.999 \end{aligned}$$

Modify Pseudocode

⇒ What if you want code to help  
you figure out a curve? (bins are  
not nec.  
90/80/... cutoffs)

\* if statements need to more flexible  
(old version were hard-coded)

if (score < 60)  
60 "hard coded"

**New**  
if (score < Fthresh)  
if (score < Dthresh)  
variables that  
are arg. to  
function

function myhist (scorewr, wv, Athresh, Bthresh...)  
variables

function        (scorewr, threshwr)  
if (score < threshwr[0])  
if (score < threshwr[1]) ...

way }  
sort  
|  
...  
.

use FindLevel (or FindValue)

⇒ assume even bin widths (e.g. 10. point  
blocks)

$\Rightarrow$  send A-threshold

Find Level scores,  $F_{thresh}$

$$F = V\_level X$$

Find Level scores,  $F_{thresh} + binwidth$

Another Way

