Your name: Example Design Date:

Problem: Assignment 3: On Target

Problem description:

fire arrows, score them,
compute histogram & stats.

Input name	Description	Data type
arrow location		
x = <sum of 8 rand. ints 0..275> - 1100	arrow x coord	int
y = <as above>	arrow y coord	int

(for ea. of 1000 arrows)

Output data:	Output form:	Data type:
(for ea. bucket) histogram count	printed	int
(for ea. bucket) histogram bar	"	text
score mean	"	double
" median	"	double
" standard dev.	"	double

Strategy:

- simulate 1000 arrows, compute scores store scores in array *
- count scores, populate histogram array *
- print histogram
- compute & print stats (mean, median, std. dev.)

Control flow sketch:

simulate/score arrows

```
int scores[1000];
for (i=0; i<1000; i++){
  x = <sum of 8 rand int 0..275> - 1100
  y = <   ...   > - 1100
  dist = sqrt(x^2 + y^2)
  score = <based on dist>
  scores[i] = score
}
```

populate hist. array

```
int hist[11] =
  { 0 };
for (i=0; i<1000; i++){
  int score = scores[i];
  int index =
    <based on score>
  hist[index]++;
}
```

Similar problems:

hist[0] - # of 0 scores

hist[1] = # of 100 scores

⋮

etc.

⋮

hist[10] - # of 1000 scores