

ECE 376 - Homework #7

Data Collection. Student t-Tests

Reflex Time

Write a C program which measures your reflex time

- The game starts when you press RB0
- Once pressed, the PIC waits 3.0 to 7.0 seconds (random)
- After waiting, the lights on PORTA turn on
- The PIC then starts looping, one loop every 1ms, to keep track of time
- Once the lights turn on, press RB0 again
- The time delay from when the lights turn on and you press RB0 is your reflex time.,.

- 1) Give a flow chart for this program
- 2) Give the corresponding C code
- 3) Verify your code works (collect data)

t-Test with One Population

- 4) Record your reflex time with 2+ readings (Population A)
 - Give the raw data
- 5) Use a student t-test to determine
 - The 90% confidence interval for your reflex time (individual)
 - The 90% confidence interval for your average reaction time (population)

t-Test with Two Populations

- 6) Record a different set of reflex times (Population B)
 - Yourself a little while later
 - Someone else's reflex times
- 7) Use a student t-test to determine
 - The probability that $A > B$ (a random sample from population A is larger than a random sample from population B)
 - The probability that A's average reaction time is more than B's average reaction time.