**Overview:** This project is different from others. Instead of working in groups, we will start with individual work using StatCrunch, followed by speed-dating, and then you will have a short amount of time to revise your work. We will repeat this cycle 3 times with 3 separate problems. Your instructor may require you to turn in a written report.

**Instructions:**

1) Log into StatCrunch, go to Resources. Click on StatCrunchU and select a random sample of 100 students. You will use this sample for all 3 problems.
2) Open a Word document. Your instructor will project a problem onto the overhead screen. Type the research question into your Word document.
3) Conduct the appropriate T-procedure in StatCrunch and paste your table into the Word document.
4) Write a conclusion about StatCrunchU and answers the research question.

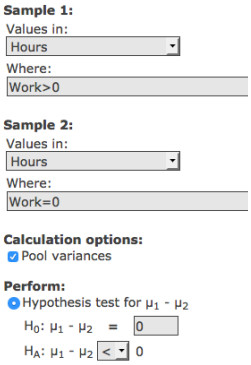
**Warm-up:** We will do a quick warm-up before we get started.

1) You and your classmate will have different random samples. When you discuss your work, which of the following should be the same?

| | | |
|---|---|---|
| >StatCrunch procedure | >Sample mean | >P-value |
| >Hypotheses | >Standard error | >L. and U. limits of confidence interval |
| >Degrees of freedom | >T-stat | >Conclusion |

2) Do StatCrunchU students who work take fewer units than those without a job?

Choose Stat, T-Stats, Two-sample, With Data.
**Values in:** choose the response variable Hours
**Where:** Use the short-cut shown for creating the two comparison groups: those who work (Work>0) and those who do not work (Work=0)




**Two sample T hypothesis test:**
$\mu_1$ : Mean of Hours where Work>0
$\mu_2$ : Mean of Hours where Work=0
$\mu_1 - \mu_2$ : Difference between two means
$H_0 : \mu_1 - \mu_2 = 0$
$H_A : \mu_1 - \mu_2 < 0$
(with pooled variances)

**Hypothesis test results:**

| Difference | Sample Diff. | Std. Err. | DF | T-Stat | P-value |
|---|---|---|---|---|---|
| $\mu_1 - \mu_2$ | -2.0116877 | 0.62267192 | 98 | -3.2307346 | 0.0008 |

Your classmate writes the following conclusion: "Fail to reject Ho in favor of Ha." What feedback do you have for him?

**The Three Problems.**

1. Do StatCrunchU students who work have greater loan debt than those who do not work?

2. According to Debt.org, college students have an average of $3,200 in credit card debt. Do StatCrunchU students have less credit card debt on average?

3. Who has more credit card debt on average, female or male StatCrunchU students? How much more?