# GDAPS – Practice Exercise

# Debugging

## Objective

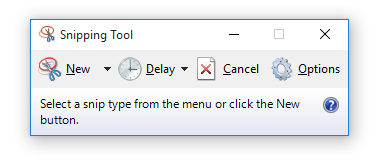
Experiment with Visual Studio’s debugging tools. Take some screenshots of the process.

## PE Setup:

* **DOWNLOAD** this document. Save it in an easily-accessible location.   
  Name the file “LastNameFirstName\_DebuggingPE”.   
  *(i.e. “CascioliErin\_DebuggingPE”)*
* **DOWNLOAD** the starter file “*GDAPS\_DebuggingStarter*” in MyCourses. **DO NOT rename the file.**
* **UNZIP** the starter file. Place this unzipped file in your **local repo’s PE’s folder**.
* **Commit** and **push**!

## Important Info

* This exercise requires screenshots. To do this, use the “Snipping Tool” found in Windows. Search for it by clicking on the Windows logo in the bottom-left corner of the desktop and typing “snipping.”



When you click “New”, the entire screen will appear ghosted. You can then click and drag anywhere to select a box. This selection will then appear in its own window, where you can then paste into this document. You can also save the snip, although you don’t need to for this exercise.

* **Read this entire document before moving on!**

## Debugging

* **OPEN** the unzipped file’s solution in Visual Studio.

Many code statements are broken via a compile-time, runtime, or logic error. Your task is to use the debugger, taking screenshots along the way, to determine the errors and fix them.

## Documenting the errors

As you debug this code, document each error with its error type, then describe how you fixed it. An example is given below:

**Error #1**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

Line 30 parses the user’s data to a double and attempts to save that in an integer variable. A value of type double cannot be assigned to an integer variable; they are not compatible. I knew this was an error because it was underlined in red squiggles in Visual Studio.





**What type of error is it?** Syntax (or compile time) error

**How did you fix it?** I parsed userNumber2AsString to an integer instead of a double.

## Submission

When you are finished, upload BOTH to the appropriate dropbox:

* This completed document and
* The commit link to your completed program

## NOW - Go forth and debug!

* Debug the broken program to the best of your ability, and document along the way!

## A GOOD Sample Run

Your fixed program should run *exactly* like this sample run. Be sure that you are debugging enough so that your program’s output matches this sample run.

*FYI: User input is shown below in blue bolded text. Your program will only show white, non-bold text.*

Hi there! This is the percent calculator.

Give me a number and I'll calculate it to your given percentage.

First, enter a number between 1 and 100: ***50***

Now, enter a number between 1 and 9: ***2***

20% of 50 is 10

Great! Now let's determine some trigonometry.

Give me a whole angle in degrees, and I'll tell you the sine! ***60***

Converting to radians... 60 degrees is 1.0471975511965976 radians.

The sine of 1.05 radians is 0.866

Lastly, tell me your name!

***Emily***

I will rename you milyE!

Thanks for playing my game! Have a great day, Emily!

## So how do I get my program to match the sample run?

To get your output to match the sample run exactly, you’ll need to think about what needs to be fixed.

That might include:

* Fixing console output
* Declaring new variables
* Using the correct variables in the correct spots
* Changing mathematical expressions
* Casting or changing variable data types
* Calling correct methods or additional methods
* Reading method documentation
* … and whatever else you need to do to fix the program!

You won’t need to:

* Change comments
* Change existing variable names. If one doesn’t exist, declare it!
* “Clean up” the code to match coding standards

## Document Your Errors Here!

If there are not enough numbered prompts for the errors you find, add more. Alternately, depending on the number of errors you find and in what order you find them, you may have fewer than 10 errors.

**Error #1**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred. We run the debugger and found that there was an error on line 30.*

**What type of error is it?** Syntax Error

**How did you fix it?**

I changed the double to int data type.

**Error #2**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

*Line 34 takes the variable userNumber1AsInt but this variable was never declared or initialized.*

**What type of error is it?** Logic error

**How did you fix it?**

We add the int variable userNumber1AsInt

**Error #3**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

*Line 50 it was trying to redeclare a variable that was already declared*

**What type of error is it?** Syntax Error

**How did you fix it?**

Got rid of the data type in front of userAngleAsString.

**Error #4**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

*Line 58 was try to use the variable sineOfAngle but it was never declared or defined.*

**What type of error is it?** Logic Error

**How did you fix it?**

We declared and initialized the variable so it was useable.

**Error #5**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

*Line 78*

**What type of error is it?**

**How did you fix it?**

**Error #6**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

*Line 16*

**What type of error is it?**

**How did you fix it?**

**Error #7**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

*60*

**What type of error is it?**

**How did you fix it?**

**Error #8**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

**What type of error is it?**

**How did you fix it?**

**Error #9**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

**What type of error is it?**

**How did you fix it?**

**Error #10**

**What is the error?** *Note: Add a screenshot of the Locals window, or describe the steps you took to figure out why the error occurred.*

**What type of error is it?**

**How did you fix it?**