

## Step 1: Alternative Tools Research

At the beginning of this unit, you used DevOps tools for Continuous Integration and for Real Time Error Monitoring. A big part of working in software is being able to learn about new tools, weigh their different features, and figure out how to get started. So, for this part of the assignment, pretend that you are a DevOps engineer at a company that is trying to learn about possible new tools to use for CI and Monitoring.

1. Do some internet research and find two new tools to explore— one for Continuous Integration, and one for Real Time Error Monitoring. You cannot use the ones you used earlier this week.

*Continuous Integration: TeamCity*

*Real Time Error Monitoring: Sentry*

2. Start a new document (Google Docs or similar) and record the unique value-add, or notable features for each tool. Imagine you were an engineer trying to convince your manager to use each tool. What would you say to convince them?

### **TeamCity**

- Automate code analyzing, compiling, and testing processes, with having instant feedback on build progress, problems, and test failures, all in a simple, intuitive web-interface
- Simplified setup: create projects from just a VCS repository URL
- Run multiple builds and tests under different configurations and platforms simultaneously
- Optimize the code integration cycle and be sure you never get broken code in repo
- Review on the fly test result reporting with intelligent tests reordering

### **Sentry**

- Collect and aggregate errors from a number of platforms, languages and frameworks
- Host an error monitoring solution on-premise or in a private cloud
- Embed requests for end user feedback into your application
- *Sentry is simple to use and gives a good overview of bugs and errors in projects. It will immediately alert you, which is important in time critical projects*

3. For each tool, find the Getting Started instructions for how to begin using the tool. Evaluate the quality of these instructions. Is there an easy way to get started with the tool? Is the process well-documented? Are there any special tutorials or sandboxes available to make trying it out or learning the tool easier? Include a summary of how to get started with the tool, helpful links, and any other notable resources for this process.

## TeamCity

- They have the “Getting Start with TeamCity” instruction : before you start, learn about CI with Teamcity, Install and start TeamCity, and run your first build. Therefore, Teamcity has really clear instructions.
- You have to download Teamcity after clicking “ Get TeamCity” button, then open it in the download folder
- Also, TeamCity has the troubleshooting section include “Known Issues and Common Problem”, “Teamcity forum”, “TeamCity’s issue Tracker”, and “Contact Us”
- <https://www.youtube.com/watch?v=zqi4fDF-S60> ⇐ TeamCity tutorial

## Sentry

- After clicking “ Get Started” button, I have to create account or sign up with Google, Github account
- Also, it has “Sentry resource library” include video, best practice, workflow, webinar to instruct
- Sentry has a sandbox.
- <https://sentry.io/resources/?tags=PDF> ⇐ Sentry tutorial

4. How long has this tool been around? How popular is it? Summarize the maturity and market share of each tool. To answer these questions, check out any public official Github repos for the tool (are they in active development? what is the date of the earliest commit?), the tool’s public website for any notable mentions of current companies that use the tool, and any other information that will help you determine if each tool is compelling to other companies and how new it is.

**TeamCity** is a build management and continuous integration server from JetBrains. It was first released on October 2, 2006 and is commercial software and licensed under a proprietary license: a freemium license for up to 100 build configurations and three free Build Agent licenses are available.

**Sentry**’s platform helps developers diagnose, fix, and optimize the performance of their code. Sentry is the world’s most widely used error tracking tool used by over 1 million developers across 70,000 organizations. Sentry started out as an open-source project. Our founders’ goal was straightforward: solve their own problems with an easy way to fix their own mistakes. Ten years later, their two person passion project is the world’s leading error-tracking platform with 130 employees in three offices worldwide.

## Step 2:

	tinyArray	smallArray	mediumArray	largeArray	extraLargeArray
insert	41.088 $\mu$ s	52.28 $\mu$ s	177.243 $\mu$ s	6.480354 ms	873.38785 ms
append	110.457 $\mu$ s	131.641 $\mu$ s	174.725 $\mu$ s	552.952 $\mu$ s	4.156552 ms
getSizeArray	10	100	1000	10000	100000
Time complexity	Linear O(n)	Linear O(n)	Linear O(n)	Linear O(n)	Linear O(n)

The insert and append result increase up , and it depends on the array size being inputted. Insert function scales better because the insert's result is smaller than the append's result.