PART 1:

Continuous Integration Tool: Codefresh

- https://codefresh.io/

- It is purpose-built to integrate really tightly with Docker and Kubernetes (a service similar to Docker). So if you are wanting to serve up your web app through a Docker container model it makes it easier to do so.

- First you must click the documentation tab on the home page, once you do that you will click Get Started, you will then be at this page: https://codefresh.io/docs/docs/getting-started/create-a-codefresh-account/.
  When reading it I believe there is an easy way to get started and using this tool, it is well documented and they provide a link where you can schedule a time to receive a full demo of Codefresh to better understand and use it to its full extent.

- Codefresh began in 2014, Codefresh is widely popular and is used in quite a lot of tech companies. Codefresh maturity is good and continues to grow as their company and product becomes more popular. Their current market share in the CI market is 0.20%. When looking on GitHub the are in active development and repos go starting from 2014 to up to 5 hours ago present day.

Real Time Error Monitoring: Dynatrace

- https://www.dynatrace.com/

- Dynatrace monitors your whole environment top to bottom, they do it all in context, with a single solution, common data model and one agent. It's easy to use and provides deeper insight to the answers. Able to adapt and automate the internal services.

- Also under documentation, you will find their get started. Not going to lie, I couldn't find it so I searched for it and it showed up. Here is the get started link: https://www.dynatrace.com/support/help/get-started/. Reading over it does seem to be a little difficult to get everything set up and do believe there is an easier way to set it up. It is very well documented with examples, videos, and resources to help you get it setup. Something special is that you can request a demo of dynatrace to help you understand if this will be best for you and to help you understand how to use it.

- Dynatrace began in 2005, Dynatrace has over 8,000 customers and continues to grow popular in the tech industry. Dynatrace maturity is also good and they have been in service for over a decade and their company continues to grow. Their current market share is 8.8% and $381.7 million in revenue. Also looking at github I did not see anything

older than 2014. There are active deployments and the most recent one was updated about an hour ago.

PART 2:

First run the results for extraLargeArray
Insert: 1.222851689 s
Append 5.902593 ms

You can see above that the Append is faster in time.

I was able to edit the code and see the runtimes for the rest of the arrays, and the pattern I saw was the smaller the array the faster the runtime was and it started to go run in microseconds as I did the smaller arrays. Each scale is going pretty fast. I can tell that the append function is the better of the two scales when looking at append and insert next to each other you can see that it takes less time for the append than it does for the insert function.

Extra Credit Question: Looking at the two functions you can see they are almost identical except for the fact that doublerAppend uses .push and doublerInsert is using .unshift.

- .unshift is a slower method than push because if using .unshift you need to unshift all of the elements to the left giving them a new index, once the first element has been added causing it to slow the speed. Push adds the element to the end not needing to move the index of the other elements in the array causing it to be a faster process