Software Testing

Lab Assignment 3: JMeter Performance Test

> **[NOTE]:** Due to "Mercury Tours" low stress tolerance, coupled with the large number of other testers sending 161~ requests per test run; prevented multiple test runs of the samplers. Leaving the aggregation report limited to the data collated by 1 successful test run. However, this run did provide data for every sampler for every thread group

Sampler request variation

It is evident from the aggregate report that requests that involve further activity, such as inputting data or processing data, take a longer time to complete. For example, sampler 1, responsible for loading the homepage of "Mercury Tours", had a minimum request completion of 325 milliseconds for a single user. Juxtaposing that, is sampler 10, responsible for loading the "Selecting Flights" page and processing the inputted data from the previous "Flight Details" page; the minimum requestion completion time was 521 milliseconds. Furthermore, the maximum request completion time for a single user loading the homepage was 466. This highlights that longest time taken for loading a page is incomparable to a request that must read and process input data.

Throughput

In contrast, the through put on samplers improves when the requests include input data and data processing. This contrast may exist because the request itself is time consuming due to the increased number of tasks needed to be done, but it does not affect the number of requests able to be sent. To illustrate this point, as stated before the maximum request time for sampler 1 was still far lower than the minimum of sampler 10, however their throughputs are 10.6/min and 11/min respectively (for 1 user). A marginal difference that could be attributed to a random act of chance.

Test Groups

Sending 1, 10, 50 or 100 users had a large increase on the time taken (min and max) of each request and had drastic affect on the throughput average (per second and per minute). For example, for most samplers, when the user count was doubled, so did the request time. This is most likely do to the fact that higher traffic of users on a low stress tolerant site resulted in congestion. This can be equated to the number of cars on a highway, a relatively small increase in vehicles can drastically increase the wait time to escape the traffic.

As for throughput, like the request time, the "Mercury Tours" website cannot take many users in such a small window that the tread groups were set to. This resulted in large drops in throughput as more users were sent. This can be highlighted by sampler 11, where the throughput was 11.3/min for a single user and 1.8 for 100 users. As stated previously, the website can only handle so many users at a time. If 100 people are trying to fit through a 1-man doorway, only so many can get through within the span of a second or a minute.