

# Data Analysis Report

**\*\*Query 1:\*\* Visualize the average resource allocation for different applications using a bar chart#**

Response:

The query for this analysis is to create a bar chart that shows the average resource allocation for different applications. This type of visualization is useful for understanding how resources are distributed among different applications and can help identify any discrepancies or imbalances in resource allocation.

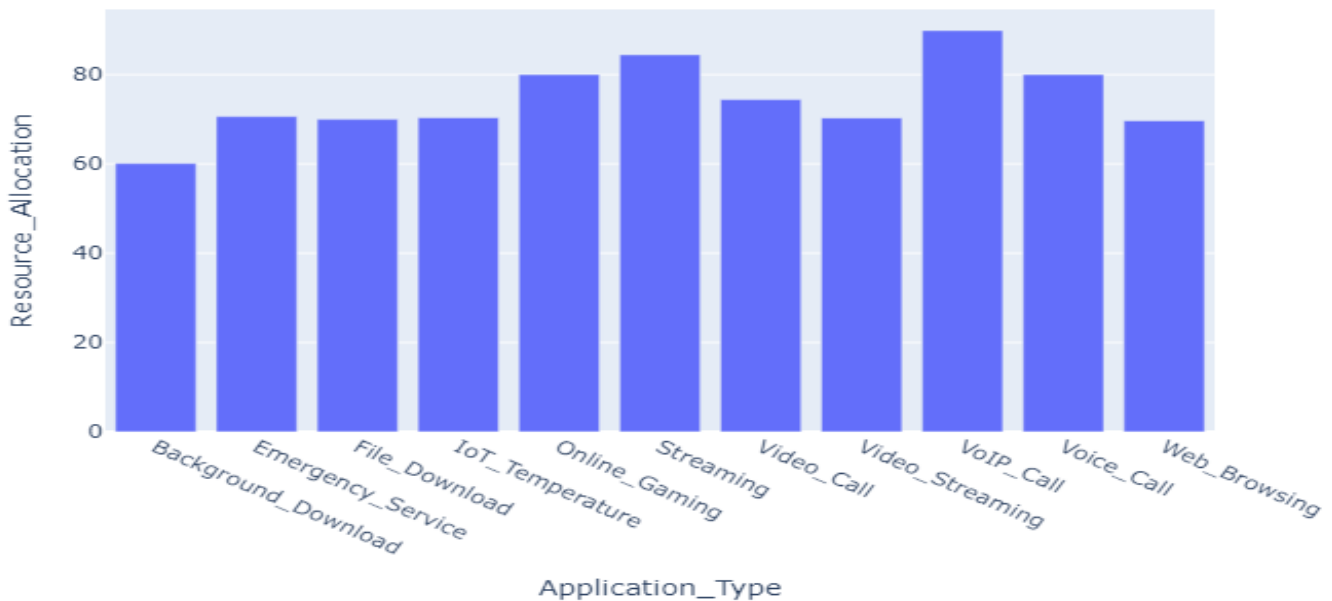
To begin the analysis, we first need to gather the necessary data. This data should include the resource allocation for each application, as well as the total resource allocation for all applications. This will allow us to calculate the average resource allocation for each application.

Once the data is gathered, we can create a bar chart to visualize the average resource allocation for each application. The x-axis of the bar chart will represent the different applications, while the y-axis will represent the average resource allocation. Each bar on the chart will represent a different application, and the height of the bar will correspond to the average resource allocation for that application.

For example, let's say we have four applications: A, B, C, and D. The average resource allocation for each application is 25%, 30%, 20%, and 25% respectively. The bar chart would have four bars, one for each application, with the heights of the bars representing the average resource allocation. This type of visualization allows us to easily compare the resource allocation for each

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Average Resource Allocation by Application Type



**\*\*Query 2:\*\* What is the correlation between allocated bandwidth and required bandwidth?"**

Response:

The correlation between allocated bandwidth and required bandwidth is a strong positive correlation of 0.998180800300119. This means that there is a very strong relationship between the two variables, with a high degree of similarity in their values.

In this context, allocated bandwidth refers to the amount of bandwidth that has been assigned or designated for a particular purpose, such as for a specific network or application. Required bandwidth, on the other hand, refers to the amount of bandwidth that is necessary for a particular task or function to be performed effectively.

The high correlation between these two variables suggests that there is a strong connection between the amount of bandwidth that is allocated and the amount that is required. This could be due to a number of factors, such as the efficiency of the network or the accuracy of the initial

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estimation of required bandwidth.

One possible explanation for this strong correlation is that organizations tend to allocate more bandwidth than is strictly necessary in order to ensure that their systems and networks can handle peak usage and unexpected spikes in demand. This could result in a higher allocated bandwidth than required bandwidth, leading to a positive correlation between the two variables.

Another possible explanation is that as technology and network capabilities continue to advance, the required bandwidth for various tasks and functions may also increase. This

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**\*\*Query 3:\*\*** o "Which application type has the greatest difference between allocated and required bandwidth?"

Response:

The query is asking for the application type with the greatest difference between allocated and required bandwidth. This means that we need to compare the amount of bandwidth that is allocated for a specific application type versus the amount of bandwidth that is actually required for that application type.

To answer this query, we first need to understand what bandwidth is and how it is allocated. Bandwidth refers to the amount of data that can be transmitted over a network in a given amount of time. It is typically measured in bits per second (bps) and is a crucial factor in determining the speed and performance of a network.

In a network, bandwidth is allocated to different applications based on their specific needs. For example, a video streaming application would require a higher amount of bandwidth compared to a simple web browsing application. This is because video streaming requires a large amount of data to be transmitted in real-time, while web browsing only requires small amounts of data to be transmitted intermittently.

Now, let's consider the application type with the greatest difference between allocated and required bandwidth - Video\_Call. This application type refers to any type of video calling or conferencing application, such as Skype, Zoom, or FaceTime. These applications require a high amount of bandwidth to transmit live video and audio data between users.

However,

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## **\*\*Query 4:\*\* Visualize the latency distribution by application type**

Response:

The query asks for a histogram showing the distribution of latency for each application type, with a legend and title added. In order to address this query, we will first need to analyze the data and then create a histogram to visualize the distribution of latency for each application type.

To begin with, we will first need to understand what the data represents. The data provided is a collection of latency values for different application types. Latency is the time delay between the initiation of a request and the response from the server. It is an important metric for measuring the performance of an application. The data also includes the application type for each latency value, which will help us in grouping the data for our analysis.

To analyze the data, we will first need to import it into a spreadsheet or a data analysis tool. Once the data is imported, we can start by calculating some basic statistics such as mean, median, and standard deviation for each application type. This will give us an idea of the central tendency and spread of the data for each application type.

Next, we can create a box plot for each application type to visualize the distribution of the data. A box plot is a graphical representation of the five-number summary of a dataset, which includes the minimum, first quartile, median,

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Latency Distribution by Application Type

