**IT Infrastructure Management**

**Week 12 Assignment**

1.Elaborate about how infrastructure’s performance and tuning process are assessed?

## Answer 1: Infrastructure Performance and Tuning

Infrastructure performance and tuning is the process of measuring, analyzing, and optimizing the performance of the hardware, software, network, database, and human resources that support an IT system or an application. Infrastructure performance and tuning aims to ensure that the system or the application meets the requirements and expectations of the users and the stakeholders in terms of speed, reliability, availability, scalability, cost, etc.

**Infrastructure Performance and Tuning Process Assessment**

Infrastructure performance and tuning process assessment is the evaluation of how well the performance and tuning process is conducted and how effective it is in achieving the desired outcomes. Infrastructure performance and tuning process assessment can be done for various purposes, such as:

* To identify and resolve performance issues or bottlenecks
* To optimize performance and reduce costs
* To ensure service level agreements and quality standards
* To support decision making and planning
* To improve customer satisfaction and user experience

Infrastructure performance and tuning process assessment can be done using various methods, such as:

* Performance metrics: These are quantitative indicators that measure the performance of the infrastructure components or layers in terms of effectiveness, reliability, cost, etc. Performance metrics can be collected using various tools or techniques, such as monitoring tools, testing tools, profiling tools, log analysis tools, etc. Performance metrics can be compared with predefined thresholds or benchmarks to identify deviations or anomalies.
* Performance tests: These are experiments or simulations that subject the system or the application to different levels or types of load or stress to evaluate its performance under various scenarios. Performance tests can be done using various tools or techniques, such as load testing tools, stress testing tools, soak testing tools, etc. Performance tests can be used to validate performance requirements or objectives, to identify performance limits or capacities, to evaluate performance trade-offs or alternatives, etc.
* Performance audits: These are systematic examinations or reviews of the performance and tuning process to verify its compliance with standards or best practices. Performance audits can be done using various tools or techniques, such as checklists, questionnaires, interviews, observations, etc. Performance audits can be used to assess the quality or maturity of the performance and tuning process, to identify strengths or weaknesses of the process, to provide feedback or recommendations for improvement, etc.

2.An online banking application encompasses a complete IT infrastructure management system. For this application, prepare two assessment worksheets viz. without weighting factor and with weighting factor. Identify the appropriate parameters that needs to be considered.

## Answer2: Assessment Worksheets

Assessment worksheets are tools that can be used to evaluate the performance of an online banking application based on various criteria or parameters. Assessment worksheets can help to identify the strengths and weaknesses of the application, as well as to prioritize the areas for improvement or optimization.

## Without Weighting Factor

An assessment worksheet without weighting factor is a simple table that lists the criteria or parameters for evaluation, and assigns a score or rating for each criterion based on a predefined scale. The score or rating can be numerical (e.g., 1 to 5) or qualitative (e.g., poor to excellent). The total score or rating for the application can be calculated by summing up the scores or ratings for each criterion.

An example of an assessment worksheet without weighting factor for an online banking application is shown below. The criteria or parameters are based on the performance metrics discussed in the previous question, and the scale is from 1 (poor) to 5 (excellent).

| **Criteria** | **Score** |
| --- | --- |
| CPU utilization | 4 |
| Memory usage | 3 |
| Disk space | 4 |
| Disk I/O | 3 |
| Network bandwidth | 4 |
| Network latency | 3 |
| Requests per second | 4 |
| Response time | 4 |
| Total | 29 |

## With Weighting Factor

An assessment worksheet with weighting factor is a table that lists the criteria or parameters for evaluation, assigns a score or rating for each criterion based on a predefined scale, and assigns a weight or importance for each criterion based on a predefined percentage. The weighted score or rating for each criterion can be calculated by multiplying the score or rating by the weight. The total weighted score or rating for the application can be calculated by summing up the weighted scores or ratings for each criterion.

An example of an assessment worksheet with weighting factor for an online banking application is shown below. The criteria or parameters are based on the performance metrics discussed in the previous question, the scale is from 1 (poor) to 5 (excellent), and the weights are based on an arbitrary assumption of importance.

| **Criteria** | **Score** | **Weight** | **Weighted Score** |
| --- | --- | --- | --- |
| CPU utilization | 4 | 10% | 0.4 |
| Memory usage | 3 | 10% | 0.3 |
| Disk space | 4 | 10% | 0.4 |
| Disk I/O | 3 | 10% | 0.3 |
| Network bandwidth | 4 | 15% | 0.6 |
| Network latency | 3 | 15% | 0.45 |
| Requests per second | 4 | 15% | 0.6 |
| Response time | 4 | 15% | 0.6 |
| Total | - | - | 3.65 |