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BSIT 4-2

Activity
System Administration and Maintenance

Given the following job positions, provide their duties before, during, and after every system deployment.

1. Software Engineer/Programmer:

Before:
- Include in the discussion about the system requirements with stakeholders to better understand and collaborate with the standards they are trying to impose with the system.
- Design and produce the software components/modules for the system.
- Write code and conduct thorough testing (unit testing) of the developed code which qualifies to the standards given from the planning stage.
- Ensure code quality and adherence to coding standards.

During:
- Collaborate with other team members for integration and system testing.
- Identify and fix any bugs or issues found during testing and quality check by the system QA.
- Work closely with quality assurance analysts to verify software functionality and overall performance of the system framework and mechanism.

After:
- Provide firm support deployment activities by ensuring a smooth transition and addressing any post-deployment issues.
- Be present during the ongoing maintenance and support of the software.
- Collaborate with the team for future updates and enhancements of the system.

2. Quality Assurance Analyst:

Before:
- Participate in requirement analysis to understand system functionality and consider the standards that will be used during the testing phase.
- Develop test plans and test cases based on system requirements accordingly.
- Create and set up testing environments for the system.

During:
- Execute test cases and document results to report.
- Identify and report defects to the development team for easy remodification of the system faults and loopholes.
- Collaborate closely with developers to ensure issues are resolved timely as it is deployed for system users.

After:

- Perform regression testing to ensure new features do not impact existing functionality.
- Document test results for future reference and backtracking in general system documentation.
- Contribute to the improvement of testing processes since they are the secondary test user of the software.

3. Business Analyst:

Before:
- Gather and document business requirements with the stakeholders to strictly identify the requisites of the software.
- Analyze and define system features and functionalities according to the methodology the team will apply for the rest of the development phase.
- Collaborate with stakeholders to ensure alignment between business goals and system capabilities.

During:
- Act as a liaison between business stakeholders and the development team for smooth communication in all contributing aspects for a successful software development team.
- Clarify requirements and address any questions or concerns from all participating team members.
- Participate in testing to validate that the developed system meets business needs.

After:
- Evaluate and qualify the system's performance against initial business requirements.
- Gather feedback from end-users to identify areas for improvement.
- Contribute insights for future system enhancements.

4. Database Administrator:

Before:
- Design and implement the database structure based on system requirements.
- Optimize database performance which involves creating databases, safely providing colleagues access to the database, troubleshooting issues, conducting capacity planning, and ensuring data integrity.
- Plan for data backup and recovery procedures in the event of system update failure or any setbacks during the development of the software.

During:
- Primarily monitor and tune database performance during system testing.
- Collaborate with other team members to ensure data consistency throughout the deployment process.
- Implement necessary database changes based on system updates.

After:
- Implement data migration strategies during deployment.

- Monitor and optimize database performance in the production environment to ensure seamless use of the system for all users.
- Address any issues related to data storage, access, or overall security for all system end-users especially account privacy hashing.

5. System Administrator:

Before:
- Set up the appropriate configuration for server environments for the system.
- Ensure proper network configurations and security measures required by the software.
- Plan for system backups and recovery procedures in case of system failures.

During:
- Monitor system performance during testing and deployment.
- Collaborate with other administrators to address network or infrastructure issues.
- Ensure system security measures are in place.

After:
- Monitor system performance in the production environment.
- Implement updates and patches to maintain system security.
- Provide ongoing support for system-related issues.

6. Project Manager:

Before:
- Create a roadmap for the project to guide the team through its various stages which includes the identification of project scope, objectives, and deliverables.
- Ensure that the necessary resources are available, and team members understand their roles by defining roles and responsibilities for each team member and establishing communication channels and reporting structures.
- Set clear expectations with project stakeholders to align everyone on project goals and establish regular communication channels to provide updates and gather feedback.

During:
- Keep the project on track by identifying and resolving issues in real-time by regularly tracking and monitoring the progress of tasks.
- Foster teamwork and ensure that each team member is meeting their deadlines.
- Provide support and resources as needed to overcome obstacles.
- Communicate with stakeholders and provide regular updates on milestones achieved.
- Address concerns or queries from stakeholders promptly

After:
- Evaluate the success of the project against initial goals and also assess whether the project achieved its intended objectives.
- Conduct a post-implementation review to identify areas for improvement by which gathered feedback from team members and stakeholders.

- Learn from the project experience to enhance future projects.
- Capture insights and knowledge gained during the project for future reference.
- Share insights with relevant stakeholders to improve future project management processes

7. Cloud Engineer:

Before:

- Define the structure and components of the cloud environment to meet the system's requirements and design a scalable and resilient cloud infrastructure.
- Implement the planned cloud infrastructure based on the design with the provision of virtual machines, storage, databases, and other cloud resources.
- Design the cloud infrastructure to handle varying workloads, ensure system reliability, and implement auto-scaling configurations for dynamic resource allocation.

During:

- Assess the performance of the cloud infrastructure under various conditions by monitoring cloud infrastructure performance during testing and deployment.
- Maximize resource utilization and minimize cost with optimized cloud resources for cost efficiency.
- Work with cross-functional teams to resolve issues and ensure seamless cloud operations by collaborating with other team members to address any cloud-related issues.

After:

- Continuously monitor and maintain the health and performance of the cloud environment, and Ensure that the cloud environment meets service level agreements (SLAs).
- Implement updates and security measures in the cloud environment by applying software updates, patches, and security configurations, conducting regular security audits, and vulnerability assessments, and implementing best practices for data encryption and access control.
- Anticipate and accommodate changes in system requirements by adjusting the cloud architecture for scaling or modifying the cloud architecture based on system growth.