

School of Computer Science and Information Technology

Department of CS & IT

Program : BCA  
Semester : VI

Specialization: CTIS

**SUBJECT NAME: IT Infrastructure Library**

Activity #1

**Certification Course’s**

Date of Submission: 24-12-2022   
Submitted by:-

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USN No: 20BCAR0116

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EVALUATION CRITERIA

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| Report  (A)  25 M | Viva voce  (B)  10 M | On time Submission  (C)  5M | Creativity & additional hours spent  (D)  10 M | Total  E=A+B+C+D  50M | Converted  (E) into  5M |
| Course Details - /15  Certification- /10  Total - /25 |  |  |  |  |  |

This is to certify that Mr. SIDHARTH M has satisfactorily completed the course of assignment prescribed by the Jain Deemed to be University for the SIXTH semester BCA Degree Course in the year 2022-2023.

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Signature of the faculty

In-charge

INDEX

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| 3 | IT SERVICE MANAGEMENT FOUNDATIONS: PROBLEM MANAGEMENT -1HR 33M |
| 4 | IT SERVICE DESK: MONITORING AND METRICS FUNDAMENTALS -58M |
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REPORT EXPLANATION

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| Sl. No. | 1 |
| Course Name | Learning ITIL |
| Certificate Attachment |  |
| Course Details | In this course I have came to  Know about the,  Purpose of ITIL 4 Foundation: The purpose of this training is to introduce learners to the management of modern IT-enabled services.  Technology development: Some of these developments include:  • Cloud computing  • Infrastructure as a service  • Machine learning  • Block chain  ITIL 4 framework Consists of the following key concepts:  • Service Value System (SVS)  • Four Dimensions Model  Core components of SVS The core components of the ITIL SVS are:  • ITIL service value chain  • ITIL practices  • ITIL guiding principles  • Governance  • Continual improvement  Four dimensions of service management  The four dimensions are:  1. Organizations and people  2. Information and technology  3. Partners and suppliers  4. Value streams and processes  Business Relationship: Manager (BRM)  A role responsible for maintaining good relationships with one or more  customers.  Cost: The amount of money spent on a specific activity or resource.  Customer: A person who defines the requirements for a service and takes responsibility for the outcomes of service consumption.  Organization: A person or a group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives.  Organizations vary in size and complexity, and in their relation to legal entities,  from a single person or a team, to a complex network of legal entities united by  common objectives, relationships and authorities.  Outcome: A result for a stakeholder enabled by one or more outputs.  Product: A configuration of an organization’s resources designed to offer value for a consumer.  Risk: A possible event that could cause harm or loss, or make it more difficult to  achieve objectives. Risk can also be defined as uncertainty of outcome, and can  be used in the context of measuring the probability of positive outcomes as well  as negative outcomes.  Service: A means of enabling value co-creation by facilitating outcomes that customers want to achieve, without the customer having to manage specific costs and risks.  Service Consumption: Activities performed by an organization to consume services. It includes the management of the consumer’s resources needed to use the service, service actions performed by users, and the receiving (acquiring) of goods.  Service Management: A set of specialized organizational capabilities for enabling value for customers in the form of services. |
| Course.Link | <https://www.linkedin.com/learning/learning-itil> |
| No. of Hours | (1h 19m) |

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| Sl. No. | 2 |
| Course Name | Putting ITIL Into Practice: Applying ITIL 3 Foundation Concepts |
| Certificate Attachment |  |
| Course Details | In this course I have came to Know about the,   * Putting ITIL Into Practice series is designed to help ITIL Foundation-certified professionals apply the concepts they have learned. * It offers a fresh, agile, and directly applicable approach to help individuals, teams, and organizations apply ITIL. * This course introduces the Seven Ways framework for applying the seven key ITIL Foundation concepts. * ITIL promotes a much more “joined up”, “end-to-end “approach to IT service management replacing the ‘technology silos’ and isolated ‘islands of excellence’. * The focus of IT management has been changing for some time and in the future management will be even less focused on technology and still more integrated with the overall needs of the business management and processes. New management systems are already starting to evolve and will continue to evolve over the next few years. This development will accelerate, as the management standards for the exchange of management information between tools become more fully defined.   7-Step Improvement Process:   * The 7-step improvement process covers the steps required to collect meaningful data, analyze this data to identify trends and issues, present the information to management for their prioritization and agreement, and implement improvements.   They are:   1. Define what you should measure 2. Define what you can measure 3. Gather the data 4. Process the data 5. Analyze the data 6. Present and use the Information 7. Implement corrective action   Important concepts of service management:  The most important concepts of service management, include:  • The nature of value and value co-creation  • organizations, service providers, service consumers and other  stakeholders  • products and services  • service relationships  • value: outcomes, costs and risks  What is Service Management?  Service Management is a set of specialized organizational capabilities for  enabling value for customers in the form of services.  Value Is a key focus of ITIL 4:  Value is the perceived benefits, usefulness and importance of something. |
| Course Link | <https://www.linkedin.com/learning/putting-itil-into-practice-applying-itil-3-foundation-concepts> |
| No. of Hours | (2h 12 m) |

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| Sl. No. | 3 |
| Course Name | IT Service Management Foundations: Problem Management |
| Certificate Attachment |  |
| Course Details | In this course I learned about How the problem management is do in ITIL,  Problem Management Process:   * A problem is a cause of one or more incidents. The cause is not usually known at the time a problem record is created, and theproblem management process is responsible for further investigation. * The key objectives of Problem Management are to prevent problems and resulting incidents from happening, to eliminate recurring incidents and to minimize the impact of incidents that cannot be prevented. * Problem Management includes diagnosing causes of incidents, determining the resolution, and ensuring that the resolution is implemented. * Problem Management also maintains information about problems and the appropriate workarounds and resolutions.   Problem Categorization and Prioritization :  In order to adequately determine if SLA’s are met, it will be necessary to correctly categorize and prioritize problems quickly.  Categorization:  The goals of proper categorization are:   * Identify Service impacted * Associate problems with related incidents * Indicate what support groups need to be involved * Provide meaningful metrics on system reliability   **Priority Determination:**   * The priority given to a problem that will determine how quickly it is scheduled for resolution will be set depending upon a combination of the related incidents’ severity and impact.   Problem Policy:   * The Problem Management process should be followed to find and correct the root cause of significant or recurring incidents. * Problems should be prioritized based upon the severity and impact to the customer and the availability of a workaround.   Rules for re-opening problems:   * Despite all adequate care, there will be occasions when problems recur even though they have been formally closed. * If the related incidents continue to occur under the same conditions, the problem case should be reopened. If similar incidents occur but the conditions are not the same, a new problem should be opened. * Workarounds should be in conformance with IT Enterprise standards and policies. |
| Course Link | <https://www.linkedin.com/learning/it-service-management-foundations-problem-management> |
| No. of Hours | (1h 33m) |

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| Sl. No. | 4 |
| Course Name | IT Service Desk: Monitoring and Metrics Fundamentals |
| Certificate Attachment |  |
| Course Details | In this course I came to know about,  IT Service Desk: Monitoring and Metrics Fundamentals:   * An IT service desk is an integral part of an organization’s IT operations. * It is relevant for entities of all sizes, and plays a key role in making sure that IT services meet key business objectives. * In an organization, a service desk acts as a catalyst for digital transformation, which is a major trend affecting almost every industry.   Also objectives like:   * Avoiding common mistakes when gathering data * Leveraging reporting and metrics * Outcomes for monitoring * Determining which metrics to monitor * The role of service level agreements * Selecting reporting tools * Baseline reporting   how to kill good data?   * The quickest and easiest way to guarantee garbage data is to offer analysts and users alike the choice of options, such as other or miscellaneous. Here's why it's important to avoid those values. * Analysts have a lot of work on their plate in a day. Many have phone lines ringing nonstop during the day. Others might have long complicated calls that take considerable time to resolve. * The last thing a service analyst wants to think about is categorizing tickets into exactly the right classification so management can get more accurate reporting. If any drop-down categorization list contains an option of other or miscellaneous, then this is the easiest and simplest option for them to be able to select and move on to the next piece of work that is coming their way. Similar reasoning goes for end users. * They just want to log their call and get an answer. What category or value is selected to get a job logged is of no consequence to them. Again, if a drop down box categorization list contains an option for other or miscellaneous, then this is the easiest and simplest option for them and the most likely to be chosen. * If other or miscellaneous is an option, then users and analysts alike will select it. If even a small percentage of people select these options, all the data collected can be considered as contaminated and therefore statistically useless for any meaningful reporting.   A service desk is a subset of ITSM that includes:   * + Incident management   + Problem Management   + Change Management   + Knowledge Management   + Self-service   + Service Requests   + Integration with a CMDB |
| Course Link | <https://www.linkedin.com/learning/it-service-desk-monitoring-and-metrics-fundamentals> |
| No. of Hours | 58m |

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| Sl. No. | 5 |
| Course Name | IT Service Management: ISO20000 |
| Certificate Attachment |  |
| Course Details | In this course I came to know about,  What is ISO 20000?   * ISO/IEC 20000, often referred to simply as ISO 20000, is the international IT Service Management standard that enables IT organisations (whether in-house, outsourced or external) to ensure that their IT service management processes are aligned both with the needs of the business and with international best practice. * ISO/IEC 20000 helps organisations benchmark how they deliver managed services, measure service levels, and assess their performance. It is broadly aligned with, and draws strongly on, ITIL   Benefits of ISO 20000:   * ISO 20000 can assist your organisation in benchmarking its IT service management, improving its services, demonstrating an ability to meet customer requirements and creating a framework for an independent assessment.   Some of the most common benefits of ISO 20000 certification for service providers are that it:   * offers competitive differentiation by demonstrating reliability and high quality of service; * gives access to key markets, as many organisations in the public sector mandate that their IT service providers demonstrate compliance with ISO/IEC 20000; * provides assurance to clients that their service requirements will be fulfilled; * enforces a measurable level of effectiveness and a culture of continual improvement by enabling service providers to monitor, measure and review their service management processes and services;   ISO 20000 Parts 1, 2, 3, 4 and 5:   * ISO 20000 has two main parts under the general title Information technology - Service management. They enable IT service providers to identify how to enhance the quality of service they deliver to their customers, both internally and externally. * Part 1: Specification (ISO/IEC 20000-1:2011) provides requirements for IT service management and is relevant to those responsible for initiating, implementing, or maintaining IT service management in their organization. It provides an SMS specification. * Part 2: Code of practice (ISO/IEC 20000-2:2012) describes the best practices for service management processes within the scope of ISO/IEC 20000-1. * ISO20000 uses a process-based approach for continual improvement. as conforming to the requirements of ISO/IEC 20000-1:2011.   The two mains parts of ISO 20000 are not clear on scoping.   * This is where ISO/IEC 20000-3:2012 comes in. ISO 20000-3 provides vital information on writing a scope for a service management system (SMS), as well as providing information on implementing an ISO/IEC 20000-1 SMS. ISO 20000-4 will help to develop a process assessment model according to ISO/IEC 15504 process assessment principles. * The final part of the ISO 20000 standard, ISO20000-5, provides an implementation plan for an SMS that meets the requirements of ISO/IEC 20000-1. |
| Course Link | <https://www.linkedin.com/learning/it-service-management-iso20000> |
| No. of Hours | 4h 50m |

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| Sl. No. | 6 |
| Course Name | ITIL® Foundation 4 First Look |
| Certificate Attachment |  |
| Course Details | In this course I came to know about,  **ITIL® V4 Framework**  ITIL 4 is a digital operating model that allows businesses to create effective value from IT-supported services and products. ITIL 4 builds on ITIL's decades of development, adapting known ITSM techniques to the larger contexts of digital transformation, customer experience, and value streams.  **The four pillars of ITIL Capability**   * ITIL Capability: Operational Support and Analysis. ... * ITIL Capability: Planning, Protection and Optimisation. ... * ITIL Capability: Release, Control and Validation. ... * ITIL Capability: Service Offerings and Agreements.   **ITIL®4: The Six Steps in the Path to Optimization**  **1.** Understanding and agreeing on the context in which the proposed optimization exists. This includes agreeing with the overall vision and objectives of the organization.  **2.** Assessing the current state of the proposed optimization to understand where it can be improved and which improvement opportunities are likely to produce the biggest positive impact.  **3.** Agreeing on what the future state and priorities of the organization should be, focusing on simplification and value. This typically also includes standardization of practices and services, which will make it easier to automate or optimize further at a later point.  **4.** Ensuring the optimization has the appropriate level of stakeholder engagement and commitment.  **5.** Executing the improvements in an iterative way, using metrics and other feedback to check progress, stay on track, and adjust the approach to the optimization as needed.  **6.** Continually monitoring the impact of optimization to identify opportunities to improve methods of working.  Optimization helps organizations maximize the value of work. It may not sound instantly as appealing or trendy as automation does but more organizations ought to dedicate the time and efforts required to reflect on how this can be done before getting distracted by the oh-so-shiny automation. Thankfully we have the six steps to guide us in that path.  **4 Functions of ITIL**  ITIL 4 includes the Four Dimensions of Service Management (rather than the Four P's of Service Design in ITIL v3/2011.) These include: Organizations and People; Information and Technology; Partners and Suppliers; and Value Streams and Processes.  **Two key ITIL 4 components**  The key components of the ITIL 4 framework are the ITIL service value system (SVS) and the four dimensions model.  What are ITIL 4 Best Practices?  **ITIL 4 Practices**  Change Enablement. The name was changed from "Change Management" to "Change Enablement". ...   * Continual Improvement. * Deployment Management. * Incident Management. * Knowledge Management. * Monitoring and Event Management. * Problem Management. * Release Management., etc., |
| Course Link | <https://www.linkedin.com/learning/itil-foundation-4-first-look> |
| No. of Hours | 40m |

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| Sl. No. | 7 |
| Course Name | Putting ITIL into practice devops for itil practitioners. |
| Certificate Attachment |  |
| Course Details | In this course I came to know about,  DevOps and ITIL are not mutually exclusive. They can be complementary approaches—each bringing its own benefits to the table. Agility and collaboration. Process and control.  **ITIL DevOps**  While DevOps is essentially a philosophy, a perspective on how to address the problems faced by development and operations teams (not) working together, ITIL is a codified system of information technology service management (ITSM) designed to better integrate IT with business needs and strategies.  DevOps  The practice of bridging the gap between development and operations. Its core principles are open communication, collaboration, and shared goals. As our experts explain: “Unlike frameworks like ITIL, there is no 'official' document of best practices for a DevOps team.  **Why ITIL is important for DevOps?** While DevOps is fast-moving and ever-changing, ITIL provides the stability, process, and control needed to ensure everything is getting done.  ITIL is a set of guidelines, not rules, that can be adapted to work within an organization's DevOps culture.  ITIL4 contains a lot of the core importance discovered in frameworks including Lean, Agile in DevOps.  Ideas such as covering value, raising collaboration and utilizing what ITIL4 defines as a four dimensions model make a holistic way to service administration.  ITSM is a crucial part of building and maintaining a platform for sound DevOps practices. As Ratcliffe put it, ITSM makes up one of the three major pillars of IT implementation: people, process, and technology.  "ITSM brings the processes, DevOps brings the automated technology, and they both bring people. ****ITIL + DevOps: Working Together**** ITIL being Service Management framework provides the support for products and services that are being built and deployed using DevOps practices. ITIL 4 has introduced 7 Guiding Principles as one of the components of Service Value System.  Here are the benefits of ITIL4 & DevOps which we can conclude from above:   1. Resolving issues in the proper way under structured framework leads to create fast solutions for complex problems. 2. We all know that ITIL4 is now aligned with Agile and DevOps now so we are sure can look forward to improved performance and increased efficiency of the overall business. 3. DevOps and ITIL 4 are mostly focused on how an organization creates value in or as a service and increases customer satisfaction with continuous improvement. 4. Improved productivity and continuous improvement complete the organizational objective which is getting faster Return on investments.   **Prevent incidents with ITIL and DevOps**  Combine the tried-and-true processes of incident management found in ITIL with the DevOps focus on automating review processes, conducting blameless postmortems, and taking a “you built it, you run it” approach and you've got a recipe for fewer and shorter incidents.  DevOps complements ITIL:   * Through improved communications and collaboration, a DevOps approach to ITIL can bring visibility and a greater appreciation to development teams of the challenges faced by service operations. * As a result, greater attention can be paid during development to assessing the impact of the new feature/functionality on existing IT support resources, capabilities and supporting infrastructure services. How these support servicesThe result is a service that not only features new and improved functionality. |
| Course Link | <https://www.linkedin.com/learning/putting-itil-into-practice-devops-for-itil-practitioners/welcome?autoplay=true&u=92695330> |
| No. of Hours | 40m |

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| Sl. No. | 8 |
| Course Name | Intro-to-service-management-with-itil-4 |
| Certificate Attachment |  |
| Course Details | In this course I came to know about,  Service management is a set of specialized organizational capabilities for enabling value for customers in the form of services. These capabilities include tangible things like capital, people, and equipment, and can also include intangible things like knowledge, management and skills.  **IT Service Management:**   helps all organizations, regardless of their industry or business sector, provide their IT services using the most efficient and economical methods. The ITIL® framework focuses on IT Service Management best practices and efficient operations, and is used in government, commercial, and non-profit organizations, alike.  This introduction to service management covers the core concepts of creating value, service offerings, service relationships, achieving outcomes, managing costs, mitigating risks, and measuring the utility and warranty of a given service.  **ITIL key concepts of service management**  The key ITIL concepts are: Deliver the maximum value to customers without requiring them to own unpredicted costs & risks. Deliver the maximum service value to customers. Optimize the use of 'resources' & 'capabilities.  **The 4 dimensions of service management ITIL**  The four dimensions are; Organization & People. Information & Technology. Partners & Suppliers.  **The service management practices in ITIL 4 include:**   * Business analysis * Service catalogue management * Service design * Service level management * Availability management * Capacity and performance management * Service continuity management * Monitoring and event management * Service desk * Incident management * Service request management * Problem management * Release management * Change enablement * Service validation and testing * Service configuration management * IT asset management   **The service management processes of ITIL**  There are 5 stages of ITIL lifecycle:   * Service Strategy. * Service Design. * Service Transition. * Service Operation. * Continual Service Improvement.   These stages are interlinked and are briefly covered in the Free ITIL Foundation Overview course. They form the perfect ITIL Service Management plan.  **The 4 Ps of Service Design**   * People. * Products. * Partners. * Processes.   **Relationship between ITIL and IT service management**  IT Service Management (ITSM) lets you manage services and handle requests from your customers, while the Information Technology Infrastructure Library (ITIL) is more of an overarching framework that lets your workflow become more effective. |
| Course Link | <https://www.linkedin.com/learning/intro-to-service-management-with-itil-4> |
| No. of Hours | 1hr 38 m |
| Sl. No. | 9 |
| Course Name | INTRODUCTION-TO-IT-ARCHITECTURE |
| Certificate Attachment |  |
| Course Details | **IT architecture:**  IT architecture is a series of principles, guidelines or rules used by an enterprise to direct the process of acquiring, building, modifying and interfacing IT resources throughout the enterprise.  **Type of IT Architect**   * Business-oriented. * Operations-oriented. * Developer-oriented. * Vendor-oriented.   **Role of architecture in IT**  An architecture helps an organization to analyze its current IT and identify areas where changes could lead to cost savings. For instance, the architecture may show that multiple data base systems could be changed so only one product is used, reducing software and support costs.  **Types of IT architecture**  You can apply the same principle in IT architecture, which is why we differentiate between three types of IT architecture:   * enterprise architecture. * solution architecture. * technology architecture.   **The 7 Pillars of IT Infrastructure**   * Hardware. Hardware refers to any IT component that you can touch. * Software. * Network. * Data Centre and Storage Facilities. * Virtual And Remote Assets. * Wireless And Wired Access. * Consulting and System Integration Services.   **IT architecture standards**  Standards include industry standards, implementation conventions, rules, and criteria that can be organized into profiles that govern solution elements for a given architecture. Architecture domain standards serve to ensure that a solution satisfies a specified set of requirements.  **IT architecture blueprint**  An IT blueprint is a planning tool or document that an information technology organization creates in order to guide its priorities, projects, budgets, staffing and other IT strategy-related initiatives.  **IT architecture plan**  It is a way of understanding an organization (or anything) at a fundamental level by understanding how its various stakeholders and their perspectives on a number of focal points (data, function, people, etc.) fit together to create the organization's IT architecture.  **Concept**  IT Architecture. IT architecture, as defined by UAM, is the description of the current or future structure and behavior of an organization's processes, information systems, personnel, and organizations, aligned with the organization's core business goals and strategic direction.  **The four C's of architectural analysis**   * Connection * Collaboration * Communication * Customers.   Simply put, the goal of Enterprise Architecture is to create one unified IT Environment across the firm or all business units |
| Course Link | <https://www.linkedin.com/learning/introduction-to-it-architecture> |
| No. of Hours | 1hr 59m |

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