**DIGITAL NURTURE 3.0**

**SERVICENOW WEEK-3**

**APPLICATION DEVELOPMENT FUNDAMENTALS**

**ServiceNow** is a cloud-based platform designed to streamline and automate IT services, enterprise operations, and workflows. It provides a powerful platform-as-a-service (PaaS) that supports building and deploying applications rapidly.

**1. Platform Overview**

* **ServiceNow** is widely used for **IT service management (ITSM)** but extends beyond IT into areas like HR, finance, and customer service.
* It provides a **low-code/no-code** development environment, making it accessible to developers of all skill levels to create applications without writing extensive code.

**2. Application Development Fundamentals**

* **ServiceNow Studio**: An integrated development environment (IDE) where developers create and modify applications.
* **Data Model**: Applications in ServiceNow are built around tables, and the platform provides tools to create and manage these tables, define fields, and configure relationships between data elements.
* **Forms and Lists**: You can design forms to interact with data in tables and create list views to display that data.
* **Business Logic**: Developers can implement business logic through workflows, business rules, and client-side scripts (such as Glide scripts).
* **User Interface (UI)**: ServiceNow provides tools to create custom user interfaces through **UI Pages** and **UI Actions**, making it possible to enhance user interaction.
* **Workflows and Automation**: The platform allows building workflows using **Flow Designer**, which is a visual drag-and-drop tool for automating tasks, approvals, and processes.
* **ServiceNow Scripting**: JavaScript is used heavily in ServiceNow to extend functionality, with Glide APIs offering platform-specific functionality to interact with data, users, and other components.
* **REST and SOAP APIs**: For integration with other systems, ServiceNow offers **REST** and **SOAP APIs**.

**3. Low-Code Development**

* **App Engine Studio**: ServiceNow provides a low-code tool, **App Engine Studio**, for creating applications. This allows developers to build and deploy applications with minimal code.
* **Templates and Blueprints**: There are built-in templates and blueprints for common application use cases, accelerating development.
* **Integration Hub**: A feature that allows users to automate integrations with third-party services and applications without heavy coding.

**4. Security and User Permissions**

* Role-based security ensures that users have appropriate access to data and application functionality.
* You can configure different levels of access for tables, records, and fields using Access Control Rules (ACLs).

**5. Mobile and Responsive Design**

* ServiceNow applications are responsive and can be used on desktop and mobile devices.
* It supports mobile app development, allowing for custom ServiceNow applications to be deployed across different devices.

**SERVICES OF SERVICENOW:**

ServiceNow offers a wide range of services designed to help organizations manage and automate various business processes. Here are some of the key **ServiceNow services** across different domains:

**1. IT Service Management (ITSM)**

* **Incident Management**: Helps track and resolve IT issues to restore normal operations quickly.
* **Problem Management**: Focuses on identifying and addressing the root cause of incidents to prevent recurring issues.
* **Change Management**: Provides a systematic approach to managing changes in IT infrastructure with minimal disruption.
* **Request Management**: Allows employees to request services, hardware, or software, automating fulfillment workflows.
* **Service Catalog**: A centralized repository of IT and business services available to employees and users.
* **Knowledge Management**: Centralizes documentation, solutions, and troubleshooting guides to help users find answers.

**2. IT Operations Management (ITOM)**

* **Event Management**: Monitors infrastructure for health, performance, and availability, helping to prevent service outages.
* **Cloud Management**: Enables organizations to manage and automate cloud services across multiple cloud providers.
* **Discovery**: Automatically detects and maps infrastructure, applications, and services across the organization.
* **Configuration Management Database (CMDB)**: Tracks and manages relationships between IT assets, applications, and services.

**3. IT Business Management (ITBM)**

* **Project Portfolio Management (PPM)**: Provides tools for planning, managing, and executing projects with real-time visibility into project performance.
* **Demand Management**: Helps capture and manage incoming requests for new services or projects, assessing their business value.
* **Resource Management**: Optimizes the allocation of resources, ensuring projects have the necessary personnel and assets.
* **Financial Management**: Assists with tracking IT expenses, budgeting, and aligning financials with IT services and investments.

**4. IT Asset Management (ITAM)**

* **Hardware Asset Management (HAM)**: Tracks the lifecycle of physical IT assets, such as laptops, servers, and other equipment.
* **Software Asset Management (SAM)**: Monitors software licenses and usage to ensure compliance and optimize license costs.

**5. Customer Service Management (CSM)**

* **Case Management**: Tracks and resolves customer issues, ensuring customer satisfaction and improving service quality.
* **Omni-Channel Support**: Allows customer service teams to engage with customers across various channels such as chat, phone, and email.
* **Field Service Management**: Manages mobile workforce operations, helping to dispatch and manage field service technicians.
* **Service Catalog for Customers**: Provides self-service options for customers, enabling them to request services or products directly.

**Steps to Get a Free ServiceNow Instance:**

**1. Sign Up for a ServiceNow Developer Account**

* Visit the official **ServiceNow Developer site**: developer.servicenow.com.
* Click on **Sign Up** if you don’t already have an account, or **Log In** if you have one.
* Fill out the registration form with your details, and follow the instructions to complete the registration.

**2. Request a Personal Developer Instance (PDI)**

* Once you are logged in, go to the **Dashboard** on the ServiceNow Developer site.
* On the left side menu, look for **Manage Instance**.
* Click on **Request Instance**. You will be able to choose the **ServiceNow release** (version) you want to use.
* The system will assign you a free personal developer instance, typically based on availability.

**3. Access and Use Your Instance**

* Once your instance is ready, you will receive a **URL**, **username**, and **password** to access it.
* Go to the instance URL provided to you, log in with the credentials, and you can start using your **ServiceNow PDI** for development, testing, and learning.

**4. Manage Your Instance**

* You can stop, reset, or upgrade your instance from the **Manage Instance** section in your developer dashboard.
* Be aware that PDIs are automatically reclaimed after 10 days of inactivity, so make sure to use it regularly to keep your instance active.

**HOW TO BECOME A SNOW DEVELOPER?**

Becoming a **ServiceNow (SNOW) developer** involves acquiring both technical skills and platform-specific knowledge. ServiceNow is a powerful platform with a focus on workflow automation, IT service management (ITSM), and enterprise application development. Here’s a step-by-step guide on how to become a ServiceNow developer:

**1. Understand the Role of a ServiceNow Developer**

* **ServiceNow developers** are responsible for building, customizing, and maintaining applications on the ServiceNow platform.
* They work on creating custom workflows, integrations, UI modifications, automation, and scripting (using JavaScript).

**2. Get Familiar with Core Technologies**

Before diving into ServiceNow, it’s helpful to have a foundation in relevant technologies:

* **JavaScript**: ServiceNow uses JavaScript for both client-side (UI) and server-side scripting (Business Rules, Script Includes).
* **HTML/CSS**: Basic knowledge of HTML and CSS helps in customizing user interfaces.
* **Databases/SQL**: Familiarity with database concepts and Structured Query Language (SQL) is useful, though ServiceNow has its own schema and query mechanisms.

**3. Sign Up for a Free ServiceNow Developer Account**

* Create a free account on the **ServiceNow Developer Portal**: developer.servicenow.com.
* Request a **Personal Developer Instance (PDI)**, which gives you admin access to your own ServiceNow environment to practice and experiment.

**4. Start Learning on the ServiceNow Developer Portal**

* **Training**: ServiceNow offers free online learning resources. Explore **ServiceNow Learning Plans** that are organized based on skill levels:
  + **Application Developer Learning Plan**: Focuses on building custom applications on ServiceNow.
  + **IT Service Management Learning Plan**: Helps you understand ServiceNow's core ITSM capabilities.
* **Hands-on Labs**: Complete the available labs for practice.
* **Guided App Creator**: Use the **App Engine Studio** or **Guided App Creator** for low-code development to quickly build apps without deep coding expertise.

The **Incident**, **Problem**, and **Change** modules are key components of **IT Service Management (ITSM)**. These modules help organizations manage incidents, problems, and changes systematically, ensuring efficient IT operations.

**1. Incident Management Module**

The **Incident Management** module in ServiceNow helps IT teams manage disruptions to services and restore normal operations as quickly as possible.

* **Purpose**: To log, track, and resolve incidents (service interruptions or reduction in quality).
* **Key Features**:
  + **Incident Records**: Each incident is logged as a record with details such as the affected service, user, urgency, impact, and description.
  + **Prioritization**: Incidents are prioritized based on **impact** and **urgency**.
  + **Assignment and Escalation**: Incidents are assigned to support groups or individuals, and escalated if needed.
  + **SLA (Service Level Agreement) Management**: Tracks the time it takes to resolve incidents against defined SLAs.
  + **Knowledge Base Integration**: Agents can use or create knowledge articles to solve recurring incidents.
  + **Incident Lifecycle**: The lifecycle includes creation, assignment, resolution, and closure.
* **Common Incident Fields**:
  + Number (Unique ID)
  + Short Description
  + Category and Subcategory
  + Impact and Urgency
  + Priority
  + State (New, In Progress, Resolved, Closed)

**2. Problem Management Module**

The **Problem Management** module is focused on identifying and managing the root causes of incidents to prevent recurring issues.

* **Purpose**: To find and eliminate the root cause of incidents, thus preventing future incidents.
* **Key Features**:
  + **Problem Records**: A problem record captures details about the root cause of one or more incidents.
  + **Root Cause Analysis**: Helps determine the underlying cause of an incident or set of incidents.
  + **Known Error Database (KEDB)**: Stores known issues and their workarounds.
  + **Problem Tasks**: Problem records may generate multiple problem tasks for teams to resolve the issue.
  + **Proactive Problem Management**: Not only reacts to incidents but also looks for trends that may indicate future problems.
* **Problem Management Lifecycle**:
  + Detection (via incidents or proactive identification)
  + Investigation and diagnosis
  + Resolution and closure
* **Common Problem Fields**:
  + Number (Unique ID)
  + Short Description
  + Root Cause
  + Category
  + State (Open, In Progress, Resolved, Closed)
  + Impact and Urgency

**3. Change Management Module**

The **Change Management** module manages changes to IT infrastructure and services, ensuring they are implemented smoothly with minimal disruption.

* **Purpose**: To plan, approve, and execute changes to IT systems while minimizing risks.
* **Key Features**:
  + **Change Requests**: A change request is created to propose a modification to the IT environment (e.g., a software update, server change).
  + **Approval Process**: Changes typically require multiple levels of approval before implementation.
  + **Change Types**:
    - **Standard Change**: Pre-approved and low-risk.
    - **Normal Change**: Requires an approval process, as it’s medium-risk.
    - **Emergency Change**: Requires immediate implementation to prevent or fix critical issues.
  + **CAB (Change Advisory Board)**: A group that reviews and approves changes, especially for high-risk changes.
  + **Risk and Impact Analysis**: Identifies and assesses the potential impact of a change before implementation.
  + **Post-Implementation Review**: After the change is applied, a review ensures it was successful and documents any lessons learned.
* **Change Management Lifecycle**:
  + Creation of Change Request
  + Risk Assessment and Approval
  + Implementation
  + Review and Closure
* **Common Change Fields**:
  + Number (Unique ID)
  + Short Description
  + Category (e.g., Hardware, Software)
  + Change Type (Standard, Normal, Emergency)
  + Risk Level
  + Approval State (Requested, Approved, Rejected)
  + Implementation Plan

**4. List in ServiceNow**

A **List** in ServiceNow is a user interface element that displays multiple records from a table (such as incidents, problems, or changes) in a tabular format. Lists are a key part of interacting with data in ServiceNow.

* **Purpose**: To provide a way to view, filter, sort, and manage records from a specific table.
* **Key Features**:
  + **Columns**: Lists are organized into columns, each representing a field from the table (e.g., Incident Number, Short Description, Priority).
  + **Filters**: Users can apply filters to show only records that meet certain criteria (e.g., incidents assigned to a specific user or with a certain priority).
  + **Sorting**: Records can be sorted by any column (e.g., sort incidents by the date they were created).
  + **Search**: Users can search for specific records directly within the list.
  + **Bulk Actions**: You can perform bulk actions, such as editing or deleting multiple records at once.
* **Common Use Cases**:
  + View and manage a list of all open incidents, problems, or change requests.
  + Create, update, or delete records directly from the list.
  + Export data in lists to CSV, Excel, or PDF formats for reporting or analysis.
* **Personalizing Lists**:
  + Users can personalize their view of lists by adding/removing columns, changing the display order, or saving custom filters for future use.