SERVICENOW

WEEK – 1

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Introduction:

➔ ServiceNow was founded in 2003 by Fred Luddy , Initially it was named GlideSoft but the name was later changed to ServiceNow.

➔ Fred throughout his career observed that there were many situations where the IT professionals made business people look foolish and this caught freds attention and led him to think about solving this problem.

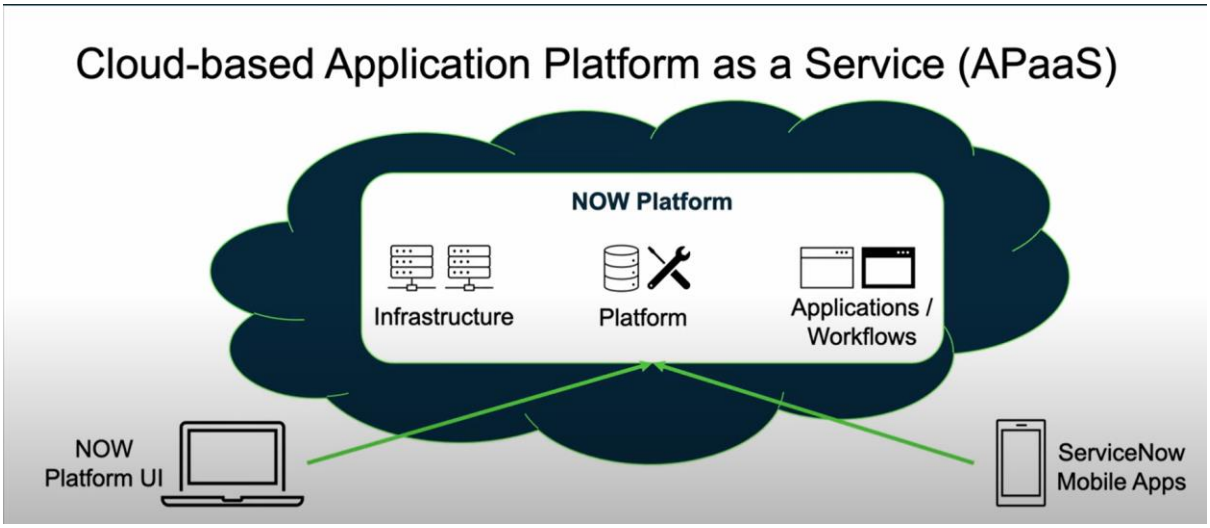
- What if IT services were designed and delivered in a way that allowed businesspeople to solve business problems themselves?
- Is it possible to build a platform where interacting with IT services is intuitive, well-delivered, and enjoyable to work with?

- Let's outsource the entire IT Department to the cloud and say goodbye to the 

IT guys of the world!

➔ Fred built a platform where business people can solve business problems themselves.

➔ Definition :
Servicenow is a software company founded by Fred Luddy in 2003 , to solve problems that large enterprises face with IT Systems , by offering a easy-to-use , cloud based platform where business people can solve business problems themselves.



➔ The NOW Platform provides infrastructure , platform and workflows , where business people can use the platform using their PC's or mobile devices.

Infrastructure

- **Compute Resources**: Datacenters, racks, servers, ports, network resources, fans, etc.
- **Security**: The platform is secured via multiple technologies which have been certified by third-party security organizations
- **Service Level Agreements**: Paired datacenters provide redundancy and failover; Redundancy is built into every layer including devices, power, and network resources
- **Backups**: 4 daily full backups per week and 6 days of daily differential backups

➔ Infrastructure includes compute resources such as datacentres , racks , servers etc.

➔ It also includes security which is secured via multiple technologies.

➔ It emphasizes the use of paired data centres to ensure continuous service through redundancy and failover mechanisms , this also ensures backups.

Platform

- All applications (OOB and custom) for the entire enterprise are supported by a single, common, data-model and database
- Ability to develop custom applications and workflows that integrate seamlessly into the platform

➔ It supports both out-of-the-box (OOB) and custom applications across the enterprise. It is supported by a single , common , data model and database to ensure consistency.

➔ Additionally, the platform enables the seamless integration of custom applications and workflows , if there's no workflow then business people can build one themselves based on requirements.

Applications / Workflows

ServiceNow comes with a robust suite of applications which are functionally categorized into 4 primary workflows:

- **IT Workflows:** Service Management (24), Operations Management (13), Business Management (10), Asset Management (4), DevOps (4), Security Operations (8), Governance, Risk, and Compliance (13), Telecommunications Network, Performance Management (3)
- **Employee Workflows:** HR Service Delivery (16), Workplace Service Delivery (10), Legal Service Delivery (10), Procurement Service Management (6), Safe Workplace Suite (1)
- **Customer Workflows:** Customer Service Management (29), Field Service Management (11), Connected Operations (4), Financial Service Operations (25), Telecommunications Service Management (24)
- **Creator Workflows:** App Engine (15), IntegrationHub (8)

➔ NOW Platform includes wide range of workflows which are pre-built and ready to use.

➔ These are categorized into four primary workflows

- IT Workflows
- Employee Workflows
- Customer Workflows
- Creator Workflows

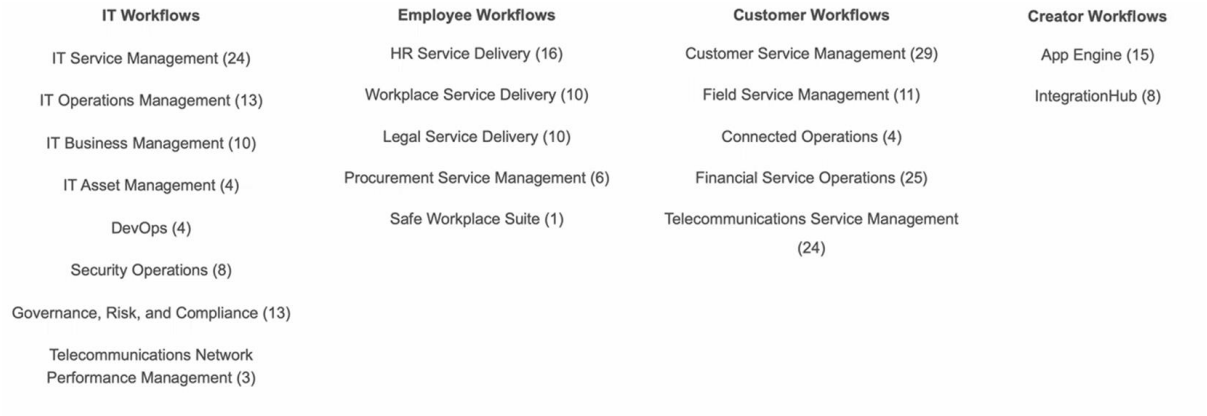
➔ These categories are divided into sub-categories and based on requirements business people can choose one , each sub-category contains multiple number of applications and if there's no application that matches , then you can create one.

ServiceNow Platform Overview:

- ➔ NOW platform is an Application Platform as a Service(APaaS)
- ➔ ServiceNow is completely cloud based
- ➔ ServiceNow provides infrastructure , platform and application & workflows, where users can create their own application if any of the applications or workflows doesn't meet their requirements.
- ➔ All applications for the entire enterprise are supported by a single datamodel and database.

Applications / Workflows Overview:

- ➔ These Applications are categorized in to 4 categories IT , Employee , Creator , Customer.



- ➔ These categories are sub-divided and has sub workflows

Now Platform Architecture:

- ➔ ServiceNow is built on a multi-instance architecture, which makes it unique from other cloud platforms , if considered any other cloud platform most of them are built on a multi-tenant architecture where your data can be mixed with other companies , but ServiceNow provides complete different platform and database.

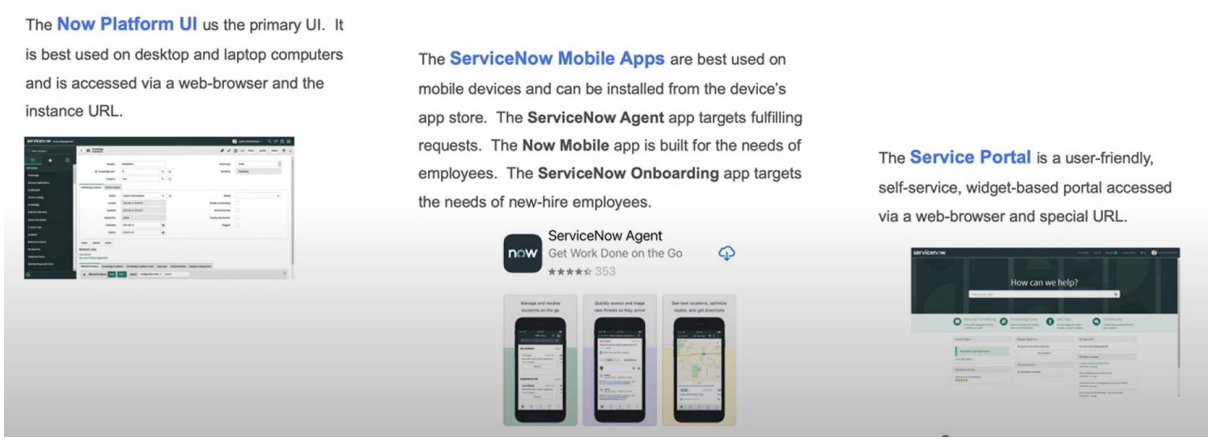
- ➔ All ServiceNow datacentres are paired with another datacentre to provide redundancy and failover.

- ➔ ServiceNow provides 4 weekly full data backups and 6 days of daily differential backups. The entire platform is secured using multiple technologies.

➔ ServiceNow platform provides domains where it can separate all the data processes and administrative tasks .

Ex: Staff domain: only staff people can see the data
Marketing domain: only marketing people can see the marketing data

Now Platform User Interface:



➔ There are 3 primary UI's , but the most used is Now Platform UI which is basically a web-browser used on desktops and laptops.

➔ Second is Servicenow Mobile Apps which are used on mobile devices and there are 3 different apps to serve different functionalities. Servicenow agent app targets fulfilling requests , Now mobile app is for the needs of employees and Servicenow Onboarding is for the need of new-hire employees.

Role Based Access:

➔ Not everyone in the organization needs access to all the information all the time , they only need some specific information . servicenow uses role-based access which gives users only the information that's needed.

➔ A User is an individual that has access to an instance. Users can be assigned to 1 or more groups or multiple roles. A user with no roles is called self-service user.

➔ A Group is a set of users who share same data and can be assigned multiple roles to a single group.

➔ A Role in servicenow is a collection of permissions. A role can be assigned to an individual user , a group of users or another role. Multiple roles can be assigned to a single role.

User Authentication :

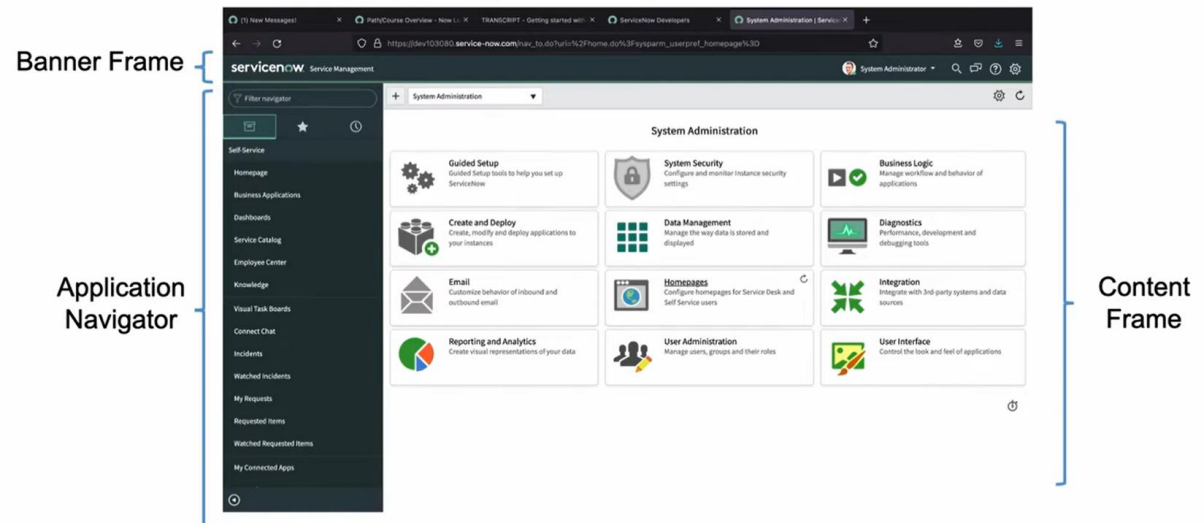
When a user attempts to login to an instance, ServiceNow validates their identity and enables access to functions and data based upon their related groups and roles. The platform can support several methods of user authentication including:

- **Local database authentication**
- **External Single Sign-on (SSO)**
- **LDAP**
- **OAuth 2.0**
- **Digest Token**
- **Multi-factor Authentication**

➔ When user tries to login to an instance , Servicenow identifies and enables access to functions and data based on their groups and roles.

➔ A user can login using any of these authentications , Servicenow supports all these authentications.

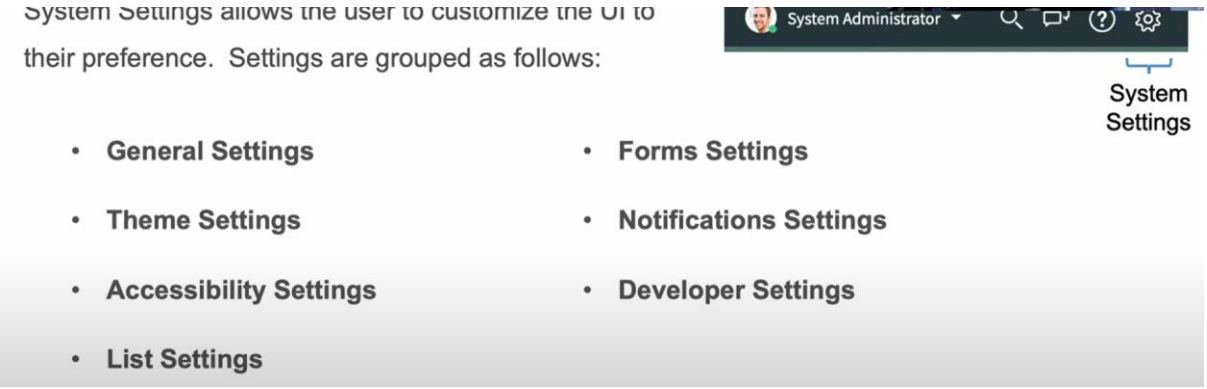
ServiceNow User Interface Overview:



➔ In the banner frame all we have is logo , user menu , searching tool , chat , help and settings , each of them are used to do a particular task,

➔ When clicked on servicenow logo it'll take you back to the homepage.

➔ User menu provides profile, Impersonate user, elevate roles, logout options. Profile where we can edit our name, phone , email. Impersonate user where we can access to other roles, and it is only available to admin or user with impersonate role. Elevate roles to only available to admin it's a safety mechanism for high-impact actions.

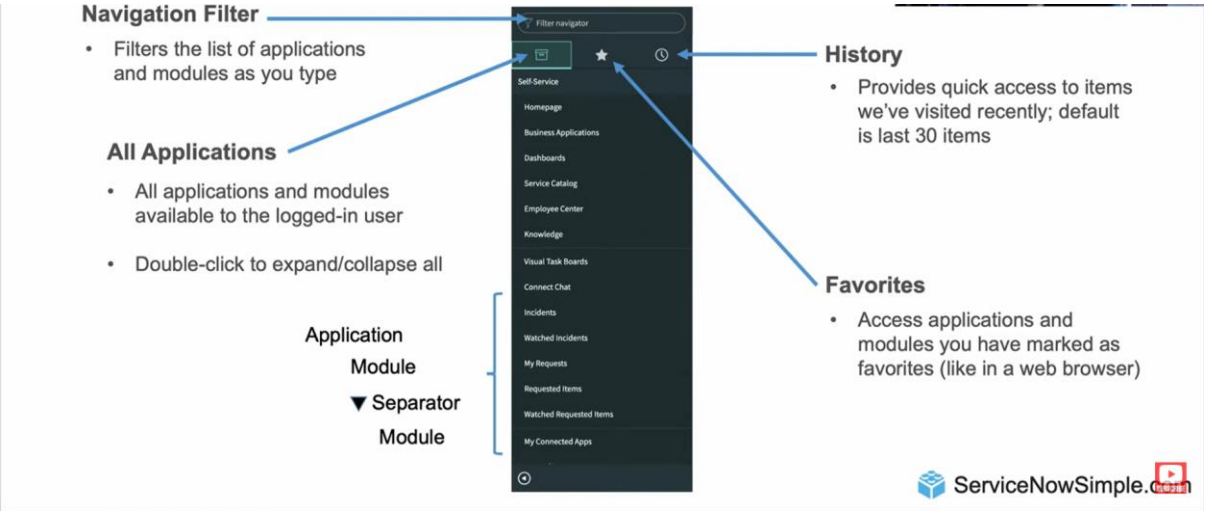


➔ Each of the settings are used to serve different purposes.
➔ General Settings: Enable/Disable Compact UI and Keyboard shortcuts , set home link , homepage or dashboards and set time zone.
➔ Theme Settings: Choosing a colour for UI.
➔ Accessibility Settings: For setting accessibility access.
➔ List Settings: Enable/Disable wrapping of long text in list columns.
➔ Form Settings: Enable/Disable tabbed forms.
➔ Notification Settings: Enable/Disable notifications and set notification types.

Developer Settings:

➔ Select Application and Update set.
➔ Enable/Disable Application Picker and Update set picker.
➔ Enable/Disable Java script log viewer.
➔ Enable/Disable Automated test framework page inspector.

Application Navigator:

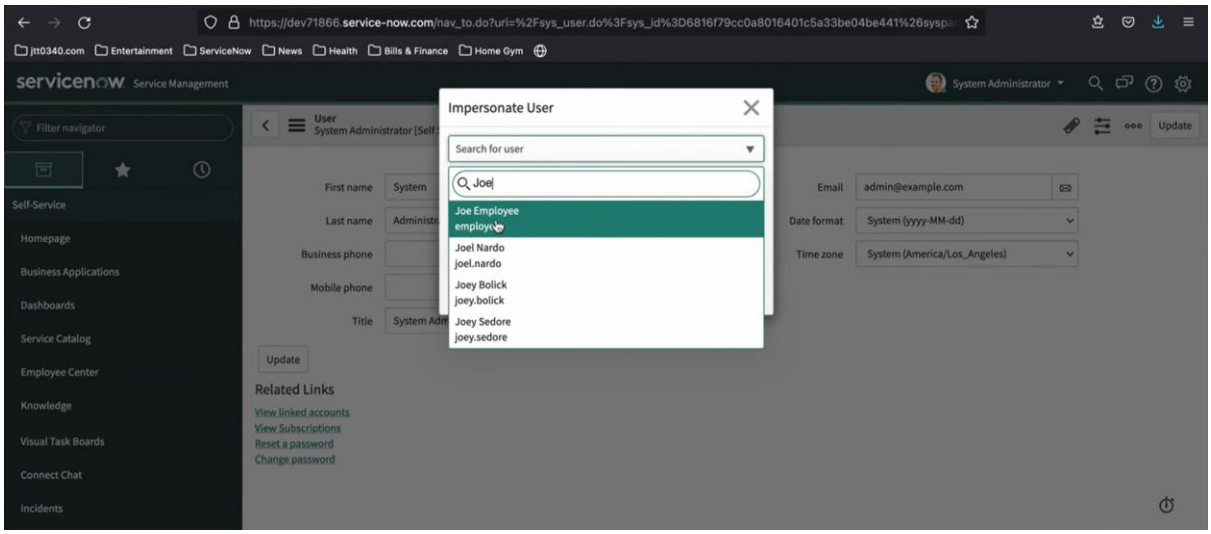


➔ Application Navigator is the sidebar which is in the left and we use it to get any where into servicenow.

➔ There is a navigation filter which is very useful , by entering keywords we can access it , instead of searching it and wasting time.

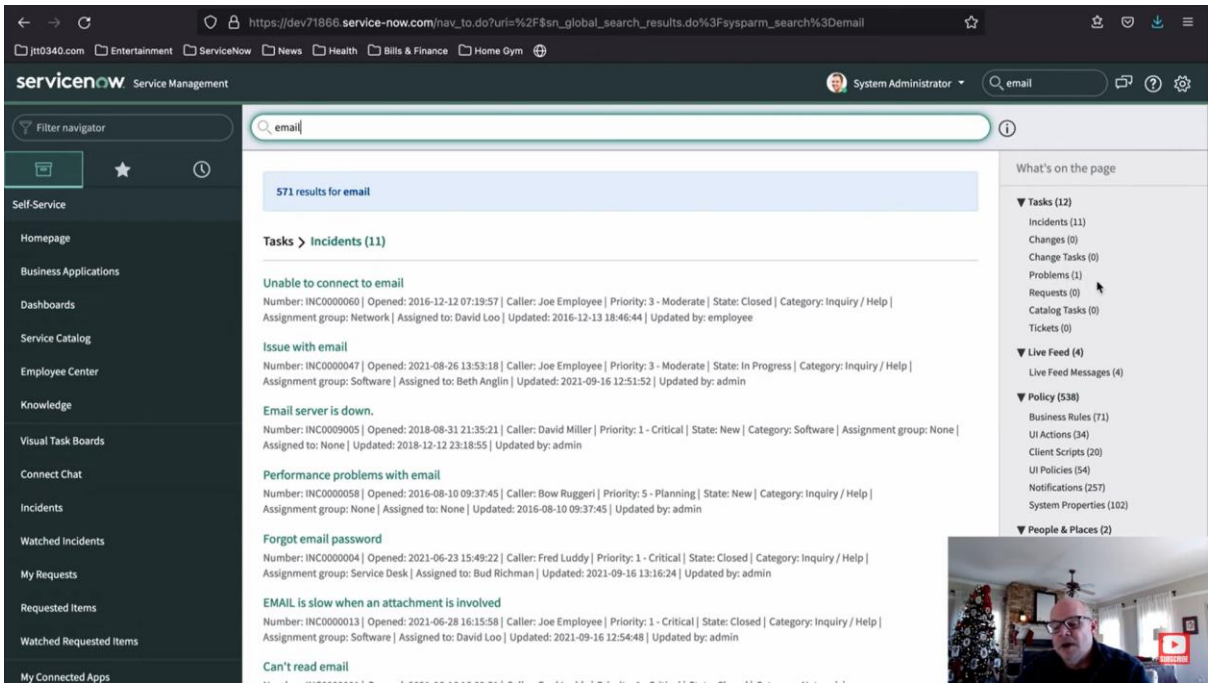
➔ All Applications is where we have everything and also each application has one or more modules.

➔ If frequently visiting those applications we can add it as favourites and quickly navigate to it, and history shows us what all we have done.



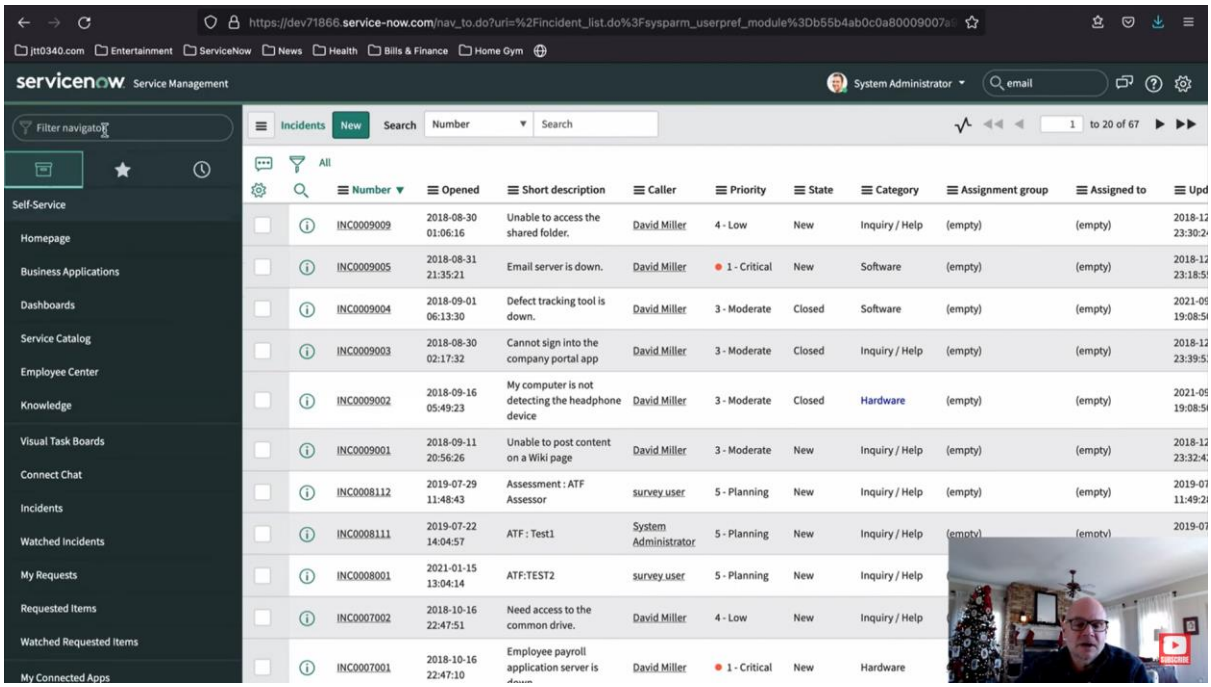
➔ This is how we use impersonate user , we can access other persons view , just by searching their name.

➔ Can chat with any of them by just typing their name and sending it.



➔ By searching we can find everything related to that , and it also categorizes them as tasks , live feed , and also makes it easier to understand it.

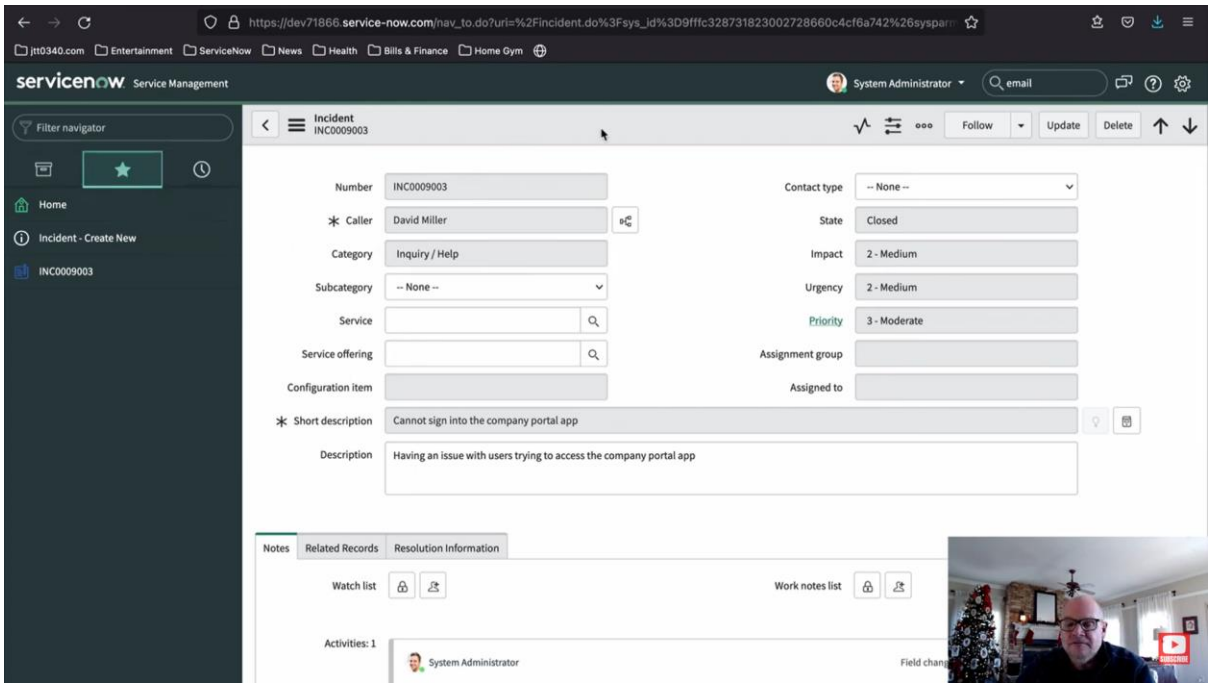
➔ There are many applications and services, so filter navigator makes it easier just by entering a key word it displays required application.



➔ This is an example if incidents , an incident in servicenow is a record created to document and manage disruptions. It is a key component of the Incident Management process, which is designed to restore normal service operations as quickly as possible and minimize the impact on the business.

➔ The information displayed shows everything , which includes when it was created , a short description , priority , state , category , group.

➔ By dragging it by clicking on the incident number we can add it as favourite.



➔ This is how an incident looks , where we can edit the information and it also shows records related to it.

➔ **Incident Workflow:** The incident workflow typically starts when an issue is reported by a user. The incident is logged in the system, categorized, and prioritized based on the urgency and impact. It is then assigned to an appropriate team or individual for resolution.

ServiceNow Branding Overview:

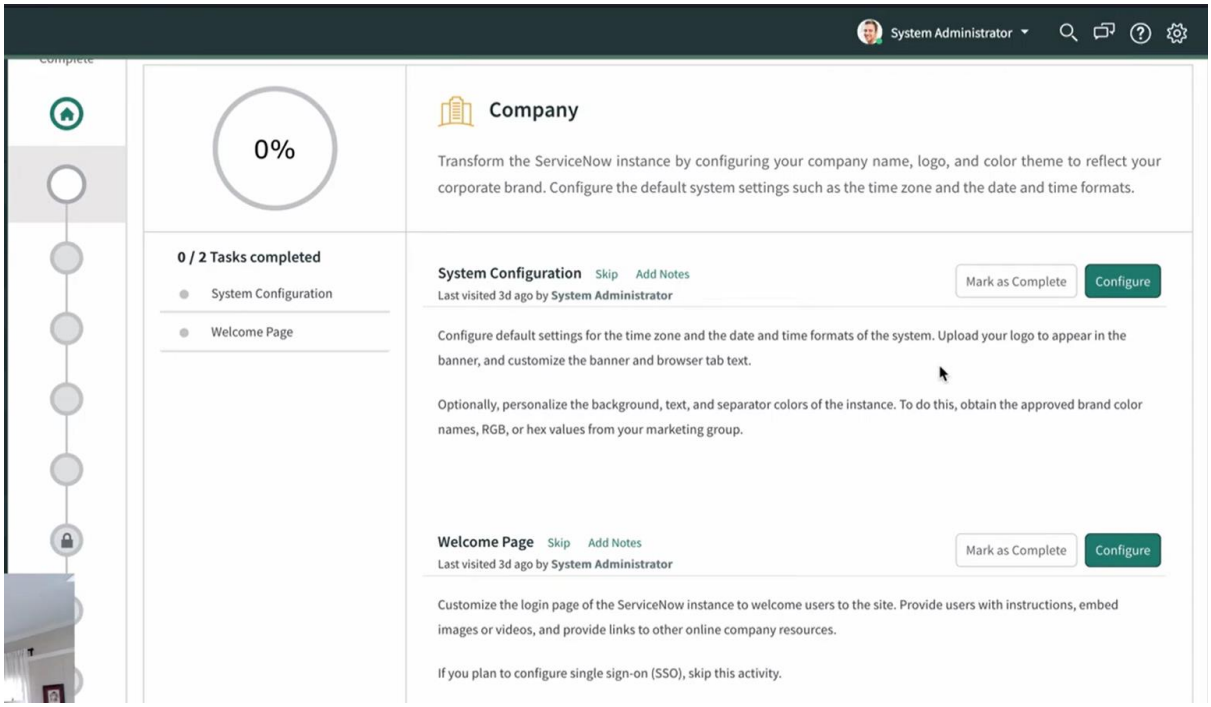
➔ Branding in ServiceNow refers to the customization of the platform's user interface (UI) to reflect an organization's brand identity.

➔ This involves modifying the look and the ServiceNow instance to align with the company's colours, logos, fonts, and other visual elements.

➔ Branding enhances user experience by providing a familiar and consistent visual environment across the platform.

- Guided Setup provides a System Administrator step-by-step instructions to configure various Applications and Modules within your instance to suit the needs of the users.
- To access Guided Setup, locate the **Guided Setup** application in the Application Navigator and select the **ITSM Guided Setup** or **ITOM Guided Setup** module.
- **ITSM Guided Setup** includes the following categories: **Company**, Connectivity, Foundation Data, CMDB, Incident Management, Major Incident Management, Problem Management, Change Management, Service Catalog, Knowledge Management, Continual Improvement Management, Project Communication, Go Live
- **ITOM Guided Setup** includes the following categories: MID Server, Discovery, Event Management, Operational Intelligence, Cloud Provisioning and Governance

➔ For enhancing UI we need to navigate to guided setup and select ITSM(Information Technology System Management) which includes many categories where we can enhance user experience. Below image is represents ITSM.



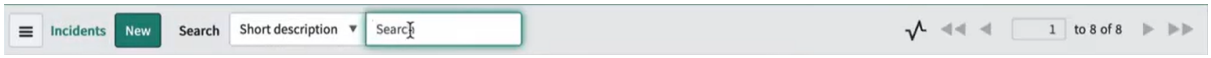
ServiceNow Lists and Filters:

- **Lists** and **Filters** in ServiceNow are fundamental components that help users view, manage, and interact with data efficiently.

- Lists display records from a table in a tabular format, allowing users to view multiple records at once. Each row in a list corresponds to a record, and each column represents a field in that record.

- Lists are customizable, such as the ones where a user has to choose which columns to display, their order, and sorting criteria. Any such customization could later be reused.

- Using .lis command we can navigate to the table we need , task.lis gives us task table and can go through other tables as well by entering keywords.



- In the list controls we have view, filters, group by, show, refresh and create favourite tools.

- By using them we can access data with as many as filters we can , and also apply multiple filters at a time.

➔ Users can personalize their lists by adding or removing columns, creating filters, and saving these views as personal or global.

➔ When a filter is applied, it appears as a breadcrumb trail above the list, allowing users to see which filters are active and remove them easily.

➔ Users can combine multiple conditions to create complex filters using logical operators like AND, OR.

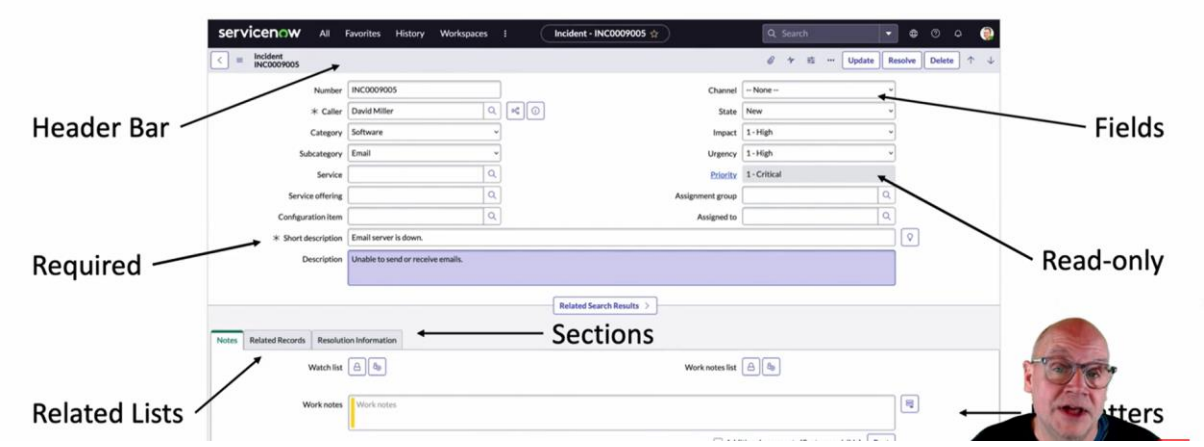
➔ Filters also has a option for visual representation , pie and bar chart are available, just right click on the header and select any of the visualization and you'll be able to see visual representation of that column in detail.

➔ Checkboxes allow multiple records to be selected at a time , at the bottom there are some group of activities which we can perform using these selected data.

Forms in ServiceNow:

➔ Forms in ServiceNow are the primary way users interact with data. They provide a structured interface for entering and managing records within tables.

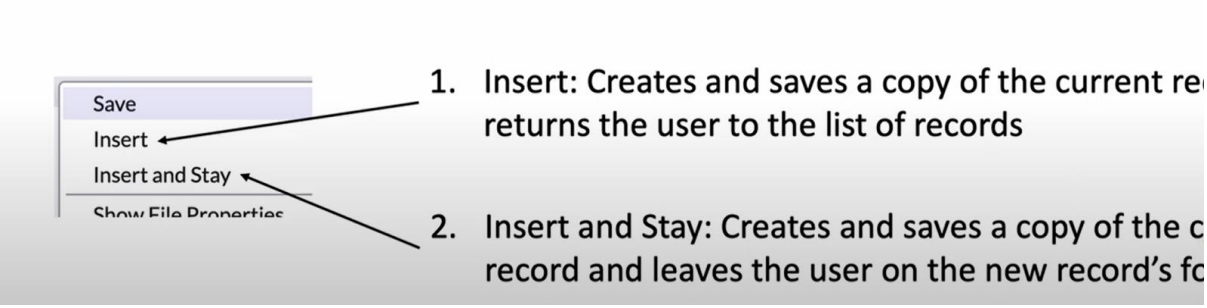
➔ There are many different forms in servicenow , but these forms have similarities such as header , fields , sections , lists. Below image shows that in detail.



➔ There are 4 types of form fields , they are string field , Boolean field , choice field , reference field.

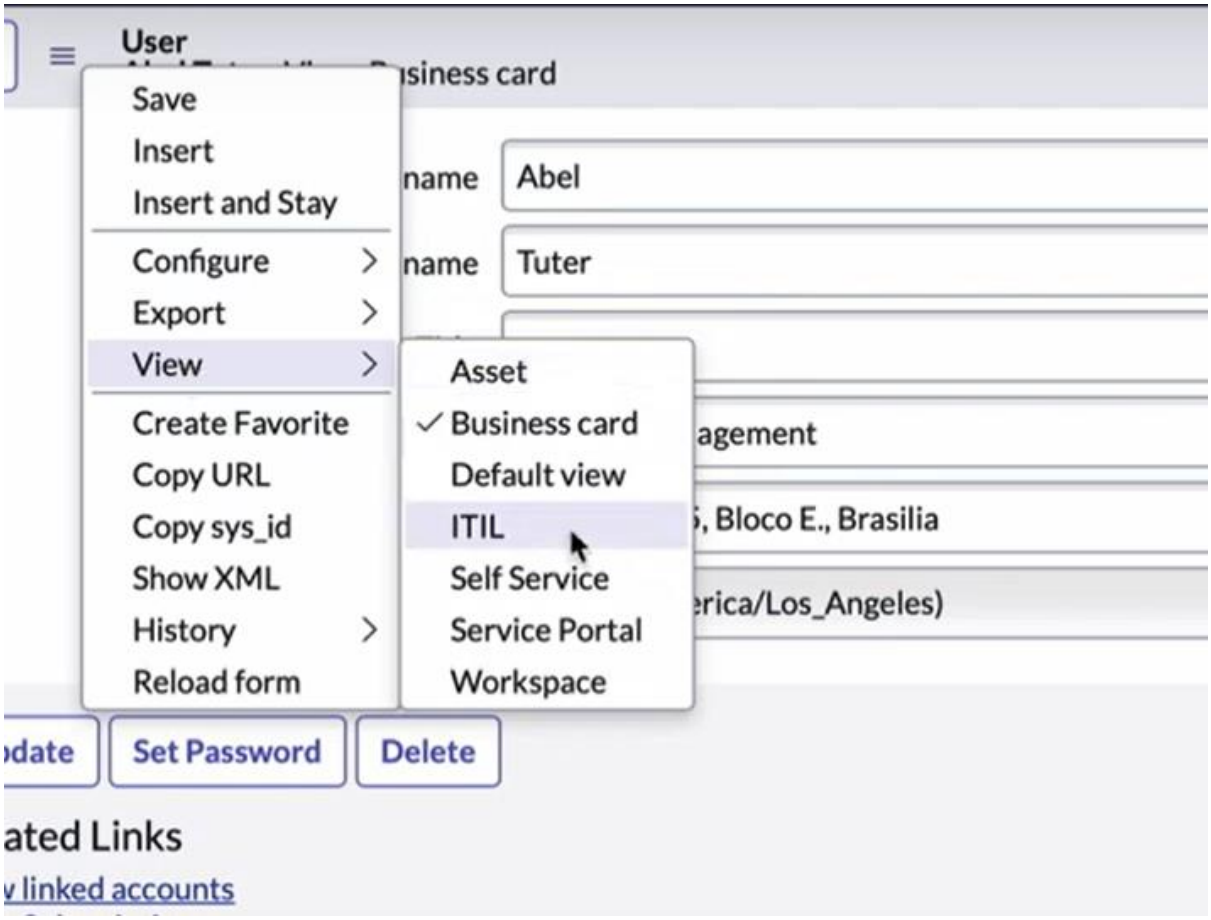
➔ Some fields are dependent on other fields. If State = onhold then Onhold reason is mandatory and when the state is different then this Onhold field is hidden.

➔ Saving the changes in servicenow is mandatory , changes are not automatically saved here unlike other cloud operators. User must update or save the changes he made.



➔ Forms in servicenow provide another feature of copying the current record , there are 2 options Insert , Insert and Stay. Insert creates a copy and returns to the list of records where as Insert and Stay creates a copy and leaves user on the new records form.

➔ Form Related Lists is a special form element that displays a list of records from another table that is related to the current record.



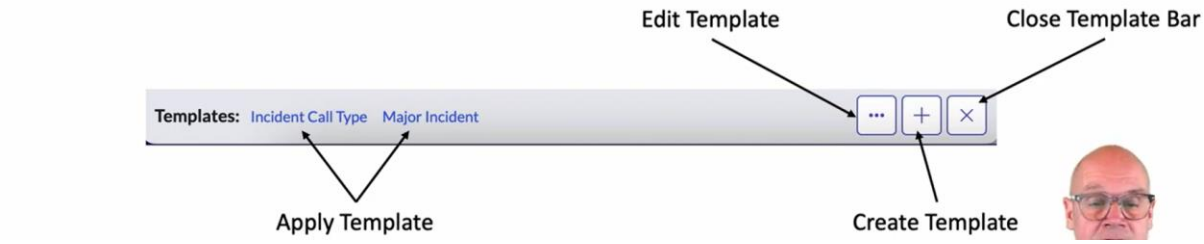
➔ Form View is one more interesting feature in forms, user can change the views according to his requirements and can also personalise them.

➔  This is personalise symbol , when clicked on this it displays all the available fields and when selecting on them user can customize according to his view and can also reset by clicking on reset button.

➔ The symbol left to the personalize is attachments , by clicking on that user can attach files to that particular records and after attaching multiple files there a checkbox where user can select and remove.

Form Templates

The template bar provides shortcuts to apply, edit, and create templates for the current form.



➔ Form Templates in ServiceNow are sets of data that can be quickly filled into certain fields of a form through the predefined structures given by ServiceNow.

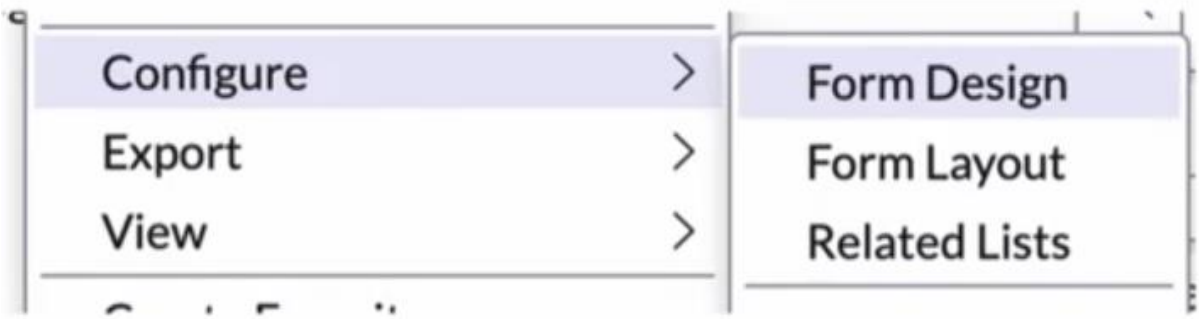
➔ These tools allow users to save time by letting them automatically fill out form fields with default values of their choice, hence, employing consistency and error-free operations.

➔ Besides being useful when you fill out the form automatically, they are great when you want your workflow to be repetitively because it is incomparable with other techniques to do the same.

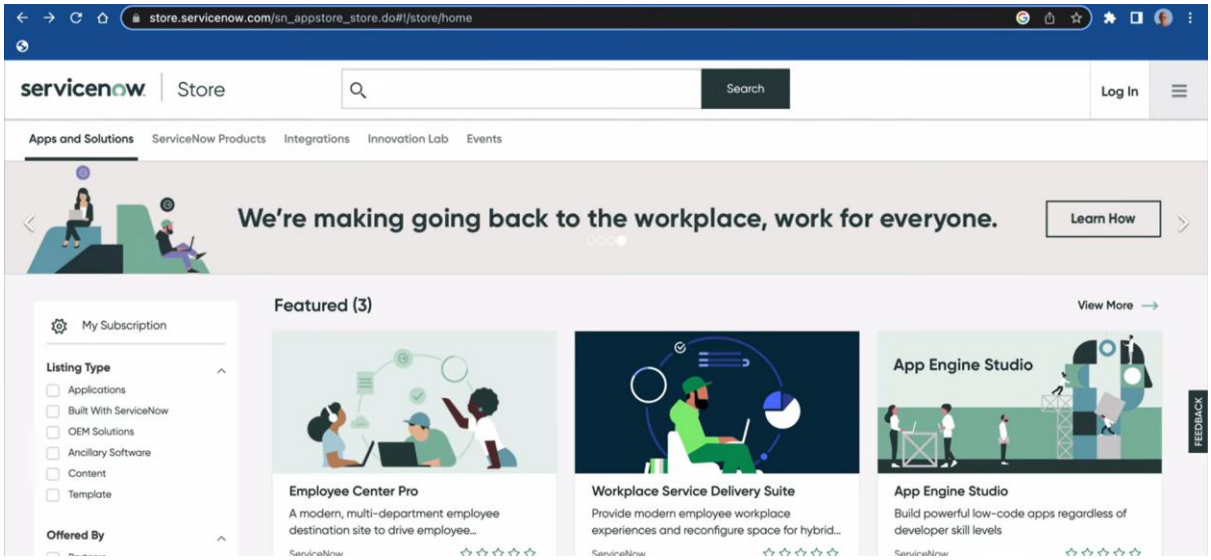
➔ Creating and editing form views , the tools exist for creating and managing form views , both are available from the context menu.

➔ The Form design tool provides a drag and drop GUI method of creating views and laying out sections and fields.

➔ The Form Layout tool provides a simpler method of creating views and adding and also removing fields.



➔ If user needs an application and he doesn't find it in all applications field , so as we know that we can create one and also there's **ServiceNow Store** which is kinda similar to Appstore and playstore where it has numerous IT applications within that user can choose one based on requirements.

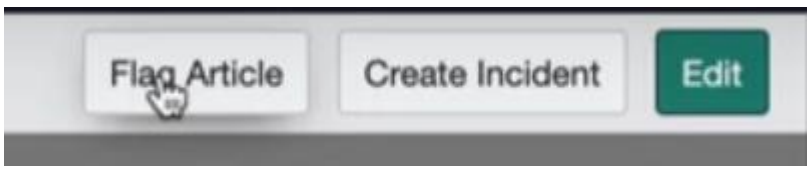


➔ A List displays multiple records from a database table and From is a display of a single record.

➔ Knowledge Management in ServiceNow is a module that enables organizations to create, share, and manage knowledge articles within the platform.

➔ It provides a centralized repository for knowledge articles, making it easier for employees, customers, and stakeholders to access information, solve problems, and make informed decisions.

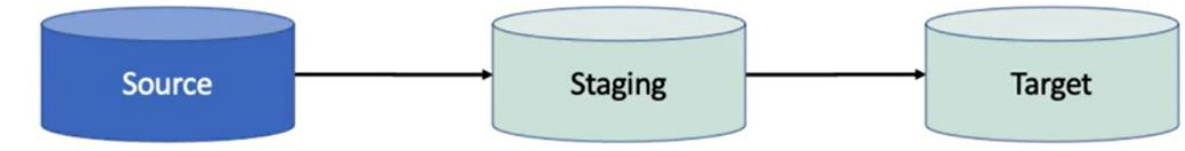
➔ We can also flag the article , if there's any inappropriate information provided , and can also make an incident and assign it to someone.



➔ Users can provide feedback on articles by rating them and leaving comments. This feedback helps identify the usefulness of content and areas for improvement.

➔ Access to knowledge bases and articles is controlled through user roles, groups, and permissions.

Importing Data in ServiceNow:



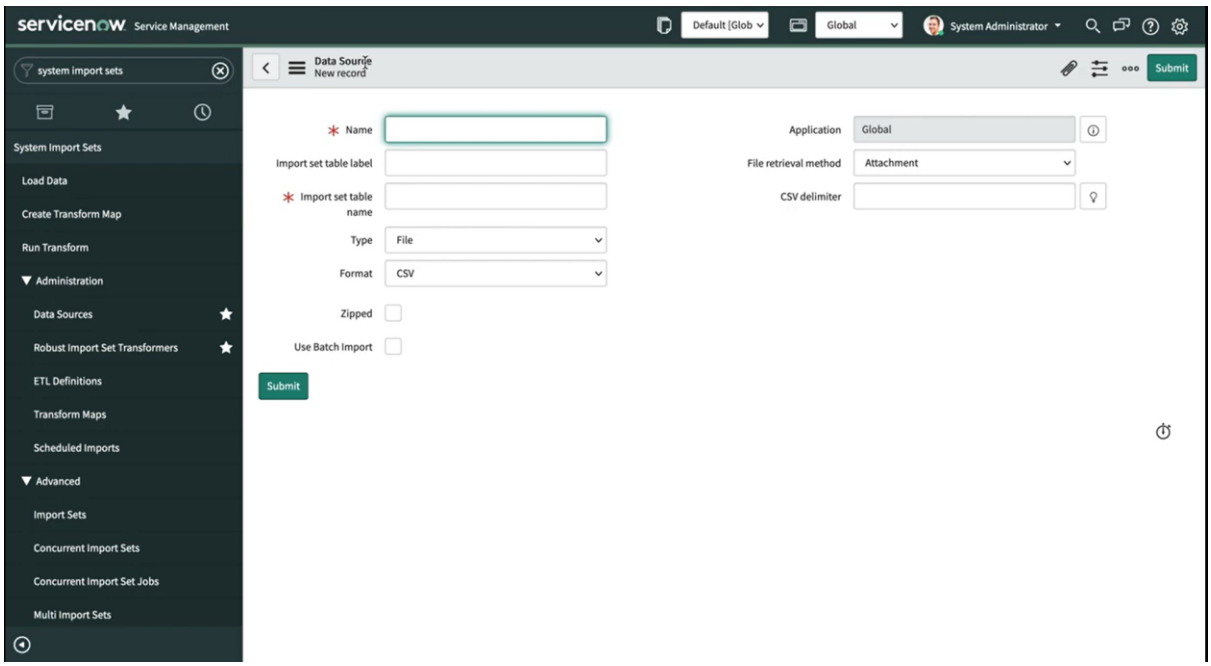
Three data entities involved in a ServiceNow import

➔ There are three data entities involved in ServiceNow import. They are Source, Staging and Target.

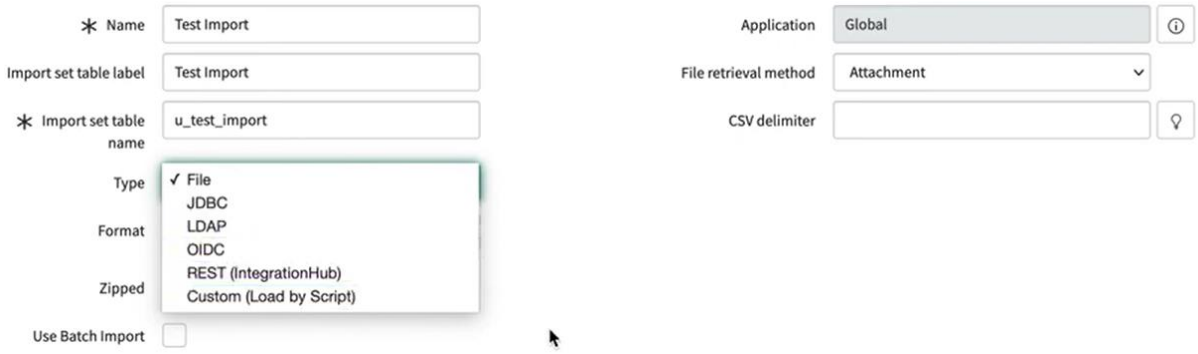
➔ In ServiceNow , the import process introduces an intermediary data entity between those two steps called as Staging but servicenow calls it as import set table. ServiceNow creates it automatically.

Creating a Data Source in ServiceNow:

➔ To create a data source in ServiceNow firstly we need to navigate to data sources manually or we can type sys_data_source.list in application navigator and it shows data sources.

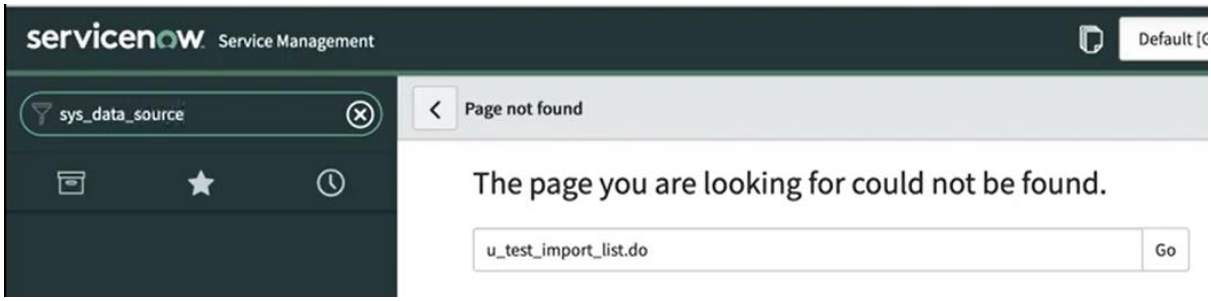


➔ We can create one by clicking on new and this appears , we can select all these according to requirements and by save them.

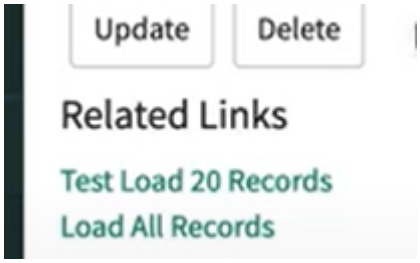


➔ These are all the types that we can select.
➔ After creating data source we can attach files , we can only attach when we choose file types and can upload CSV , XML , JSON , and Excel(.xsl)

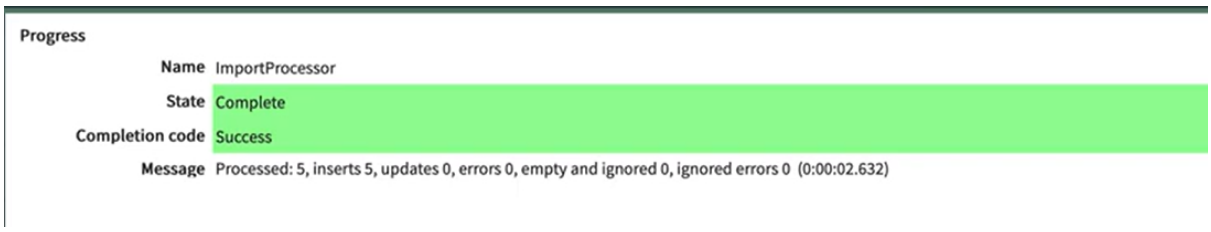
➔ After attaching the file and when we try to open that table by typing u_test_import.list ServiceNow says that there's no match , this is because we haven't yet imported it.



➔ We must import and load the data , in the data source we can load by clicking on load all records.



➔ Once clicked on Load All Records, ServiceNow display message , it shows successful.



➔ Now when you open the record it displays the data.

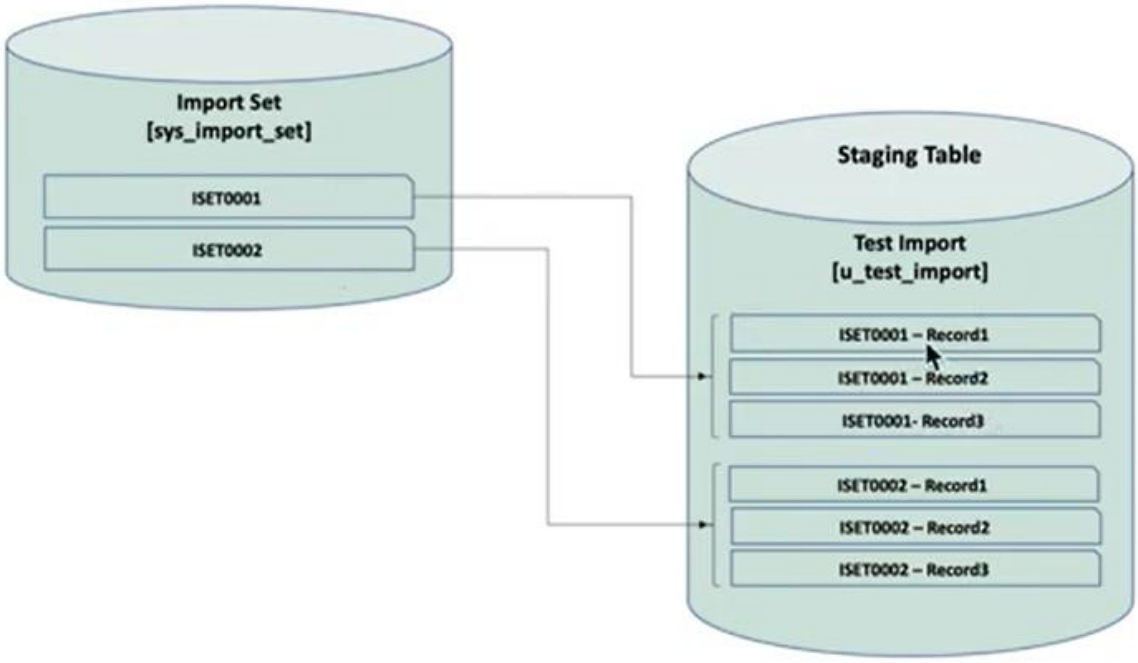
➔ If the data is loaded twice then it will display the data 2 times , we can also check how many times did we loaded the dataset and also displays type , format , data source and time.

➔ Typing sys_import_set.list displays import sets

Number ▲	Short description	State	Import set table	Data source	Created	Load completed	Load run time
Search	Search	Search	Search	Search	Search	Search	Search
ISET0010036	Type: File Format: Excel	Loaded	Test Import [u_test_import]	Test Import	2021-08-26 12:45:50	2021-08-26 12:45:50	0 Seconds
ISET0010037	Type: File Format: Excel	Loaded	Test Import [u_test_import]	Test Import	2021-08-26 12:49:05	2021-08-26 12:49:05	0 Seconds

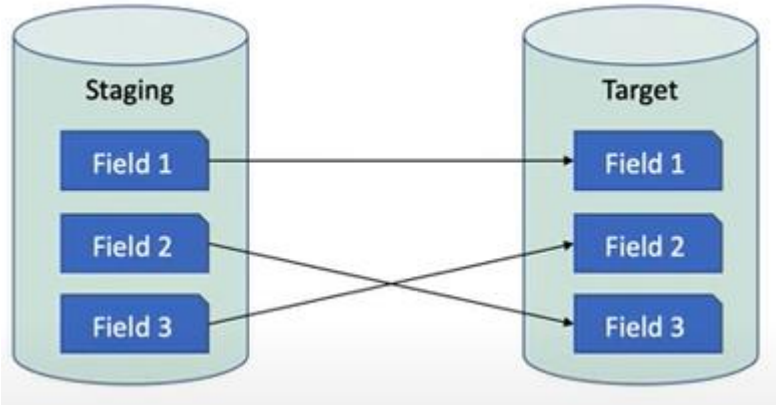
Actions on selected rows... 1 to 2 of 2

➔ Below is the image which shows how the import set work in import set tables. Stagging table refers to import set tables in ServiceNow.



ServiceNow Transform Maps & Field Maps:

➔ In ServiceNow, **Transform Maps** and **Field Maps** are related to the data import process, specifically in the context of transforming and mapping data from external sources into ServiceNow tables.



➔ Above image is shows how field maps work.

➔ For navigating to field records the command is sys_transform_entry.list , this command displays the field records.

➔ For Transform Maps Table the command is sys_transform_map.list.

➔ The target table is the ServiceNow table where data will reside after transformation, such as the Incident, Change Request, or CMDB tables.

➔ Field Maps are individual mappings between fields in the import set (source) and the target table. They define how each source field's data is transformed and inserted into the target table's field.

➔ There are two main types of field mappings: **Direct Mapping**, where source and target fields match directly, and **Scripted Mapping**, where custom scripts are used for more complex data transformations.

➔ Transform Maps support various scripts, such as **onBefore**, **onAfter**, **onStart**, and **onComplete** scripts, to manipulate data during different stages of the transformation process.

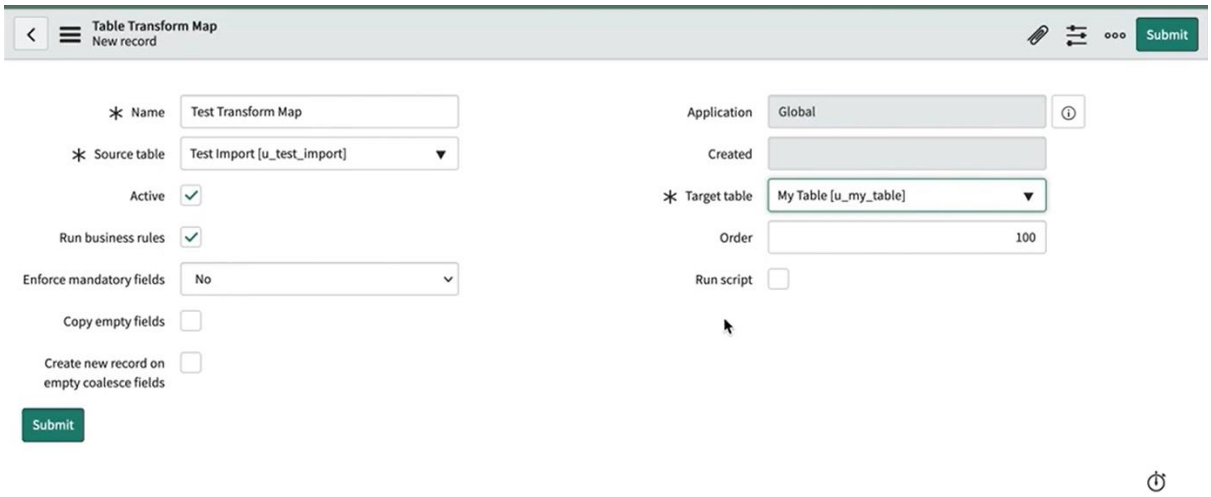
➔ The data transformation process starts with loading data into an import set table, followed by using Transform Maps to move data to the target table, applying any necessary data conversions or validation rules.

➔ Scripted field mapping involves writing JavaScript code to apply custom logic during the field mapping process. This is useful for concatenating fields, changing data formats, or implementing conditional logic.

➔ Always test Transform Maps in a sub-production instance to avoid data corruption. Ensure that scripts are well-documented and that error handling is in place for custom scripts.

➔ ServiceNow provides options for debugging Transform Maps, such as the "Transform History" module, which shows logs and errors encountered during the data transformation process.

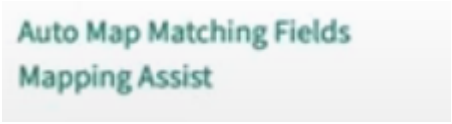
➔ Transform Maps can be scheduled to run periodically, allowing for regular data synchronization between external data sources and ServiceNow.



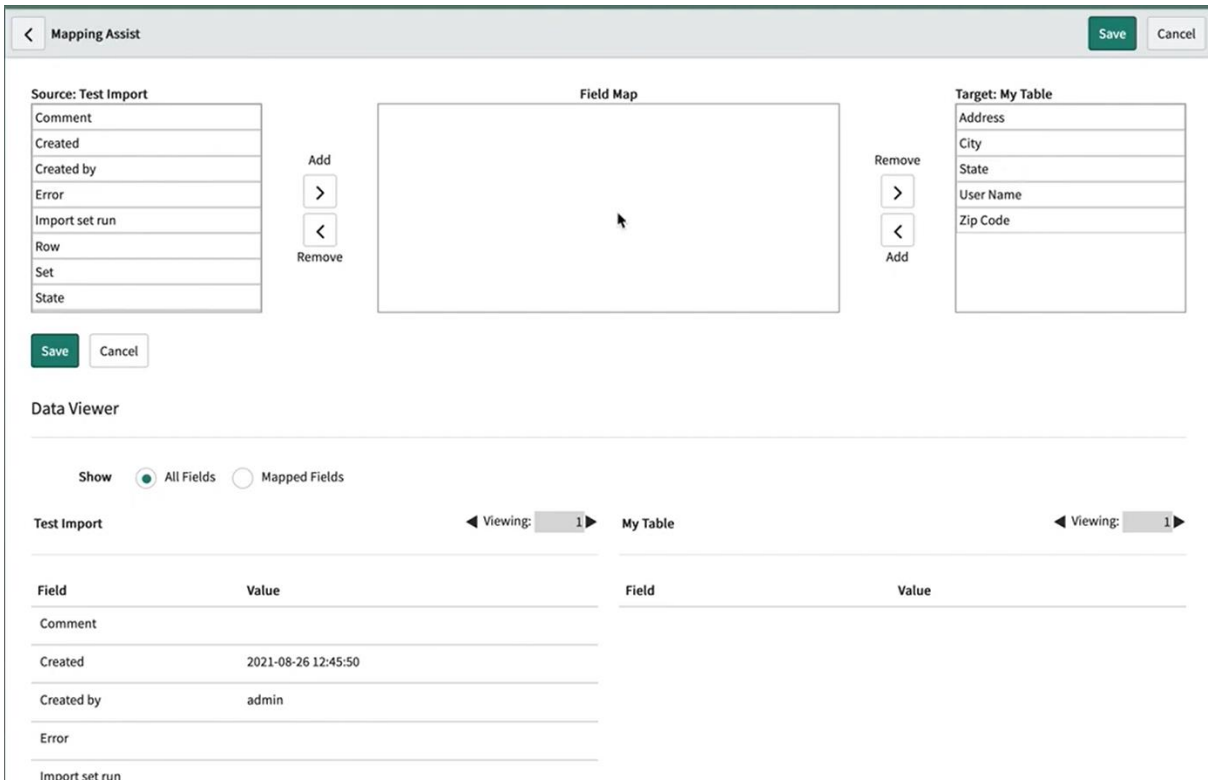
➔ This is how we can send the data to source table to target table by creating a transform map.

➔ We selected the source table and target table which were created before and selecting all the fields required accordingly and saving that.

➔ This is step 1 where transform map creates grouping for 2 tables but not for individual grouping, for this we need another step , we have 2 options for this one is auto map matching fields. This works when you give same names. Other option is Mapping Assist where we manually make a mapping



➔ When clicked on Mapping Assist this is how it looks



➔ Where we can manually drag which 2 fields are to be mapped and saving that.

➔ Transform Maps and Field Maps allow for precise data mapping and validation, ensuring imported data aligns with the existing schema and maintains data integrity.

➔ With features like coalesce fields, Transform Maps help in efficiently managing data inserts and updates, preventing data duplication and maintaining database consistency.

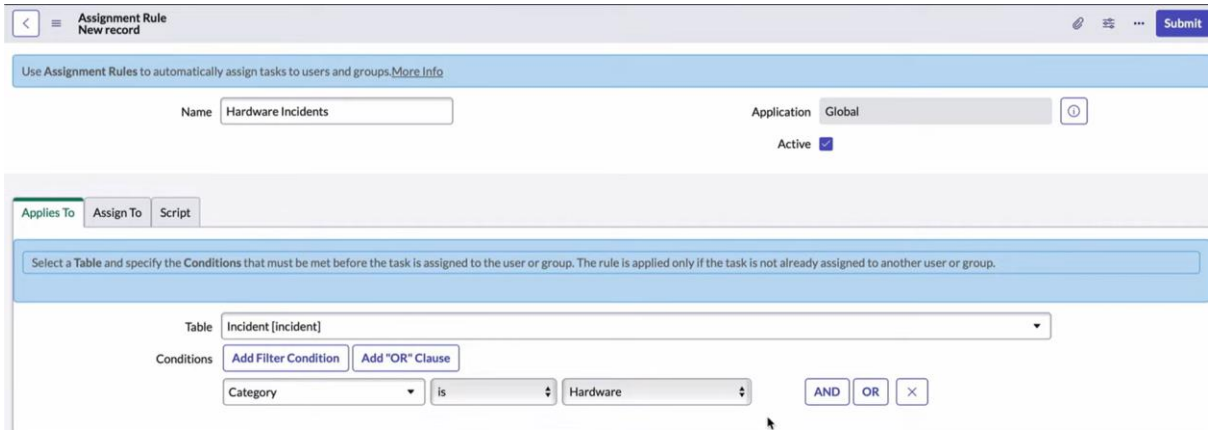
Incident Management and Task Administration in ServiceNow:

➔ Task is some sort of work that is to be done. Task in ServiceNow is represented by a record in Task table. We can access this table manually by selecting or typing task.list.

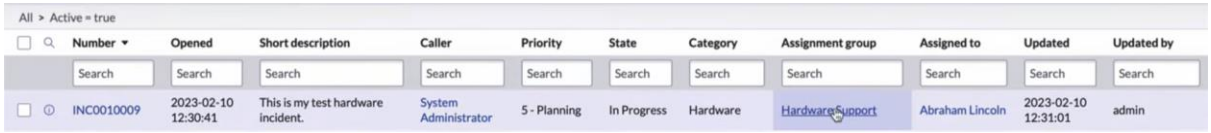
➔ The three most common tasks in ServiceNow are Change Request, Incident, and Problem. These three are different tables and are extensions to the task table. They inherit the common attributes from task table and add their own attributes as needed.

➔ Tasks can be assigned to a individual User or a Group of Users. We can assign tasks using Assigned to or Assignment group. Tasks can be automatically assigned or can also be manually assigned.

➔ We are creating a new assignment rule called Hardware Incidents and extending it to incidents table and assigning it to user Abraham Lincon and group Hardware Support. Also adding a condition that category is hardware.

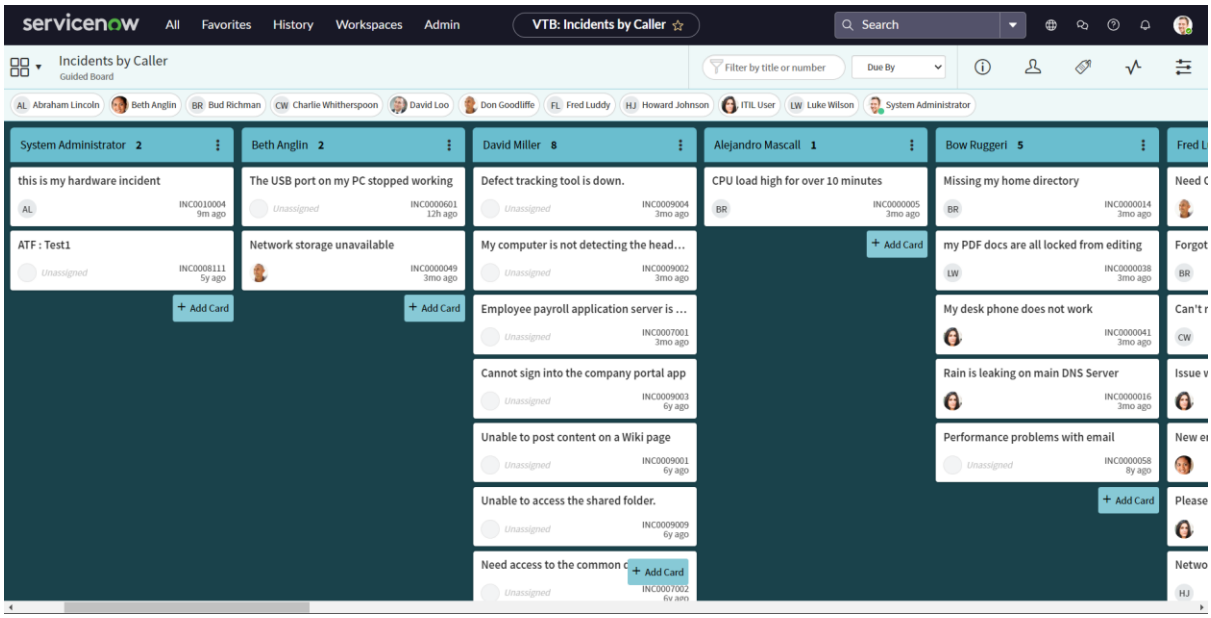


➔ Now when we create an Incident and give hardware as category , the task will be automatically assigned.



➔ All tasks assigned to you are visible under 'My Work' and 'My Group Work' in the Service Desk.

Visual Task Board:



➔ Visual Task Boards (VTBs) in ServiceNow are a powerful tool for managing and visualizing tasks and work items in a more interactive and intuitive way.

➔ Users can customize boards to suit their needs by adding or removing columns, changing labels, and configuring card types. Just by dragging them you can do many things.

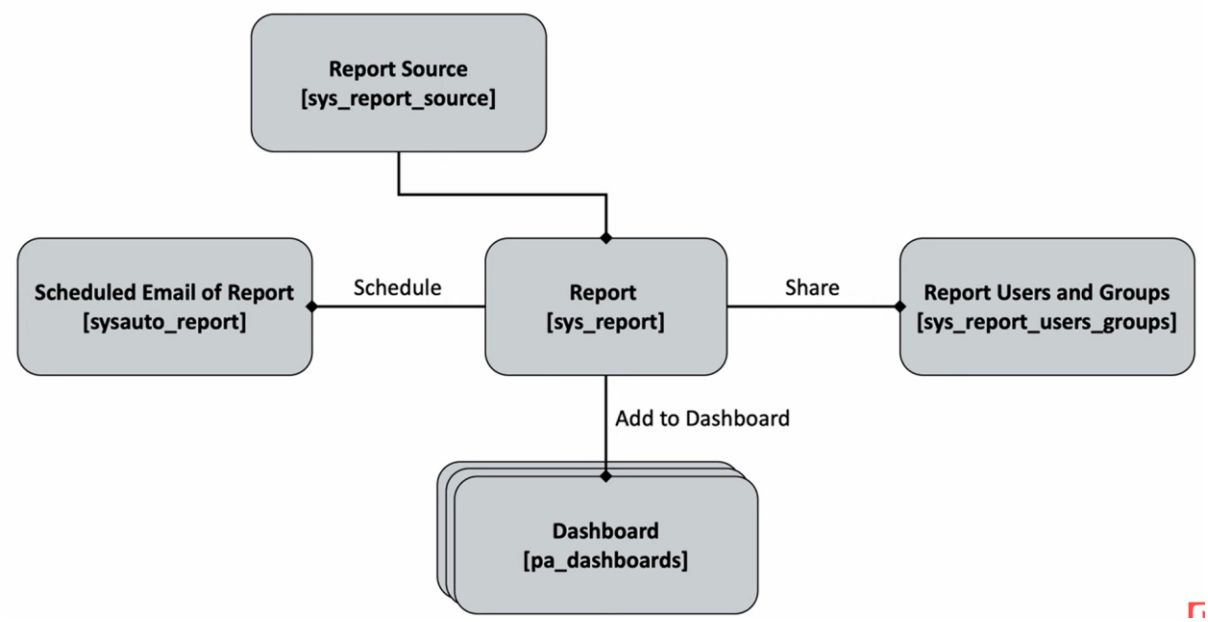
➔ Tasks can be easily moved between columns using a drag-and-drop interface, making it easy to update the status of tasks.

➔ Boards can be filtered to show specific types of tasks, users, or other criteria. Users can switch between different views to focus on particular aspects of their work.

➔ Boards can be shared with other users or teams. Collaboration features allow multiple users to interact with the board simultaneously.

➔ **Conclusion:**
Visual Task Boards in ServiceNow offer a dynamic and interactive way to manage and track tasks. They enhance productivity and collaboration by providing a clear, visual representation of work items and their progress. Whether you're managing incidents, projects, or any other work processes, VTBs can be a valuable tool in your ServiceNow toolkit.

Reporting in ServiceNow:



➔ This image above better explains about reporting in ServiceNow.
➔ All the reports data is stored in the table called report table, we can access that table by typing sys_report.list

➔ Report Source is used to store and reuse the report and can access table by typing sys_report_source. It is a database view that defines what data should be extracted and displayed in the report.

➔ Scheduled Email of Reports, this is used to automate the delivery of reports via email. You can schedule reports to be sent at regular intervals (e.g., daily, weekly, monthly) to specific users or groups. This feature is useful for sharing reports with stakeholders who need regular updates without manually generating them each time.

➔ Report Users and Groups, this component controls the sharing and access permissions for the reports. It specifies which users or groups have access to a particular report. You can share reports with specific individuals, teams, or make them globally accessible within the organization.

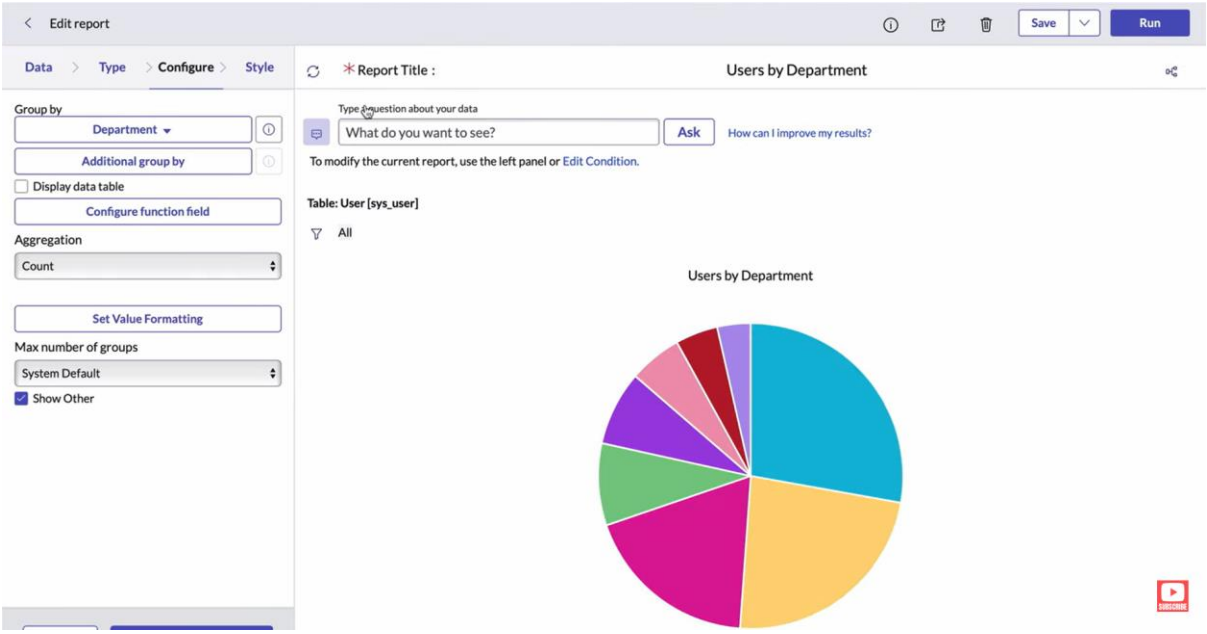
➔ Dashboards are collections of reports and other widgets that provide a consolidated view of key information. Reports can be added to dashboards to visualize and monitor metrics and trends in a single view. Dashboards help in decision-making by providing an overview of critical data in real-time.

➔ Report table is made up of 156 different fields which describes how the report should behave, but there are only 8 which are most commonly used , below image specifies them.

FIELD LABEL	REPRESENTS	DATATYPE / DESCRIPTION
Sys ID	The unique identifier of the record	Sys ID (String)
Title	The title of the report	String
Source type	The type of data source for the report	String (Table or Data source)
Report source	The Report Source to use when applicable	Reference (Sys ID of a record in the Report Source table)
Table	The database table from which the report data is pulled	Table Name (String)
Field Name	The field the report data should be grouped on	String
Filter	The filter to be applied for the report data	Conditions (String)
Type	The type of report (visualization)	String

➔ We can create a report very easily there are 3 different ways that you can create. First one navigating to report and creating a new report, second in ServiceNow studio just the navigating path is different everything will be same as creating in an instance and the third one is direct, when you open any table you can click on the column header and select pie or bar chart everything will be created automatically.

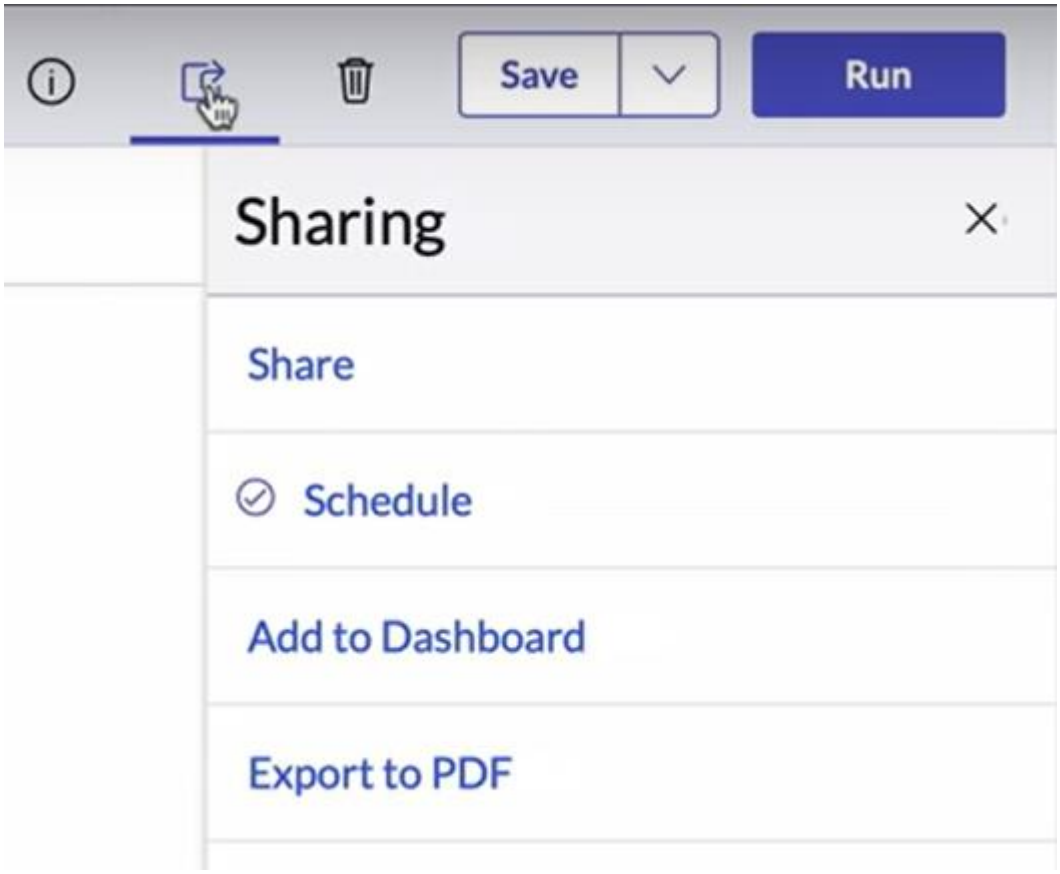
Sample UI of creating a report



➔ Scheduling report can also be done in 2 ways one is directly, after creating a report you can find a share symbol in the top section and can select schedule option and fill the forms that are given and click on submit your report is scheduled. One more useful feature in ServiceNow is we can set the timeline as daily, weekly or monthly. The reports are automatically sent to the email and the users you have selected.

➔ After scheduling you can verify that is scheduled reports table and also can edit them accordingly, here you can also schedule a report by clicking on new.

➔ User can also share these reports with another users or groups , sharing this is very simple , it's the option above scheduling report. Option called share will be available after you click on the share button, then you can select local or global and individual users or groups accordingly.



➔ Image clearly shows all the three options Share, Schedule, Add to Dashboard.
➔ Dashboards consist of various widgets that display data. Widgets can be of different types, including reports, charts, Performance Analytics indicators, lists, scorecards, and more. Users can personalize their dashboards by adding, removing, or rearranging widgets based on their preferences and needs.

LOW CODE / NO CODE Development:

➔ Low Code/No Code Development is an approach to software development that allows users to build applications with minimal hand-coding, using visual interfaces with simple logic and drag-and-drop features.

➔ Over the years all the businesspeople would have to tell their requirements to the IT team several times and repeatedly which would be a big heck for businesspeople, to eliminate this there is LOW CODE / NO CODE Development.

➔ Which eliminates the wall between businesses people and IT team, with this low code / no code development business people can themselves solve business problems using minimal coding and simple features like drag-and-drop.

➔ ServiceNow is one of those companies

Low Code / No Code servicenow

- **App Engine Studio (AES)**: Guided experience for creating everything you need for your low code / no code applications; build tables, import spreadsheets, create workflows, UI's, manage security
- **Studio**: Dig deeper into your applications components and capabilities; IDE
- **Now Experience UI Builder**: Create workspaces and portals via drag-and-drop;
- **Flow Designer**: Use natural language to automate workflows, approvals, tasks, notifications and record operations without writing any code
- **CMDB**: Understand the entirety of your IT infrastructure; the underlying platform upon which your low code / no code apps are built.

➔ There are many companies like Microsoft, Zoho , Salesforce which also use low code / no code development.

➔ By reducing the time and resources needed for development, LCNC platforms lower the costs associated with application development and maintenance.

➔ As businesses continue to seek digital transformation, the adoption of LCNC platforms is expected to grow. They will play a significant role in democratizing application development and making it accessible to a broader audience.