

Team Name: Inventory Enforcer
Team Member: Priyadarshini Ghosh



Inventory Management Process

Created on 8/16/2023



OVERVIEW - CURRENT PROCESS

Start

PHYSICALLY ACCESS THE STOCKROOM

PLACE ORDER ON SNOW FOR LOW STOCK ITEMS

MANUALLY RESTOCK AND RECOUNT ITEMS FROM SCRATCH

ADDITIONALLY, TRANSFER ITEMS FROM STOCKROOM TO REPLENISH THE INVENTORY ON THE SHELVES OUTSIDE AT THE HELP BAR

UNFORTUNATELY THE COUNT OF THE ITEMS TAKEN OUT LACKS TRACKING HISTORY AS WELL

End

Copley Help Bar Stockroom Inventory										
Consumables	10/3		1/24		3/29					
22" Monitors (P2217H, P2219H)	27		10 ✓	-1						
24" Monitors (P2422H)	36		10 ✓	-34	120					
27" Monitors	9		5 ✓							
90W AC Dell Laptop Charger	1									
90W USB-C Dell Laptop Charger	40		90 ✓							
130W USB-C Dell Laptop Charger	25		12		7					
Dell USB-C Docking Station (WD19TBS)	20 *		5 ✓	-5*	-11					
Jabra Headset - 2400 QD	99		74 ✓							
Logitech USB Keyboard (Standalone)										
Logitech USB Keyboard-Mouse (MK200)	22	48	48 ✓							
Logitech C505e Webcam	37		37 ✓							
USB-C to DP Cable	90		50 ✓	-10	52					
TrippLite 3' HDMI Cable	110		110 ✓							
TrippLite 6' DP-DP Cable	110		80 ✓	-10	+40					
Power Strips/Extensions (Wayfair)	16									
TrippLite Surge Protector (in the box)	13									
Ethernet Cable 10 Ft			40 ✓	-15						
Date of Reorder	10/3		11/25							





CURRENT SOLUTION DRAFT 1

APPSHEET
APPLICATION



SUMMARY

Objective :

- The objective of introducing **Appsheet Application** was to create a NO-COST solution for automating inventory management process.
- Using Appsheet will help us manifolds to address the following needs and achieve the associated benefits:

Target Points/Goals :

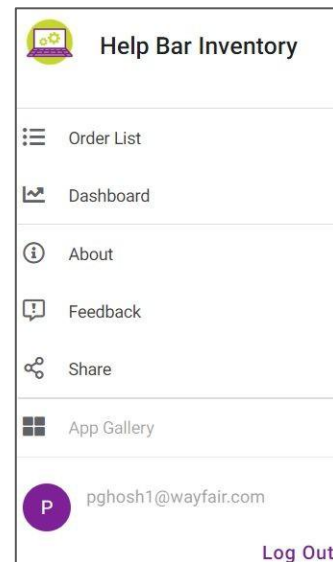
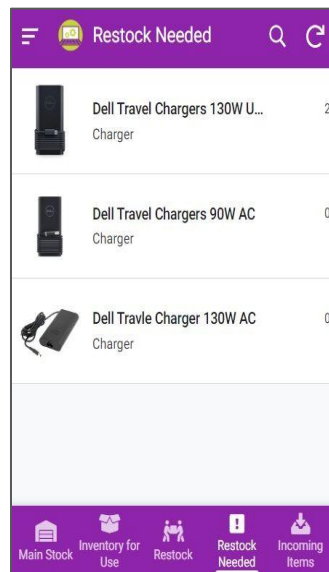
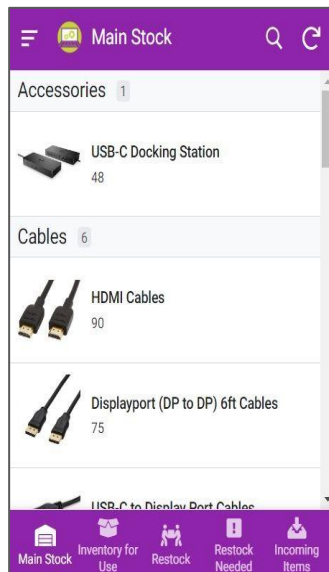
1. **Live Inventory Tracking**
2. **Visual Representation of Low Stock Equipment**
3. **Enhanced Equipment Security**
4. **Easy Inventory Search and Availability**

Software used:

The project was developed using [Google Sheet](#), [Google Appsheet](#) and [App Script](#).
(please click on the above links to get a better understanding of the working model)



APP UI



An info hub article is also created to walkthrough the step by step process of using the application:

<https://infohub.corp.wayfair.com/display/WIT/Help+Bar+Inventory+Management>

SNIPPETS OF THE CODE AND FORMULAS USED

```

function onChange(e) {
  var s = e.source.getActiveSheet();
  var r = e.source.getActiveRange();

  // Column with check-boxes is currently set to column 3
  if(s.getName() == "Order List" && r.getColumn() == 3 && r.getValue() == "In Progress") {
    var row = r.getRow();
    incomingItemsCount(row);
  }

  if(s.getName() == "Order List" && r.getColumn() == 3 && r.getValue() == "Completed") {
    var row = r.getRow();
    completeItemsCount(row);
  }
}

function incomingItemsCount(rowIndex) {
  // Get product quantity values from the "Order List"
  var values = SpreadsheetApp.getActiveSheet().getRange(rowIndex, 4, 1, 14).getValues();

  // Range of target sheet ("Incoming Items")
  var targetSheet = SpreadsheetApp.getActiveSheet().getSheetByName("Incoming Items");
  var targetValues = targetSheet.getRange(2, 1, targetSheet.getLastRow(), targetSheet.getLastColumn()).getValues();

  for(i=0; i<values[0].length; ++i) {
    // Check if not empty
    if(values[0][i] != "") {
      for(j=0; j<targetValues.length; ++j) {
        if(values[0][i] == targetValues[j][0]) {
          targetSheet.getRange(j+2, 2, 1, 1).setValue(values[0][i+1]);
        }
      }
    }
  }

  var targetSheet = SpreadsheetApp.getActiveSheet().getSheetByName("Incoming Items");
  var targetValues = targetSheet.getRange(2, 1, targetSheet.getLastRow(), targetSheet.getLastColumn()).getValues();





  // Range of dashboard sheet
  var dashboardSheet = SpreadsheetApp.getActiveSheet().getSheetByName("Dashboard/Analytics");
  var dashboardValues = dashboardSheet.getRange(2, 1, dashboardSheet.getLastRow(), dashboardSheet.getLastColumn()).getValues();

  for(i=0; i<values[0].length; ++i) {
    // Check if not empty
    if(values[0][i] != "") {
      // Loop for incoming items sheet
      for(j=0; j<targetValues.length; ++j) {
        if(values[0][i] == targetValues[j][0]) {
          targetSheet.getRange(j+2, 2, 1, 1).setValue("");
        }
      }

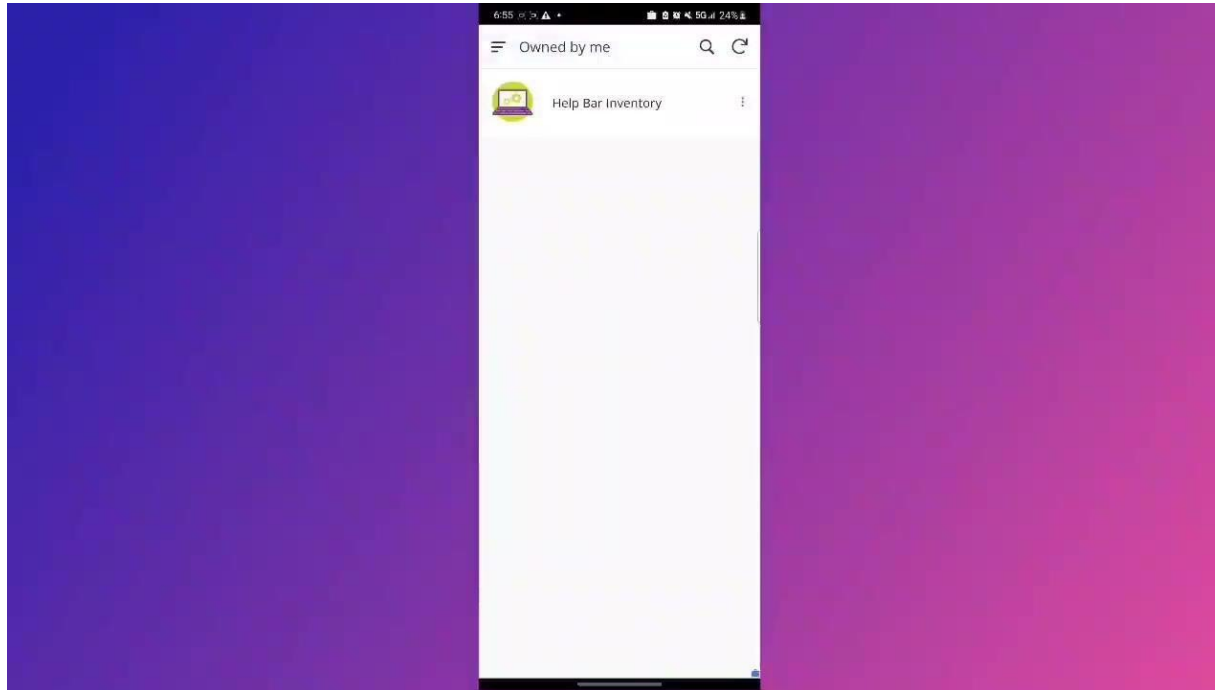
      // Loop for dashboard
      for(j=0; j<dashboardValues.length; ++j) {
        if(values[0][i] == targetValues[j][0]) {
          var currVal = dashboardSheet.getRange(j+2, 2, 1, 1).getValue();
          dashboardSheet.getRange(j+2, 2, 1, 1).setValue(currVal + values[0][i+1]);
        }
      }
    }
  }
}

```

USB-C Docking Station	0	USB-C Docking Station	48
Logitech Keyboards	15	Logitech Keyboards	8
HDMI Cables	75	HDMI Cables	75
Displayport (DP) to DPI 6ft Cables	0	Displayport (DP) to DPI 6ft Cables	0
USB-C to Display Port Cables	0	USB-C to Display Port Cables	0
Logitech Webcams	22	Logitech Webcams	0
Dell Travel Chargers 90W USB-C	0	Dell Travel Chargers 90W USB-C	37
Dell Travel Chargers 130W USB-C	3	Dell Travel Chargers 130W USB-C	0
Dell Travel Chargers 90W AC	0	Dell Travel Chargers 90W AC	0
Dell Travel Charger 130W AC	0	Dell Travel Charger 130W AC	0
Jabra Headset - 2400 QD	69	Jabra Headset - 2400 QD	105
Dell P2217H Monitor	0	Dell P2217H Monitor	0
Dell Inc. 27" Monitor	15	Dell Inc. 27" Monitor	17
Dell Inc. 24" Monitor	2	Dell Inc. 24" Monitor	14
Ethernet Cables 10ft	0	Ethernet Cables 10ft	0
Ethernet Cables 30ft	0	Ethernet Cables 30ft	0

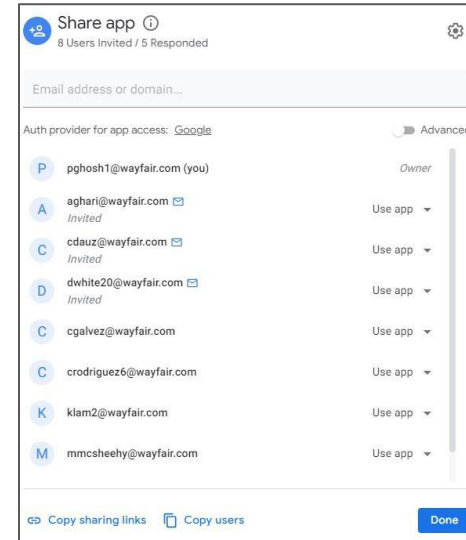
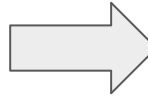
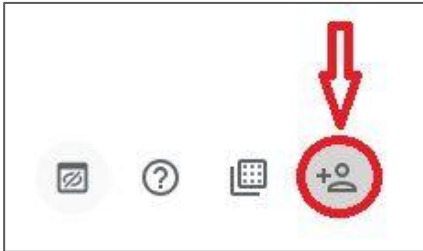
Product	Category	Image	Initial Stock	Low Stock Threshold	Current Stock
USB-C Docking Station	Accessories		20	48	0
Logitech Keyboards	Peripherals		10	80	0
HDMI Cables	Cables		90	20	90
Displayport (DP) to DPI 6ft Cable	Cables		75	20	75
USB-C to Display Port Cables	Cables		30	20	30
Logitech Webcams	Peripherals		129	20	107
Dell Travel Chargers 90W USB-C	Charger		15	37	0
Dell Travel Chargers 130W USB-C	Charger		5	10	2
Dell Travel Chargers 90W AC	Charger		0	10	0
Dell Travel Charger 130W AC	Charger		0	10	0
Jabra Headset - 2400 QD	Peripherals		80	20	116
Dell P2217H Monitor	Monitors		75	10	78
Dell Inc. 27" Monitor	Monitors		5	7	17
Dell Inc. 24" Monitor	Monitors		4	8	14
Ethernet Cables 10ft	Cables		50	10	50
Ethernet Cables 30ft	Cables		29	20	29
Monitor Cables	Cables		60	20	60
Logitech Wired Mouse	Peripherals		108	20	92
Dell Power Adapter 180W	Charger		90	20	90
					0
					0
					0
					0
					0

VIDEO DEMO



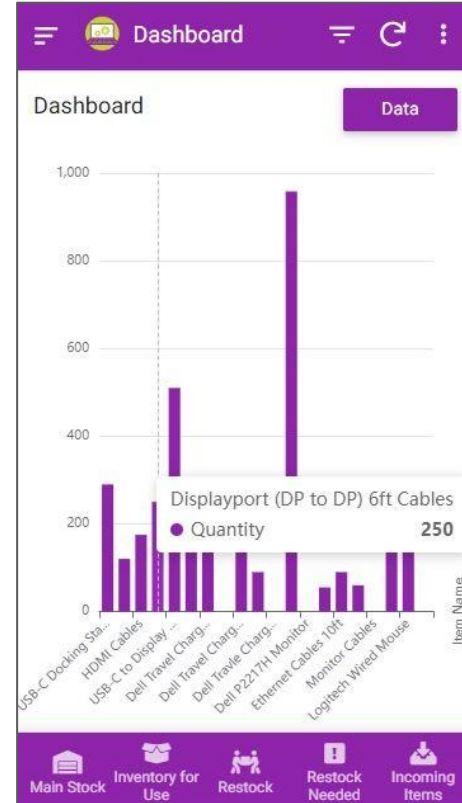
EXTENDING THE ACCESSIBILITY OF THE APP WITH OTHER TEAMS

1. The app will also enable other teams to view the live inventory count of the Help Bar Stockroom, this can be accomplished by sharing 'view' only access to specific members from other team.
2. For instance, Help Bar team frequently works with the Asset Management Team to ensure stock replenishment. During this process, it becomes essential to for both the teams to stay up to date with the live inventory counts.
3. The app extends its access to other team members and will help them to stay informed about the threshold values and low stock items.



DASHBOARD ANALYTICS

- The App is integrated with the Google Sheet in such a manner that everytime an order of a certain item is placed, it would automatically also update the count on the Dashboard menu of the application as shown below.
- This will help to keep a track of the total number of items that has been ordered. We can further introduce more modifications depending on the team's preferences and other reporting parameters.



LIMITATIONS

- The App can only be integrated with Gsuite Applications (eg - Appscript and GoogleSheet).
- The App doesn't have the ability to integrate with ServiceNow due to which **few manual tasks cannot be avoided:**
 - The team members would still have to manually place the order using Wayfair Assist
 - The team members would still have to manually update the stock on the [ServiceNow page](#)
- The **App currently uses Google Sheet as its Database** which might not necessarily be the best solution for the long run since it is not very scalable and secure. Moreover, it is not the best tool for searching, filtering or building complex databases.





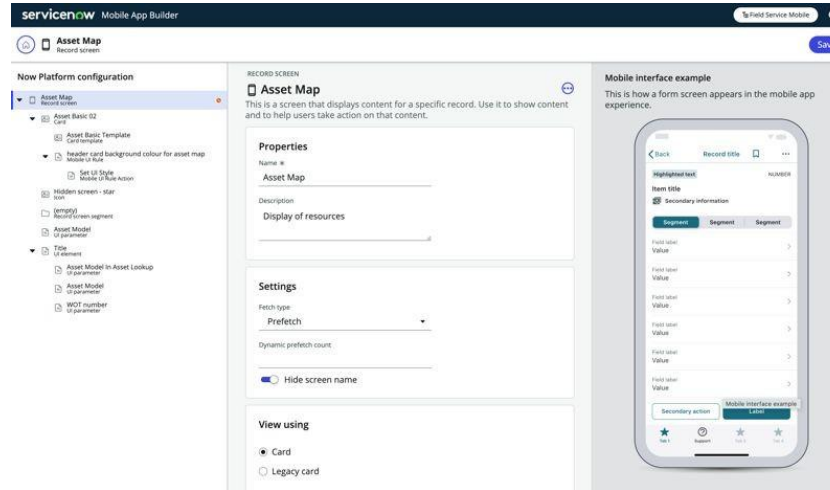
PROPOSED SOLUTION DRAFT 2

servicenow

DEVELOPING A SERVICE NOW
APPLICATION

SERVICENOW MOBILE APP BUILDER

- We can create an app in ServiceNow using [ServiceNow Mobile App Builder](#).
- The app should be able to acquire the data with the use of APIs since ServiceNow doesn't allow third-party services to update the data.
- Moreover, [ServiceNow Mobile App Builder](#) would allow us to build app with better integration and automation capabilities.



Solution has always been right in front of us!

EXECUTION PLAN

DESIGN DATA MODEL

**CONFIGURE SERVICENOW
MOBILE APP BUILDER**

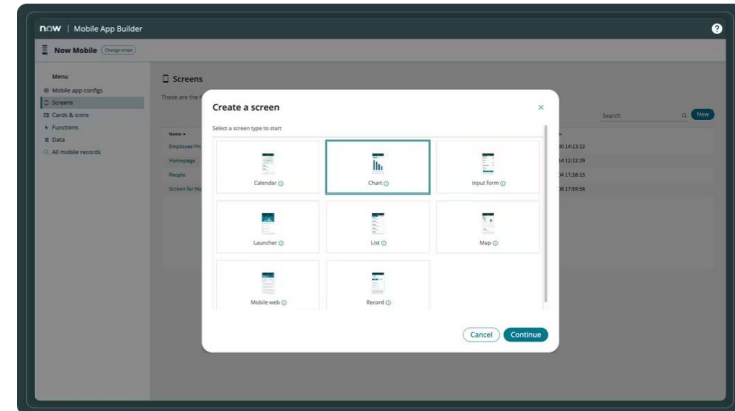
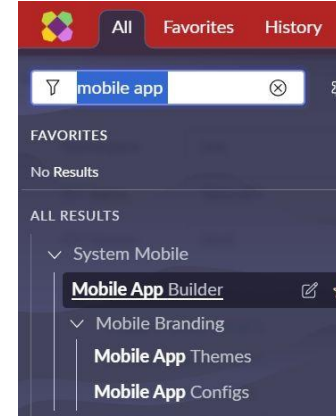
APP DESIGN

DATA INTEGRATION

**WORKFLOW AND
AUTOMATION**

USER ACCESS AND SECURITY

TESTING AND DEPLOYMENT



EXECUTION PLAN

DESIGN DATA MODEL

CONFIGURE SERVICENOW
MOBILE APP BUILDER

APP DESIGN

DATA INTEGRATION

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TESTING AND DEPLOYMENT

Ok. Let's create a table for this app

If you want to create more than one, we'll do them one at a time.



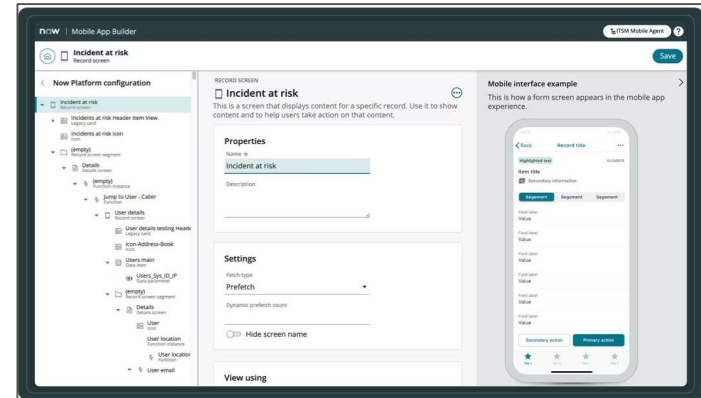
Upload spreadsheet



Extend a table



Create table from scratch



Advantages

Functionality:

1. **Collaborative Team Access:** The app promotes collaboration by allowing different team members to access it based on their roles. For example, the asset management team can update incoming orders as "Delivered", eliminating the need for the help bar team to manually update the quantity of the product delivered. This ensures real-time updates and accuracy in the ServiceNow database.
2. **Automating the process even further:** Place orders immediately for items low on stock by checking the item's low stock threshold values as well as notify via email/slack about the low stock items to the team members
3. **Updates Across Instances:** Updates made within the app are automatically synchronized across all instances within the deployed scope. This simplifies the maintenance process throughout the development cycle, saving time and reducing the risk of discrepancies.
4. **Configuration Management:** The "Publish to Update Set" feature simplifies configuration management. This means you no longer need to handle multiple update sets, as all configurations are encapsulated within the single application framework.

Advantages

Security:

1. **User access control:** ServiceNow allows us to restrict users based on their roles (eg. it-help-bar) and scope of the application it is deployed to (eg. global). This ensures that only authorized users from specific teams can access and manage the inventory data.
2. **Code protection:** Unlike Google Sheets, where anyone with editable access to the sheet can also make changes to the scripts and certain functionalities, ServiceNow prevents this from happening. When deploying the app, we have the option to make the scripts read-only or even hide them, protecting our intellectual property.
3. **Data Manipulation Safeguards:** ServiceNow adds an additional security layer to prevent external applications from tampering with your data and schema. This ensures the integrity of the application and its database.

LET'S DISCUSS!



References

[Mobile App Builder](#)

[Create a table in Guided Application Creator](#)

[Building and configuring mobile apps](#)

~THE END~

THANK YOU