NSMIT 3D Printing Inventory App Display

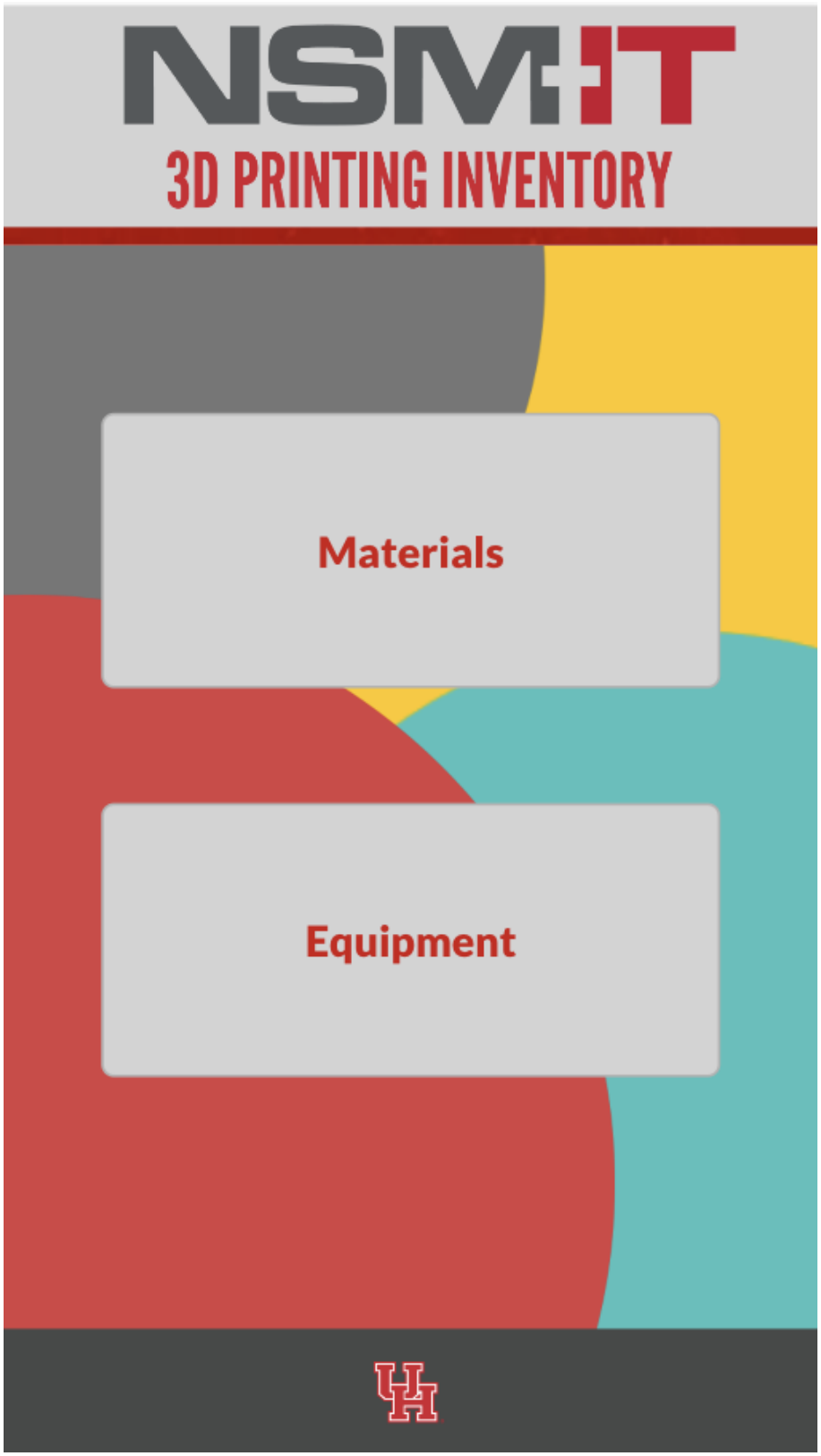
Introduction

The NSMIT 3D Printing Inventory App is a custom-built, mobile-friendly SaaS solution designed for efficient inventory management within a university makerspace or technical department. Leveraging Microsoft Power Apps with a modern FX front-end and backed by two SharePoint Lists, the app replaces cumbersome manual data entry with a streamlined, automated interface. Integrations with Microsoft 365 and Azure Services ensure secure access and real-time data updates.

App Walkthrough

App Home Screen

The home screen acts as the main dashboard for the NSMIT 3D Printing Inventory App. It presents two clearly defined navigation buttons: 'Materials' and 'Equipment.' The UI is optimized for touch on mobile devices, with large, accessible buttons and vibrant colors consistent with UH branding. Users can quickly begin inventory management tasks by selecting the relevant category.



Materials Inventory List

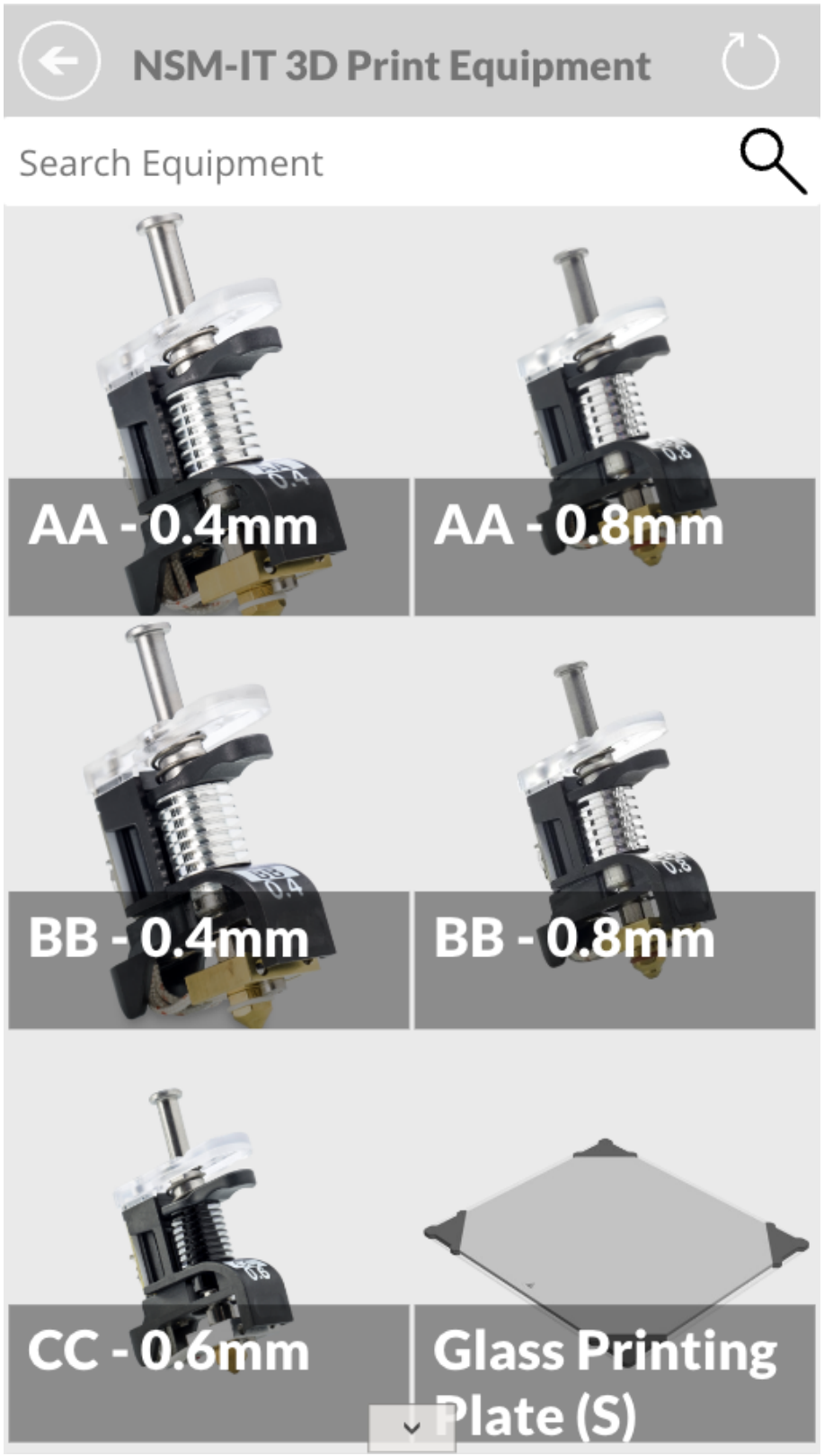
Upon selecting 'Materials,' users see a searchable grid of all filament and material types used for 3D printing, each visually represented with real images and manufacturer names. The search bar enables fast filtering-ideal for large inventories. Tiles ensure that staff and students can instantly recognize and select the material they need to update or audit.

Material Color Quantity Management

Selecting a material brings up a full list of all its color variations. Each color has its own quantity field and intuitive plus/minus buttons, allowing users to increase or decrease stock. Direct editing in the center box ensures speed and reduces data entry errors. All changes are instantly synced to SharePoint in the cloud, making sure inventory is always up to date and accessible across devices.

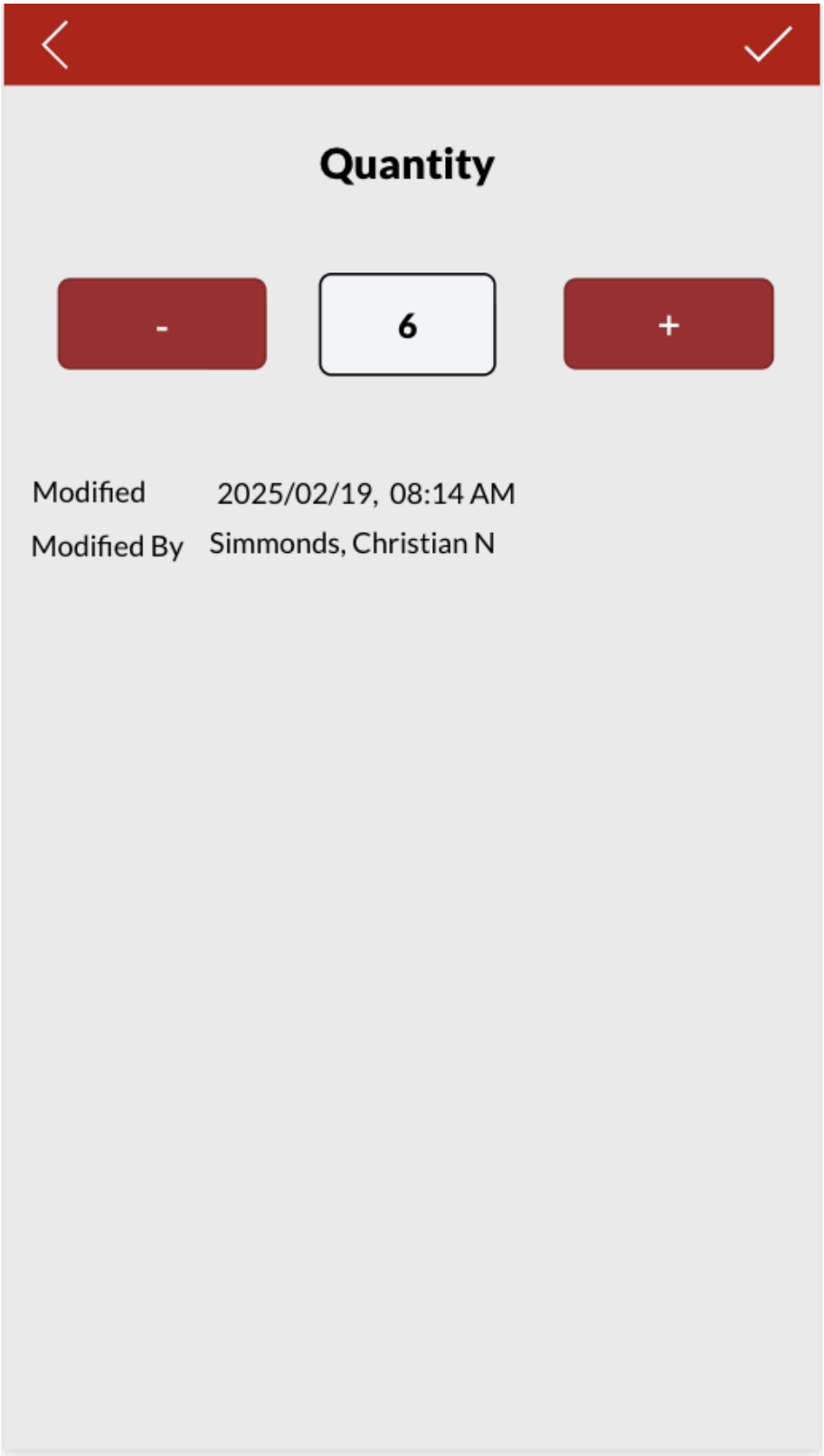
Equipment Inventory List

Choosing 'Equipment' on the home screen takes users to a similar grid view, this time displaying all printer parts and critical accessories, such as extruders and print beds. Each equipment type is shown with a photo and model or size label, making it easy for users to locate the exact item in stock. The search bar offers quick filtering for large collections of equipment.



Edit Equipment Quantity

Clicking on an equipment item leads to a focused detail screen where the user can adjust the items current stock. The interface includes plus/minus buttons for error-free updates, a text field for direct number entry, and displays the last modified timestamp and the user responsible for the change. This ensures full accountability and an auditable change history, helping manage maintenance cycles and reduce inventory discrepancies.

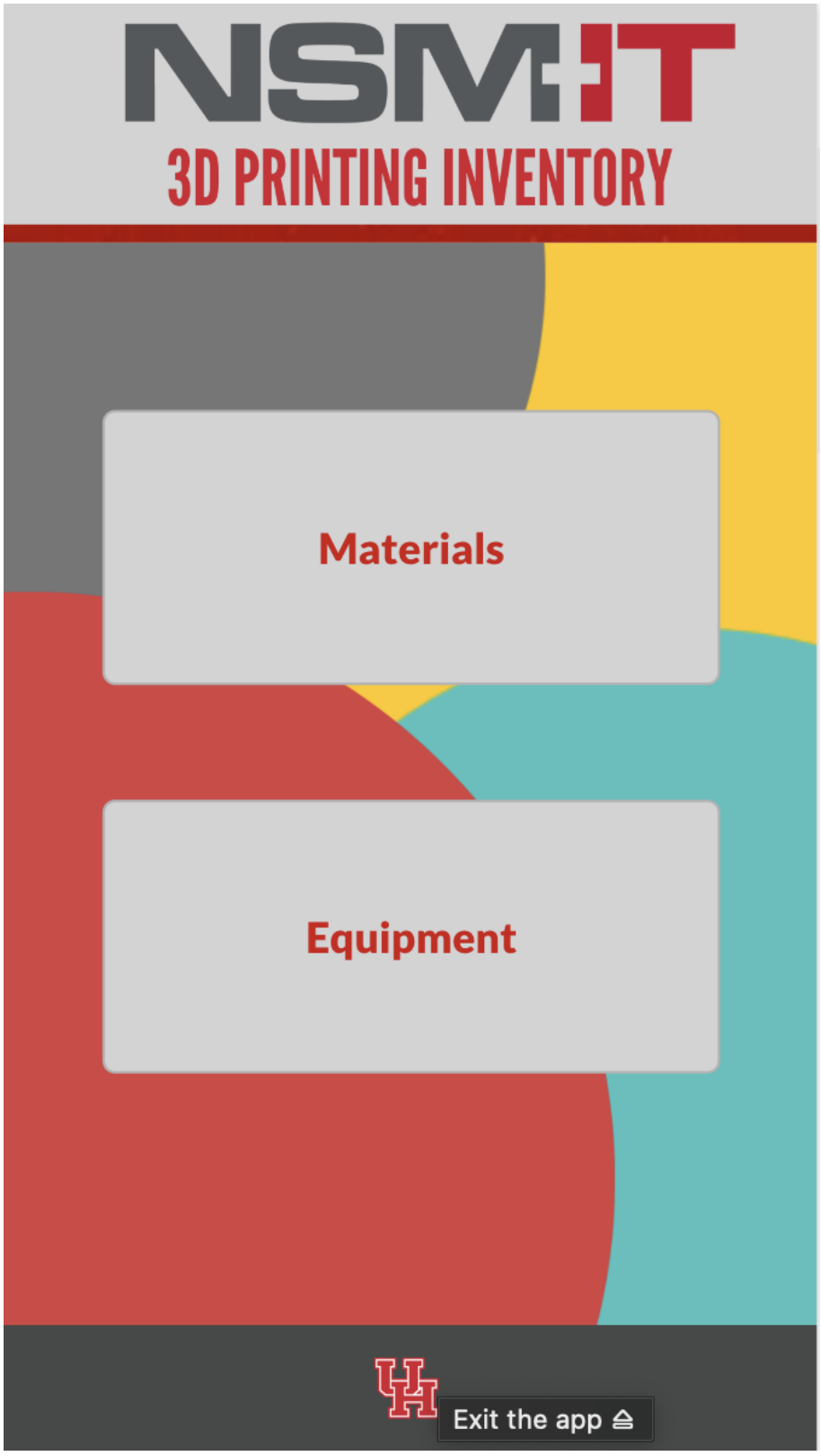


Success Confirmation

After any update, users see a bold, visual confirmation screen that clearly states 'SUCCESS!' along with a green check mark. This removes ambiguity and ensures users know their changes have been safely saved to the cloud. Icon-based navigation at the bottom lets users return home, log out, or proceed to further actions, improving the workflow for multiple updates.

App Exit and Branding

Returning to the home screen, users are provided with a safe and clear way to exit the app. The University of Houston branding is featured prominently, reinforcing institutional identity. The bottom navigation ensures users are never lost and can end their session with confidence.



Technical Overview

- Front-End: Built using Microsoft Power Apps FX for a responsive, mobile-friendly UI.
- Back-End: Utilizes two SharePoint Lists (Materials & Equipment) for real-time, cloud-based inventory management.
- Authentication: Integrated with Microsoft 365 for secure, role-based access.
- Cloud Sync: Powered by Azure Services, ensuring reliable storage and up-to-date information across all devices.
- Automation: Automated quantity updates, change logging (with timestamps and user tracking), and visual feedback.
- Accessibility: Designed for both desktop and mobile use, so staff can manage inventory anywhere.

Key Features

- Automated Inventory Tracking: Updates are reflected instantly across the organization, reducing manual entry errors.
- Visual, Intuitive Interface: Use of real images and clear navigation makes the app usable for both technical and non-technical staff.
- Real-Time Search and Filtering: Find any material or equipment in seconds, even in large inventories.
- Auditable Change History: Every update is logged with the date/time and user for full transparency.
- Mobile-First: Designed for tablets and phones for inventory management on the go.
- Easy Extension: Additional materials, colors, or equipment can be added easily via SharePoint.

Software Used

- Microsoft Power Apps
- Microsoft SharePoint
- Microsoft 365
- Azure Services

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