Beta Presentation
Product Lifecycle Tracing System

The Capstone Experience

Team MillerKnoll

Keshav Babu
Ashley Jarria
Felix Liang
David Xiong
Mohammad Zaman

Department of Computer Science and Engineering
Michigan State University
Spring 2024
Project Overview

• MillerKnoll is a made-to-order furniture company with a lot of unique data
• Software provides insight into product to part relationships and effects of discontinuation
• Supports supply and product in making informed decisions regarding production volumes
System Architecture

Product Lifestyle Tracing System

- **Back End**
  - express
  - Next.js

- **Front End**
  - React

- **Web Host**
  - Vercel

- **DevOps**
  - docker
  - CI/CD

- **MillerKnoll Data**
  - snowflake

- **End-User**
Product Reference Lookup

M16-1518-BFSSHFT2KAH1C

Standard-Pull Mobile Pedestal

Item: 0000698345
Project ID: Z40281
Line: MP
Type: Manufactured
Product to Parts

![Image of MillerKnoll dashboard]

**Product Lookup Tool**

**Part to Products**

**Product Flowchart**

---

**MillerKnoll**

**Product to Parts**

### Results for "M16-1518-BFSSHT2KAH1C"

<table>
<thead>
<tr>
<th>ID</th>
<th>Parent</th>
<th>Company</th>
<th>Description</th>
<th>Item Type</th>
<th>Item Group</th>
<th>Supplier</th>
<th>Supplier Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1BODXM</td>
<td>M16-1518-BFSSHT2KAH1C</td>
<td>107</td>
<td>DRW COMPRESSOR ASY (15) 11.9*8.5</td>
<td>Purchased</td>
<td>150000</td>
<td>88127</td>
<td>ROYAL TECHNOLOGIES CORPORATION</td>
</tr>
<tr>
<td>0104/1088</td>
<td>M16-1518-BFSSHT2KAH1C</td>
<td>107</td>
<td>BLACK NYLON WASHER HAND GRIP</td>
<td>Purchased</td>
<td>180000</td>
<td>40081</td>
<td>ENDRIES INTERNATIONAL INC</td>
</tr>
<tr>
<td>101/016</td>
<td>M16-1518-BFSSHT2KAH1C</td>
<td>107</td>
<td>10-16*1/2 PH PAN #2 TEK BLACK</td>
<td>Purchased</td>
<td>180000</td>
<td>40081</td>
<td>ENDRIES INTERNATIONAL INC</td>
</tr>
<tr>
<td>1B2K8G</td>
<td>M16-1518-BFSSHT2KAH1C</td>
<td>107</td>
<td>#8*5 PH TYPE A SCREW</td>
<td>Purchased</td>
<td>150000</td>
<td>40081</td>
<td>ENDRIES INTERNATIONAL INC</td>
</tr>
<tr>
<td>1BPDJ0</td>
<td>M16-1518-BFSSHT2KAH1C</td>
<td>107</td>
<td>SCREW - 10-32, RELAY PULL</td>
<td>Purchased</td>
<td>020000</td>
<td>40081</td>
<td>ENDRIES INTERNATIONAL INC</td>
</tr>
</tbody>
</table>
Simulating Product Discontinuation

The image shows a screenshot of a product discontinuation simulation tool. The tool displays a list of components with their ItemIDs and descriptions. The components include:

- **ItemID**: 1BH5V4, Description: 10-16 X 1/2" TAPPING SCREW
- **ItemID**: 1BD0XM, Description: DRW COMPRESSOR ASY(15)/11.9*8.5
- **ItemID**: 0104/1088, Description: BLACK NYLON WASHER-HAND GRIP
- **ItemID**: 101/016, Description: 10-16 X 1/2 PH PAN #2 TEK-BLACK
- **ItemID**: 1B2K8G, Description: #8*.5 PH TYPE A SCREW
- **ItemID**: 1BPDJ0, Description: SCREW - 10-32, RELAY PULL
- **ItemID**: PK-0006484671, Description: HMI Paint Kit
- **ItemID**: 1B233H, Description: RIVET
- **ItemID**: 101/058, Description: 6-32X1/4 PH PAN-SEMS W/ NYLOCK
- **ItemID**: 1864K1, Description: PAD - HONEYCOMB 19.3125
Part to Products

<table>
<thead>
<tr>
<th>CFG_DESC</th>
<th>COMPANY</th>
<th>ITEM</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW400.4226SSLUKA</td>
<td>107</td>
<td>0000994136</td>
<td>11</td>
</tr>
<tr>
<td>46-3615-OB-68SSWLT1NS4B2</td>
<td>107</td>
<td>0000389039</td>
<td>9</td>
</tr>
<tr>
<td>4LT.K152042LS598NTCHMSKAB2</td>
<td>107</td>
<td>0018766483</td>
<td>4</td>
</tr>
<tr>
<td>LQ400D.3026XS91KANH</td>
<td>107</td>
<td>0002316218</td>
<td>11</td>
</tr>
<tr>
<td>F16-1522-BBFSS8QT1KAB2NOC</td>
<td>107</td>
<td>0002722350</td>
<td>4</td>
</tr>
<tr>
<td>M16-1518-BBFSS1210T1KDH1DC</td>
<td>107</td>
<td>0001796797</td>
<td>4</td>
</tr>
<tr>
<td>4LH.K30202RX598NTBKKAB2</td>
<td>107</td>
<td>0002984520</td>
<td>16</td>
</tr>
<tr>
<td>SA876477</td>
<td>107</td>
<td>0002982438</td>
<td>4</td>
</tr>
<tr>
<td>LW400.4226SSCNKA</td>
<td>107</td>
<td>0000968687</td>
<td>11</td>
</tr>
<tr>
<td>26-3020-3N5S98T1KAB2CB9P</td>
<td>107</td>
<td>0002984939</td>
<td>5</td>
</tr>
<tr>
<td>LG500.4264XSG1</td>
<td>107</td>
<td>0000954593</td>
<td>9</td>
</tr>
</tbody>
</table>
Flowchart
What’s left to do?

Stretch Goals

- Replace Bynder Images
- Combine Product Flowchart / Product to Part Tabs
- Generate Reports for Discontinuable Products

Other Tasks

- Clean up/Refactor Code
- Stress Testing
- Integrate with Sponsor System
Questions?