Beta Presentation
Training Scheduling and Optimization System

The Capstone Experience
Team United Airlines

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From Students…
…to Professionals

Department of Computer Science and Engineering
Michigan State University
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Project Overview

• Course scheduling system for maintenance training
• Instructor time tracking
• Rosters and attendance tracking
• Optimizer that suggests a course based on inputted attributes
System Architecture

Web App

node

iOS App

Web Service

Web Service

REST API

Back-End

Entity Framework Core

ASP.NET Core

C#
Course Schedule
# Exceptions

![Learning Scheduling System](https://localhost:44337/exceptions)

<table>
<thead>
<tr>
<th>Action</th>
<th>Instructor</th>
<th>Point</th>
<th>Exception</th>
<th>Start Date</th>
<th>End Date</th>
<th>Request Time</th>
<th>Supervisor</th>
<th>Response Time</th>
<th>Request Comment</th>
<th>Response Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>Butter, Julie</td>
<td>SFO</td>
<td>Instructing Course</td>
<td>4/1/19</td>
<td>4/5/19</td>
<td>3/20/19, 11:07 AM</td>
<td>Spair, Alex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>Or. Instruct.</td>
<td>EWR</td>
<td>BH: Birthday Holiday</td>
<td>5/27/19</td>
<td>5/28/19</td>
<td>3/27/19, 02:4 PM</td>
<td>Visor, Super</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>Or. Instruct.</td>
<td>EWR</td>
<td>AH: Anniversary Holiday</td>
<td>4/7/19</td>
<td>6/7/19</td>
<td>3/27/19, 6:15 PM</td>
<td>Visor, Super</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>Or. Instruct.</td>
<td>EWR</td>
<td>ANP: Authorized No Pay</td>
<td>4/7/19</td>
<td>6/7/19</td>
<td>3/27/19, 6:12 PM</td>
<td>Visor, Super</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>Bessel, Curie</td>
<td>NHC</td>
<td>VAC: Vacation</td>
<td>6/20/19</td>
<td>6/21/19</td>
<td>2/23/19, 02:4 PM</td>
<td>Robinson, Brody</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>Robinson, Spans</td>
<td>SFO</td>
<td>VAC: Vacation</td>
<td>4/10/19</td>
<td>6/25/19</td>
<td>2/20/19, 03:35 PM</td>
<td>Garvey, Friedman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denied</td>
<td>Shel, Augy</td>
<td>SFO</td>
<td>Instructing Course</td>
<td>3/17/19</td>
<td>9/20/19</td>
<td>2/20/19, 03:35 PM</td>
<td>Robinson, Brody</td>
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<tr>
<td>Denied</td>
<td>Bessel, Curie</td>
<td>NHC</td>
<td>Instructing Course</td>
<td>3/13/19</td>
<td>5/20/19</td>
<td>2/20/19, 03:35 PM</td>
<td>Robinson, Brody</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
## Training Requests

![Image of training requests in the Learning Scheduling System](image)

### Table: Training Requests

<table>
<thead>
<tr>
<th>Action</th>
<th>Course</th>
<th>Location</th>
<th>Needed By</th>
<th>Shift</th>
<th>Reason</th>
<th># of Students</th>
<th>Requested By</th>
<th>Requested Time</th>
<th>Contact</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>77FAI: 777 Systems Avionics (2 Week)</td>
<td>EWR</td>
<td>4/27/19</td>
<td>Swings</td>
<td>Operational</td>
<td>111</td>
<td>Nator, Coordi</td>
<td>3/27/19, 6:33 PM</td>
<td><a href="mailto:libiamm@mssu.edu">libiamm@mssu.edu</a> 657884584586</td>
<td></td>
</tr>
<tr>
<td>Denied</td>
<td>67SAI: 767 Systems Avionics (2 Week)</td>
<td>BOM</td>
<td>5/1/19</td>
<td>Swings</td>
<td>New Hires</td>
<td>20</td>
<td>Nator, Coordi</td>
<td>3/31/19, 3:19 PM</td>
<td><a href="mailto:fastr@United.com">fastr@United.com</a> 1234657</td>
<td></td>
</tr>
<tr>
<td>Denied</td>
<td>67SAI: 767 Systems Avionics (2 Week)</td>
<td>CLE</td>
<td>5/1/19</td>
<td>Swings</td>
<td>Shift Bid</td>
<td>5</td>
<td>Nator, Coordi</td>
<td>3/31/19, 4:48 PM</td>
<td><a href="mailto:phtito@United.com">phtito@United.com</a> 1234546</td>
<td></td>
</tr>
<tr>
<td>Denied</td>
<td>737RELCT: 737 Reliability Training</td>
<td>BOS</td>
<td>6/20/19</td>
<td>Days</td>
<td>Operational</td>
<td>555</td>
<td>Nator, Coordi</td>
<td>3/31/19, 6:24 PM</td>
<td>bbb@lokkk 55544433543</td>
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<tr>
<td>Denied</td>
<td>ECCL: Eddy Current Level II</td>
<td>BOM</td>
<td>5/31/19</td>
<td>Mids</td>
<td>Other</td>
<td>446</td>
<td>Nator, Coordi</td>
<td>3/31/19, 6:32 PM</td>
<td>vgna@kio 11345467778</td>
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</tbody>
</table>

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The Capstone Experience

Team United Airlines Beta Presentation
Optimizer

Optimize a Course

Course
37PNEU: B737 Pneumatic System Troubleshooting (Hours: 16, Max Size: 6)

Location
EWR

Instructor
Dale, Brnaba

Start Date
2019-04-02

End Date
2019-04-20

Cancel
Optimize
iOS Application

The Capstone Experience

Team United Airlines Beta Presentation
What’s left to do?

• UI enhancements
• Performance enhancements
• Bug fixes and stability
• Form feedback and user interaction
Questions?