IPRO 308

Web Applications for the Northern IL Hockey League
The Northern Illinois Hockey League is the largest youth hockey league in Illinois, serving over 300 youth teams and over 4,000 players.
Problem
NIHL PROBLEMS

- 3,500 games are played each season with a hand scheduled matchmaking system
- Their score reporting system requires over 200 team managers to fax completed game reports to a outsourced league statistician
- An elaborate manual process for the various hockey divisions to establish their schedules and locations for the seeding round games every year
TEAM STRUCTURE

Documentation and Testing
- Christopher Savage
- Kristin Lucchesi
- Kryzystof Bartus
- Colin Scheer

Coding Team
- Vladimir Semenov
- William Perkins
- Julian Hays
- Dustin Barksdale
- Mantas Vidutis
OBJECTIVES

- Research NIHL’s current scheduling and scoring process
- Develop web-based scheduling and scoring applications that can support its annual operations
- Test and debug the web-based applications
- Integrate our application onto their existing site
- Create a user manual for the users of our applications
PROJECT APPROACH

Phase I: Research & Design
- Study and evaluate NIHL's current scheduling and matchmaking process
- Create the site map and logic algorithms for our applications

Phase II: Development
- Code the application as well as make the user manual and help sections

Phase III: Testing & Refinement
- Input data and test algorithms of the application.
- Perform debugging
SOFTWARE DEVELOPMENT PROCESS
RESEARCH

- We personally observed NIHL’s current matchmaking process

- We also analyzed NIHL’s current statistics forms and regulations
DESIGN

Home
- Season
  - Create
  - Edit
  - Post Stats
  - Edit (48hr)
- Login
- Browse Stats
  - Manage Stats
- Browser Schedule
  - Manage Schedule
  - Post Home Games
  - Select Away
  - Confirms Games
- Teams
  - Create
  - Edit
  - Delete
- Rinks
  - Create
  - Edit
  - Delete
- Clubs
  - Create
  - Edit
  - Delete
- Divisions
  - Create
  - Edit
  - Delete
- Email/Com
- Help

Red-Manage
Blue-Super Admin
MATCHMAKING ALGORITHM

- Analyzes team listings and generates matches automatically

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### Seeding Matchups (2009 Season)

<table>
<thead>
<tr>
<th>Home Team</th>
<th>Away Team</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Mite Elite] Falcons #1</td>
<td>[Bantams Elite] Vikings #1</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
<td>[Mite Elite] Falcons #1</td>
<td>[Peewees Silver T2] Bruins #2</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
<td>[Mite Elite] Falcons #1</td>
<td>[Squirts Silver T2] Jets #2</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
<td>[Mite Elite] Falcons #1</td>
<td>[Mite Silver T2] Wilmette #3</td>
<td>Away team has not picked a date yet.</td>
</tr>
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<td>[Mite Silver T1] Bruins #1</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
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<td>[Mite Elite] Express #1</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
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<td>[Mite Silver T1] Bruins #1</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
<td>[Mite Elite] Falcons #1</td>
<td>[Mite Silver T2] Wilmette #3</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
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<td>[Peewees Silver T2] Bruins #2</td>
<td>Away team has not picked a date yet.</td>
</tr>
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<td>[Bantams Elite] Vikings #1</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
<td>[Mite Elite] Falcons #1</td>
<td>[Squirts Silver T2] Jets #2</td>
<td>Away team has not picked a date yet.</td>
</tr>
<tr>
<td>[Mite Silver T1] Vikings #2</td>
<td>[Mite Elite] Falcons #1</td>
<td>Waiting for home rink schedule.</td>
</tr>
<tr>
<td>[Mite Silver T1] Vikings #2</td>
<td>[Mite Elite] Falcons #1</td>
<td>Waiting for home rink schedule.</td>
</tr>
<tr>
<td>[Mite Silver T2] Blues #2</td>
<td>[Mite Elite] Falcons #1</td>
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</tr>
<tr>
<td>[Mite Silver T2] Blues #2</td>
<td>[Mite Elite] Falcons #1</td>
<td>Waiting for home rink schedule.</td>
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</table>
STATISTICS

➢ Allows team managers to update statistics via a web browser

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<thead>
<tr>
<th>Team</th>
<th>Level</th>
<th>Division</th>
<th>GP</th>
<th>Wins</th>
<th>Losses</th>
<th>Ties</th>
<th>PTS</th>
<th>GF</th>
<th>GA</th>
<th>+/-</th>
<th>SOG</th>
<th>TPM</th>
<th>GFA</th>
<th>AVG</th>
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</tbody>
</table>
TESTING & REFINEMENT

- Created test cases to cover all possible scenarios
- Executed test cases against final application version
- Re-executed test cases until all bugs have been eliminated
OBSTACLES

- Difficulties acquiring test data from NIHL
- Getting all the separate parts of the application to work together
- Making the interface intuitive and user-friendly
- Not everyone had experience with development environment we used
ETHICAL CONSIDERATIONS

- Focused on developing the application specifically for NIHL and not a general sports league
- Ensured that none of the code, images or templates we used were copyrighted
- Made a secure system that can not be infiltrated
- Privacy concerns for all the children and adults associated with the NIHL
NEXT PHASE

- User acceptance testing
- Deployment to Production Environment
SITE DEMONSTRATION

- Example of scheduling a game and entering statistics
QUESTIONS?