Pick-A-Spot: Parking Occupancy Monitor
BLUE A
Parking and Transportation Office

Problem:
- 6000 drivers (parkers)
- 4300 spots
- No notification system to determine when lots are full
Existing Products

- Pneumatic Tubes
  - Tubes are easily damaged

- Loop Counters
  - $23,000 per garage; hard to install

- CCTV Video Cameras
  - $45,000 per garage

- Acoustic Devices
  - $40,000 per garage
Our Solution

- Cheap
- Easily Installable
- Easy-to-understand User Interface
CAD Model of Parking Sensor
Parking Lot Sensor Implementation

[Diagram showing a parking lot with a section for open spaces, LCD screen, and sensor platforms for entry and exit.]
How it works

1. **Car Passes over sensors**
2. **Sensors Acknowledge Data**
3. **Sensors Send Data to MicroComputer**
4. **Display changes accordingly**
   - **LED Lights so easy to see in daylight and at nighttime**
5. **MicroComputer adds/subtracts count depending on which sensors went off**
## Materials and Cost

<table>
<thead>
<tr>
<th>Materials</th>
<th>Quantity</th>
<th>Cost per Unit ($)</th>
<th>Cost Totals ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED Monitor to Display Open Spots</td>
<td>1</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Anti-fatigue Rubber Base</td>
<td>1</td>
<td>92</td>
<td>92</td>
</tr>
<tr>
<td>Force Plate Sensors</td>
<td>4 (1 per Sensor Pad)</td>
<td>120</td>
<td>480</td>
</tr>
<tr>
<td>Micro Computer</td>
<td>1</td>
<td>275</td>
<td>275</td>
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<tr>
<td>Total Product (4 Sensor Pads)</td>
<td>4</td>
<td></td>
<td>~1500</td>
</tr>
<tr>
<td>Number</td>
<td>Description</td>
<td># of Vacant Spots</td>
<td># of Vacancies</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------</td>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>1</td>
<td>PARKING</td>
<td>380</td>
<td>380</td>
</tr>
<tr>
<td>2</td>
<td>PARKING</td>
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<tr>
<td>4</td>
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<td>OPEN</td>
</tr>
</tbody>
</table>
In Conclusion

- Design
  - Simple and Easy to Install

- Cost
  - Simple Design drives down cost

- User Interface
  - More streamlined and efficient process
what time is it?