Matlab day 2

**Approximate** grade ranges

<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
<th># of folks</th>
</tr>
</thead>
<tbody>
<tr>
<td>88+</td>
<td>A range</td>
<td>91</td>
</tr>
<tr>
<td>75-87</td>
<td>B range</td>
<td>122</td>
</tr>
<tr>
<td>58-74</td>
<td>C or C+</td>
<td>70</td>
</tr>
<tr>
<td>50-57</td>
<td>C-</td>
<td>16</td>
</tr>
<tr>
<td>&lt;50</td>
<td>D or E</td>
<td>19</td>
</tr>
</tbody>
</table>

Exam scores
Histogram via Matlab

**Project C**
- Airplane scheduling is extra credit (5%)
- 4pm today will post code to do selection
Today

- Applying what we know
  - Graphing histograms
  - Linear physics
  - Non-linear physics

Histogram

- HIST Histogram.
  - \( N = \text{HIST}(Y) \) bins the elements of \( Y \) into 10 equally spaced containers and returns the number of elements in each container.
  - \( N = \text{HIST}(Y, M) \), where \( M \) is a scalar, uses \( M \) bins.
  - \( N = \text{HIST}(Y, X) \), where \( X \) is a vector, returns the distribution of \( Y \) among bins with centers specified by \( X \).

Hist count

- HISTC Histogram count.
  - \( N = \text{HISTC}(X, \text{EDGES}) \), for vector \( X \), counts the number of values in \( X \) that fall between the elements in the \( \text{EDGES} \) vector (which must contain monotonically non-decreasing values). \( N \) is a \( \text{LENGTH}(\text{EDGES}) \) vector containing these counts.

Matlab

- Two examples
  - Linear
    - Cannon ball, no air resistance
  - Non-Linear
    - Cannon ball, air resistance