**Problem:**

* Realtrac scheduler does not get used.
* Realtrac scheduler data entry is tedious and takes a long time.
* Machine shop needs a working scheduler program to replace Realtrac.

**Goals:**

* Implement real time scheduling for machine shop.
* Build new, independent website.
* Ability to schedule workloads by day and work center.
* Schedule 3-4 weeks in advance. More if required
* Include original and revised estimated times.
* Four different access levels (Admin, Supervisor, Read Only, and Program Manager).
* Reduced amount of manual data entry.

**Features:**

* Phase 1: Machine shop scheduler
  + Use the same style spreadsheet format as the DWG/Part Tracker and add columns for additional information:
    - Material status -> from Jobscope data with manual entry
    - Finished date -> manual entry
    - Machine center -> manual entry
    - Person working on part in real time -> from Jobscope custom report
    - Time estimate -> manual entry (look if part was already made once and enter that estimate if it is within 10%or 20% of actual time)
    - Actual time -> Jobscope
    - Status/current task -> Jobscope
    - Total quantity -> Jobscope
    - Current finished quantity -> manual entry/possibly Jobscope
    - Fabrication Type. (S, W, M)->manual entry
    - Scheduled work center -> from route operations/manual entry
    - Revision->Jobscope or manual entry
    - Job->Jobscope (from work order)
    - Notes field -> manual entry
    - Part of Weldment or Powder Coat identifier (Finish) -> manual entry
    - Link PDFs of drawings to each entry (double click on part number/make part# a hyperlink?) -> Jobscope
    - Administrative access with login/password to write/change schedule.
    - Bumping scheduled parts for hot parts.
    - Job priorities
* Phase 2: Machine shop scheduler
  + Show only the latest entry, with a drop down to show all previous entries (roll up sub data).
  + Specific site design/layout (input from Mike H and Dave B)
  + Save custom views for each user (order of columns, which columns are shown).
  + Basic viewer for non-machine-shop users (read only)
  + Automatic removal from scheduler when all parts leave machine shop. ->Jobscope QC scan on work order (removed parts will be archived to a completed database)
  + Compare estimated time to actual time and flag if overage > 20% (need to discuss threshold, color system with levels)
  + Automatically calculate possible finish date according to time estimate, work center load and hours per day (maybe even including arrival time for material)
  + Part in Process Location
  + Allow for shifting items in queue based on certain conditions
  + Prioritization code (additional field)
  + Search function that looks at current parts first and if nothing there gives a warning stating such and asking if search should be extended to finished parts?
* Phase 3: Daily production meeting
  + Link all information with spreadsheet for daily production meeting (separate site)
  + Multiple sections:
    - Fabrication/machine shop with status and ETC from machine shop site)
    - Purchased part with estimated dock date and tracker -> Jobscope
    - Assembly status and action? From work order closure
    - Design package section with delivery date estimate, release date and status from drawing tracker.
    - Discrepancy section ->from spreadsheets/manual entry
  + Ability to select (toggle) items to be visible or hidden
  + Line coloring for importance: green/yellow/orange/red
  + Add columns for notes, status, needed action, person entering information
* Phase 4: QC database
  + QC database: parts that leave/come from the machine shop are automatically entered.
  + Additionally scan/manual entry for parts from shipping/receiving can be entered
  + Columns TBD (job#, part# and description, date and time received, vendor/people working on it, QC operator, good/no good, issue, comment, link to pdf …)
  + Mark up pdf on touch screen and save in different folder ->saved to a QC DB

**Success Criteria:**

* Accurate scheduling of machine shop tasks.
* Multiple independent users able to use scheduler simultaneously
* Positive feedback from users and testers.
* Stable uninterrupted server.
* Ability for supervisor to schedule tasks that other users can only view and not edit them.

**Running Tests:**

* Valid data entry
* Testing for simultaneous users
* Stable connection to server/database

**Types of Reports:**

* Include all columns from current drawing tracker
* Add: Material Status, Machine Center (drop down menu), Original Estimated Time, Revised Estimated Time, Actual Time, Quantity Complete, MTL #, Start Date

**Source Code Requirements:**

* Backend: Python
* Frontend: HTML, CSS, JavaScript, Django/Djinja, jQuery
* Database: SQLite

**Hardware Requirements:**

* User entry Client: Modern Web Browser (Desktop and Mobile versions, OS independent).
* Server: COMSOL.
* Barcode scanner.