Project Planning and Management

DS 6011: Capstone Part I / Capstone Prep
School of Data Science
University of Virginia

Last updated: June 21, 2024

Most people don't plan to fail, they fail to plan.

~ John J. Beckley

Agenda

Data science projects vs traditional software development

Timeline

Sprint Ownership

Coordinating tasks

Collaboration

Meetings with Sponsor

Data Science vs Software Projects

Data science projects are different from software development

There is a lot more research and iteration required

Doesn't always fit a tidy schedule (2-week sprints)

DS is based on probability which brings uncertainty

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Sprints for Data Science

Even still, activities can be time boxed:
e.g., dedicate 2 weeks for research on certain task

Start by working backward: get clear on what success looks like
Ask the sponsor: How will this be used in the future?

Make a list of stages (discovery, lit review, data processing, modeling)

Put the stages on a rough calendar

Timeline

Gantt chart example

Task	Dec	Jan	Feb	Mar	Apr	May
Data discovery	██					
Lit review	██					
Data processing / mapping		██	██			
Model development			██	██		
Dashboard & reporting					██	
Finalize deliverables						██

When forming the timeline, take into account:

- capacity of team members
- holidays / time off
- important events

Share this timeline with sponsor, faculty mentor to get feedback, buy-in
Include in Project Plan and Progress Reports

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Timeline Management

Gantt chart example

Task	Dec	Jan	Feb	Mar	Apr	May
Data discovery	██					
Lit review	██					
Data processing / mapping		██	██			
Model development			██	██		
Dashboard & reporting					██	
Finalize deliverables						██

The chart will change over time and get more detailed

You might add more tasks

Can probably coordinate tasks (e.g., who is owner) without discussing with sponsor

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Sprint Ownership

For a smooth student team dynamic, will be helpful to appoint *Sprint Owner*

The Sprint Owner will own the sprint by:

- making sure work is completed and organized
- preparing an agenda for sponsor meeting
- running the sponsor meeting

Appointing Sprint Owner

Figure out who the owner will be:

- In first student meeting, ask who would like to lead sprints
- If several people would like to lead, make a schedule and rotate

Rotation can be helpful as each student gets a turn leading

Save the schedule in your shared location (e.g., Google Drive doc)

Sprint Name	Start Date	End Date	Sprint Owner	Notes
A	6/8	6/21	Jamal	
B	6/22	7/5	Nick	
C	7/6	7/19	Callie	
D	7/20	8/2	Jamal	
E	8/3	8/9	Nick	

Coordinating Tasks

For managing the project, it will be helpful to have these things in shared location:

1) Stack of tasks that need to get done:
- name of each task
- task description

2) Tasks in the current sprint
- task name
- task description
- who is working on the task
- owner of task: who is responsible
- status
- any blockers

Collaboration

As the team makes progress / completes sprints, want to share broadly

Team should decide how to do this (and it should go into team contract)

Examples:
- Can update work on current sprint by a certain date and ask members to review
- Can discuss at a meeting
- For blockers, may want to reach out for faster feedback (Teams, email)

Preparing for Meetings with Sponsor

Prepare an agenda and share with sponsor in advance of meeting
    - can add to calendar invite

Prepare a deck for sponsor meeting. Should include:

- Agenda
- Reminder of success criteria (to ensure alignment)
- Timeline (discuss if it needs to change)
- What you've worked on during this sprint:
  progress, findings, decisions, blockers

- Plan for next sprint: make sure people have bandwidth and adjust as needed.

Meetings with Sponsor

Discussing how to get questions answered

In first meeting, ask sponsor about best way to get questions answered

Example: They share a dataset with 100 columns and no data dictionary.
They may suggest a shared doc with list of questions and routine review

Get a sense of how detailed your discussion should be

As you review work, pause, take questions, ask if the details are useful, etc.

It's important to get feedback, keep attention, and **have clear next steps**

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Meetings with Sponsor, contd.

If something is unclear or you don't know what to do next, ask!

Although this may be uncomfortable, don't be shy

Important Early Steps

Starting the project can be awkward. Taking these early steps can help:

1) Create a shared location for work and ensure everyone can access

2) In first student meeting, ask who would like to lead sprints.
Making a schedule and rotating sprint owner can work well.

3) In first sponsor meeting, ask about best way to get questions answered

4) Find regularly recurring meeting times that will work and schedule them
   e.g., weekly meeting with mentor, every other week with sponsor
   can adjust as needed