

# Final Project

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## 1 Project ideas

The final project will have you write a significant Bash script. I highly recommend project idea 1 or 2 since they have the most biological relevance. If you have an idea that's not in this list, ask me first and we'll discuss. You may change your project idea up to the Project Milestone.

1. curl/wget interface to Ensembl or another web server
2. Perform benchmarks between related tools on biological data such as
  - string manipulation with awk vs sed vs native Bash
  - compression time and space with gzip vs xz
  - installation time and disk usage between conda and mamba
  - performance between any two similar bioinformatics programs such as Salmon and Kallisto
3. bulk media converter using ffmpeg/imagemagick
4. simple file manager (view and edit files)
5. a simple game, such as a guessing game or interactive story

## 2 Proposal (April 8)

Answer the following in a text document and submit on ELMS Project Proposal:

- What project will you be doing?
- Why did you pick your project idea?
- What background information will you need?
- What commands might you need?

### 3 Milestone (April 22)

Answer the following in a text document and submit on ELMS Project Milestone:

- How is your project going?
- Report your current successes and failures, what is working and what isn't
- Is there any help you need from me?

### 4 Final Submission (May 16)

You will need to submit the following items on ELMS Final Submission:

#### 4.1 Your Bash script

There is no line of code requirement, but you should at least include:

- Your name
- (optional) a software license
- Comments explaining any code that does not look obvious

You will also be graded on style, which includes:

- Descriptive variable naming
- Proper use of quotes

Finally you will also be graded on correctness, which includes:

- Does it work?
- Does it match what you've written in the documentation?

#### 4.2 Written documentation

Write a manual for your script in the spirit of the man pages. You should at least document:

- What your program does
- Each command line option
- Expected program behavior
- Exit codes

It's not important that this is long, but it's important that this is correct.

### 4.3 Program log

Please submit the output of a full run of your program in a text file. You can capture your program's output like so:

```
your-program | tee > your-program.log
```

Screenshots and videos of your program will NOT be accepted. You will lose points if you are dishonest with your log (ie hardcoding program responses).

## 5 Grading

- 2% proposal
- 3% milestone
- 5% written documentation
- 5% program log
- 15% Bash script
  - 2% comments
  - 3% style
  - 10% correctness
- 30% total

## 6 Tips

Start early, and spend about the same time as you would on the homeworks on the project every week. Successfully completing the project and all documentation should earn you most of the points. You can also reference your code in your CV at the end!