

`print(d)`



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Updated Problem

- **We are still driven by the same problems as before**
 - 3D printing is made for a hobbyist market, not the average consumer
 - To move forward, 3D printing needs to become as easy as ⌘P (or Ctrl + P)
 - Combining and automatically handling platforms such as OctoPrint, CuraEngine, and Thingiverse can bring the complexity down to average user level

Quick Refreshers

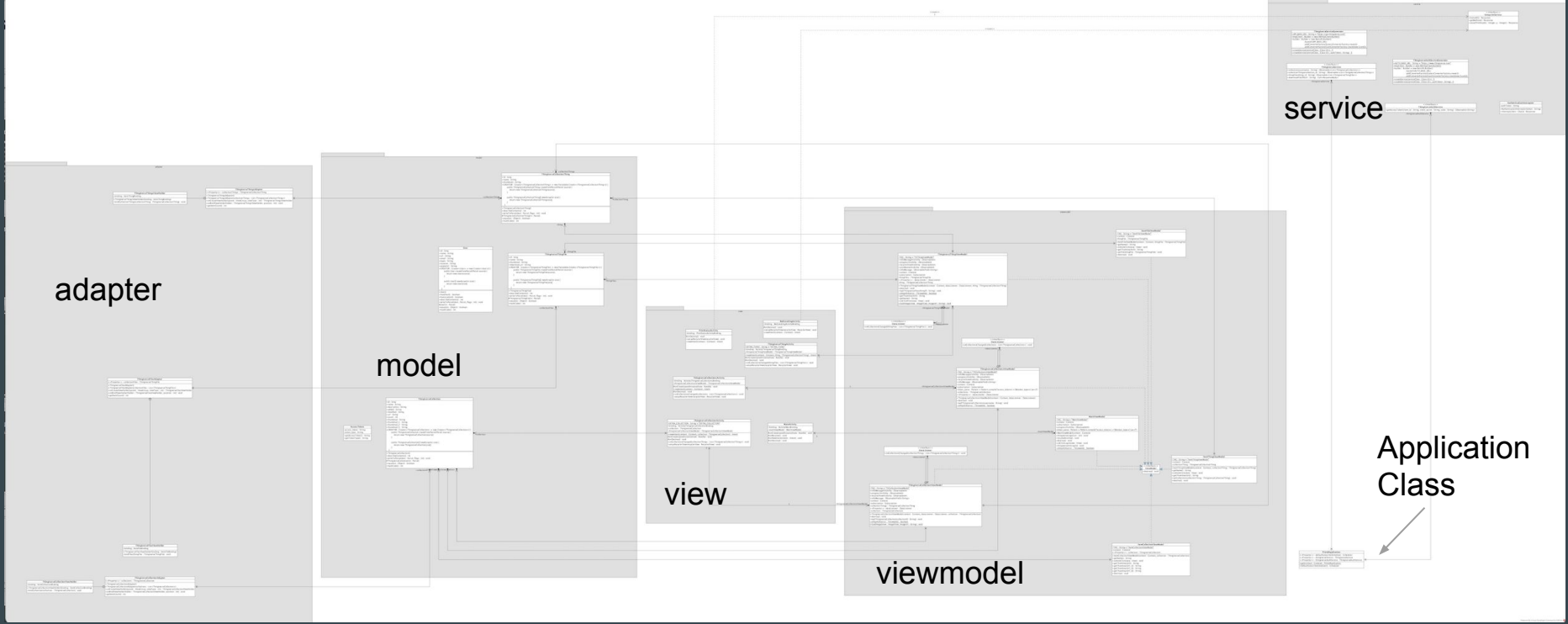
OctoPrint	Web interface for 3D printers (runs on Raspberry Pi or similar computer)
CuraEngine	Engine to convert 3D models (.stl) into printer code (.gcode)
Thingiverse	A large repository of 3D models (.stl)

Changes of Scope

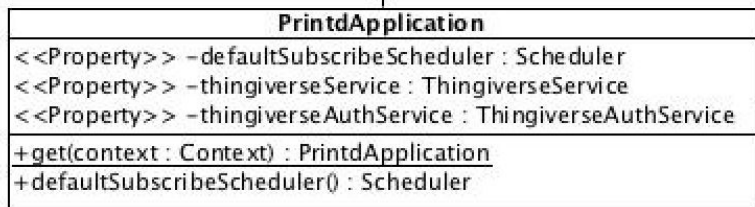
- **Removed need to integrate CuraEngine into our server**
 - After some research, OctoPrint's API allows for utilizing its integrated CuraEngine
 - All that we need to keep track of is printer profiles for CuraEngine configuration
- **Dropping support for filament tracking**
 - Difficult metric to track from our limited knowledge
 - We can only get an estimate of how much any single print will use - we never know the actual amount used

Detailed class diagram

Prepare yourself..



Let's break it down...

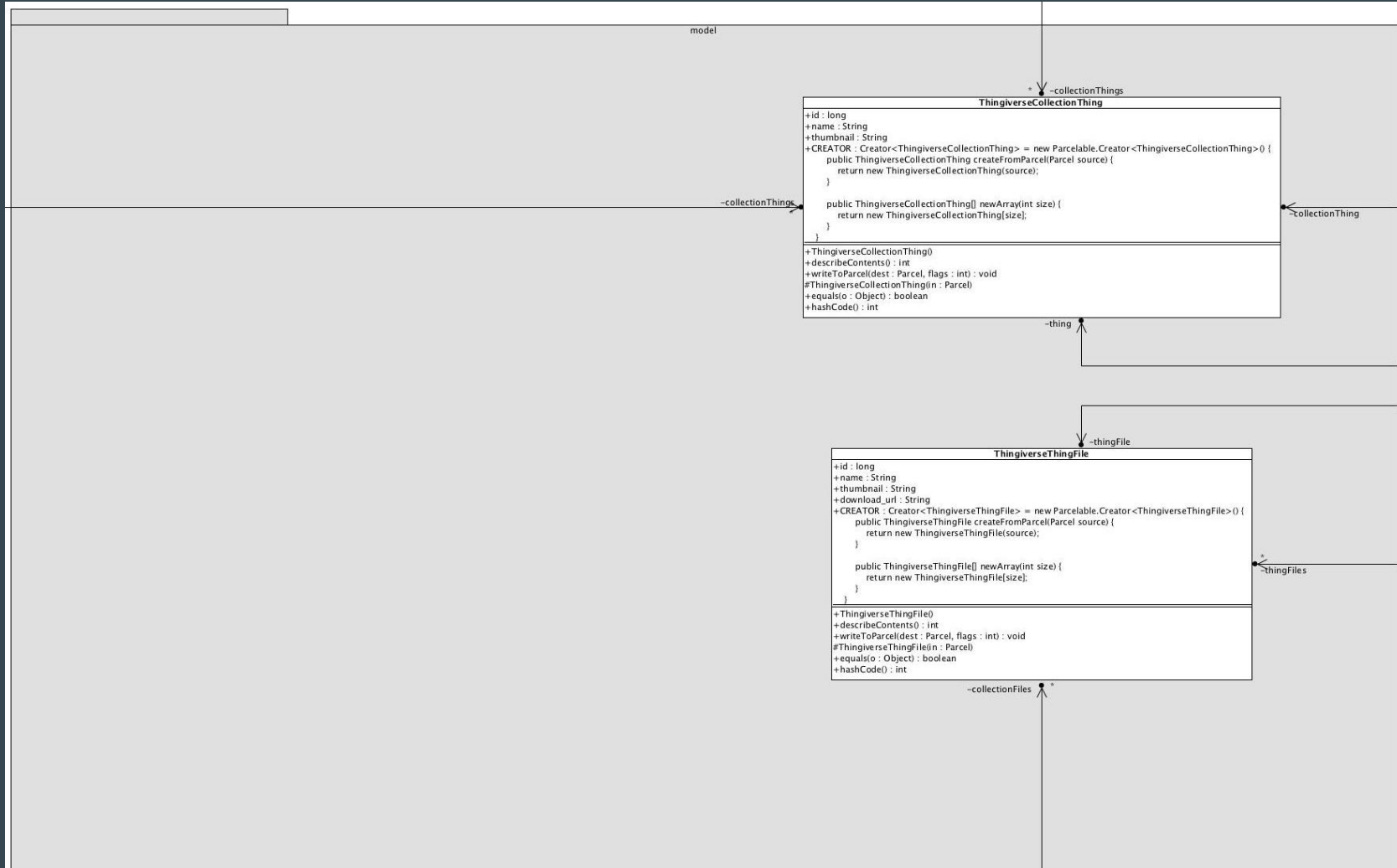


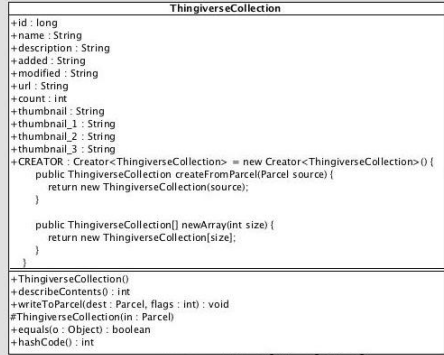
Adapter Namespace





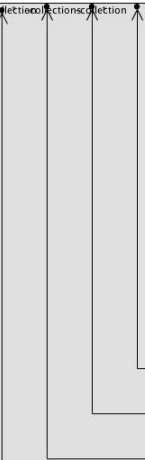
Model Namespace



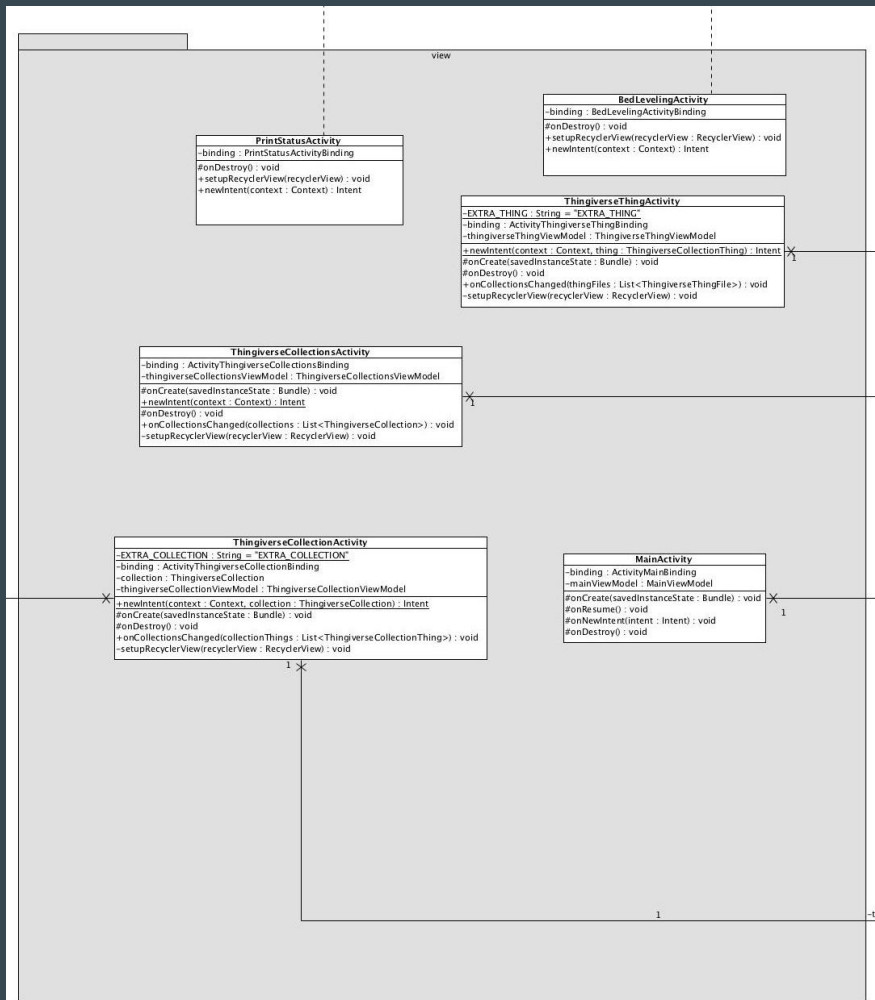


-collections
-collectionsCollection
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←collection



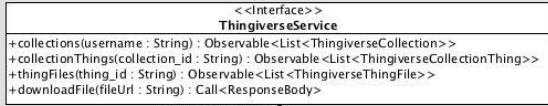
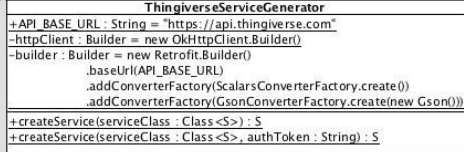
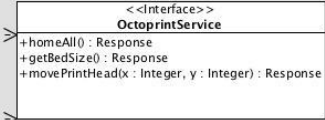
View Namespace



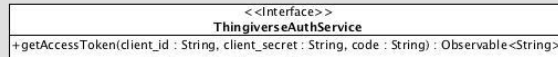
ViewModel Namespace

Service Namespace (last one)

service



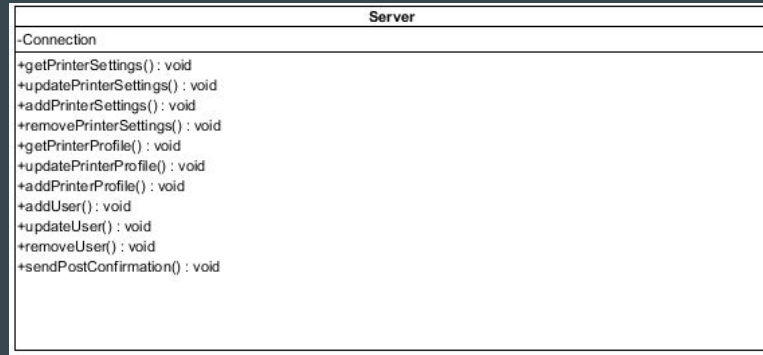
-thingiverseService



-thingiverseAuthService



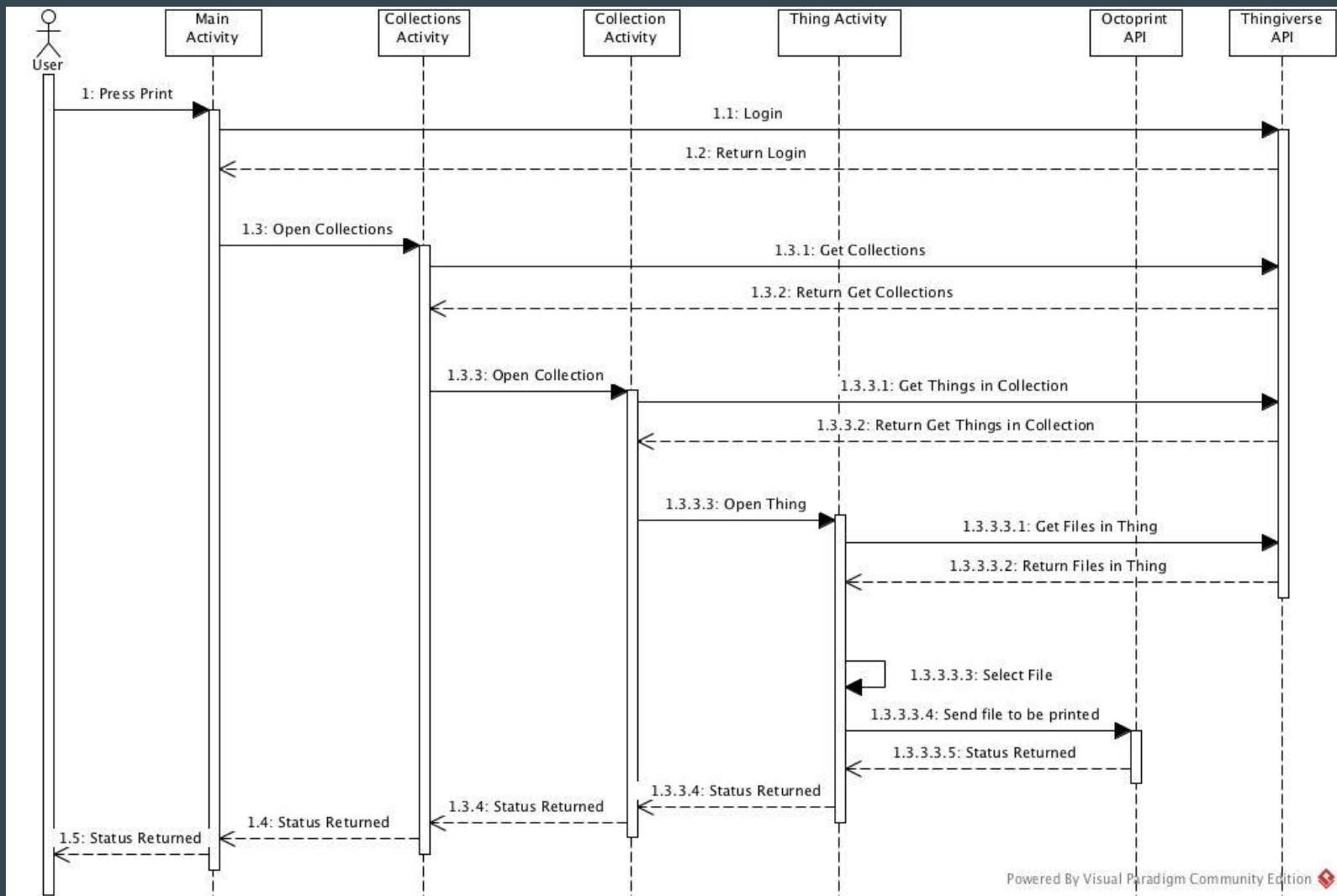
Server



Sequence diagrams

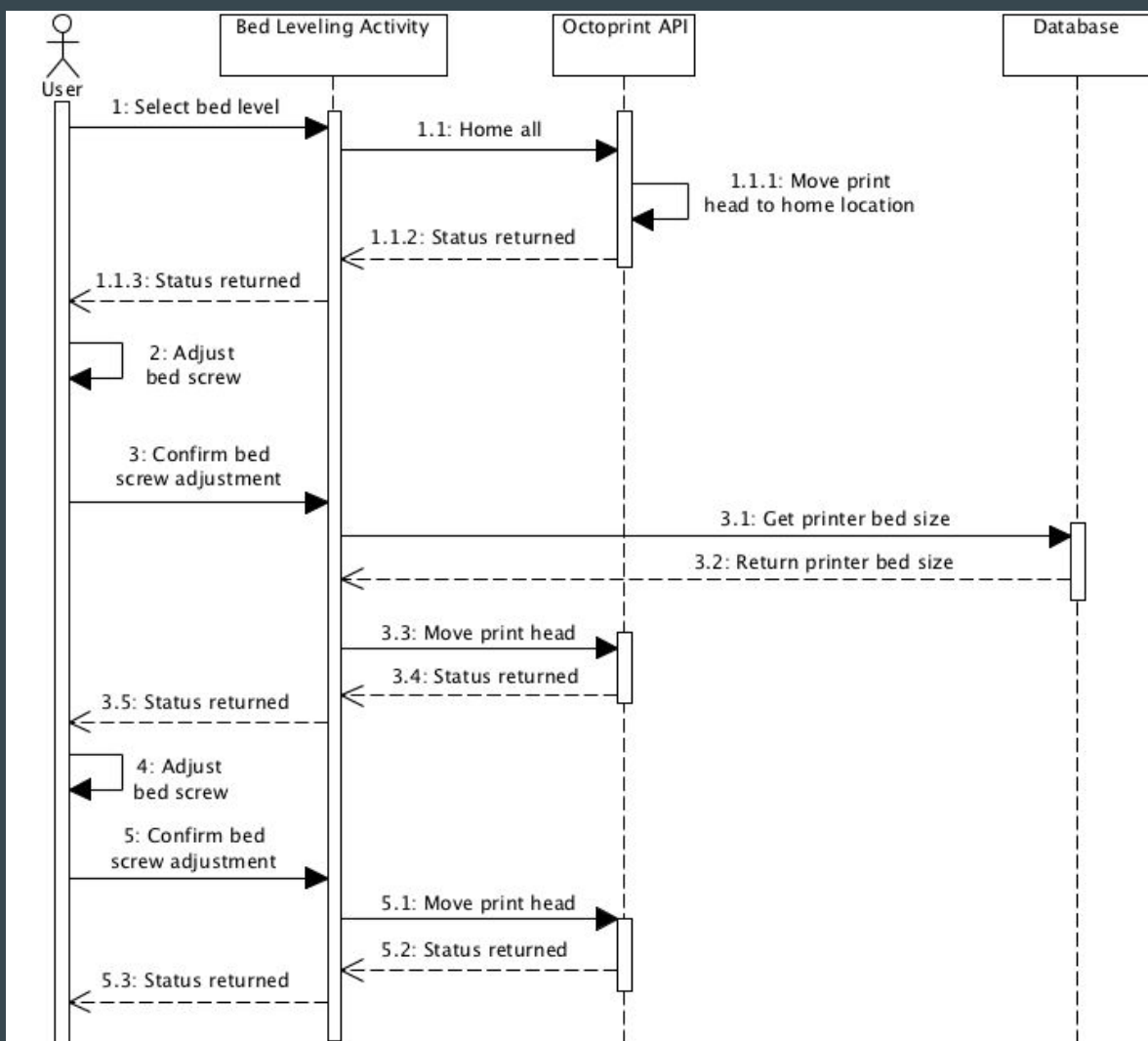
We don't have many, hang in there with us - we won't take too long

Print

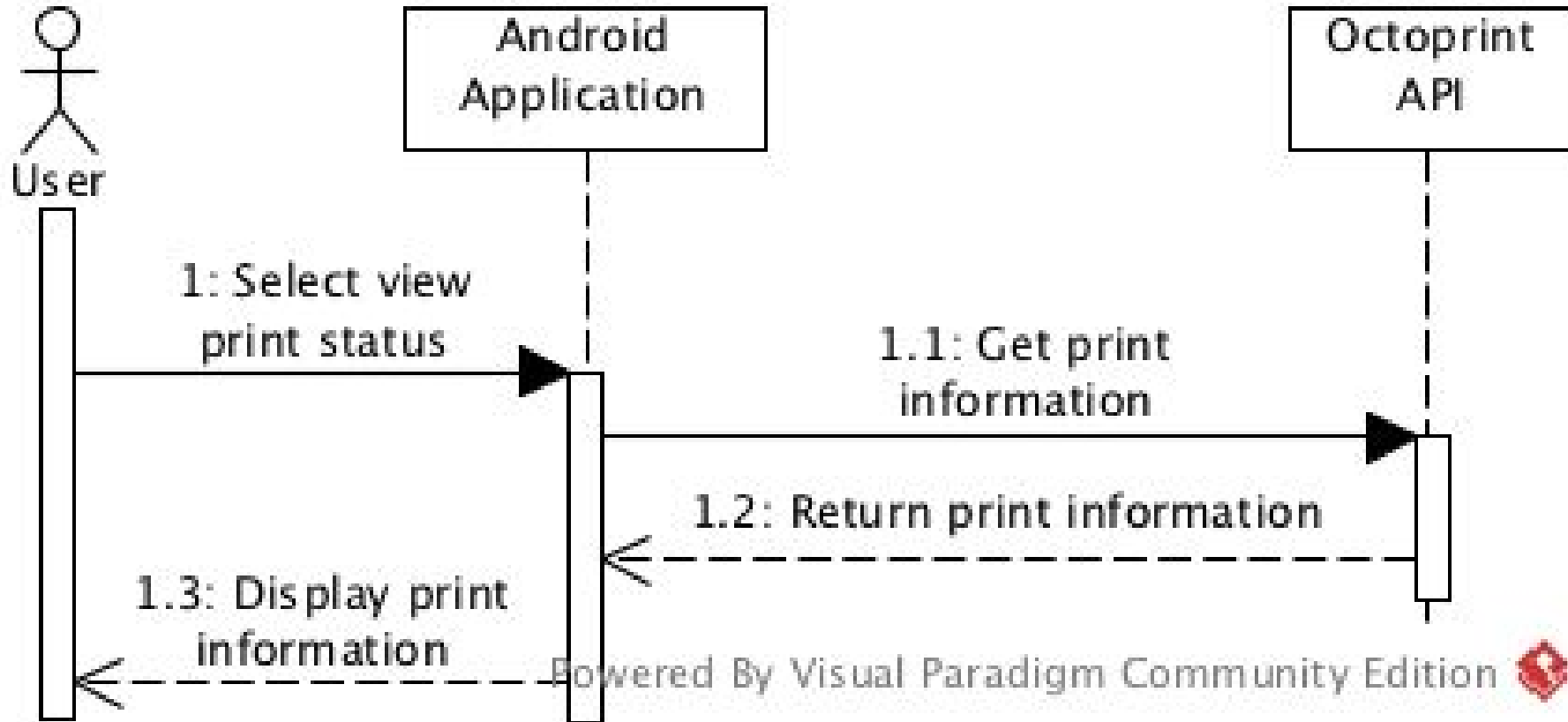


Bed Leveling

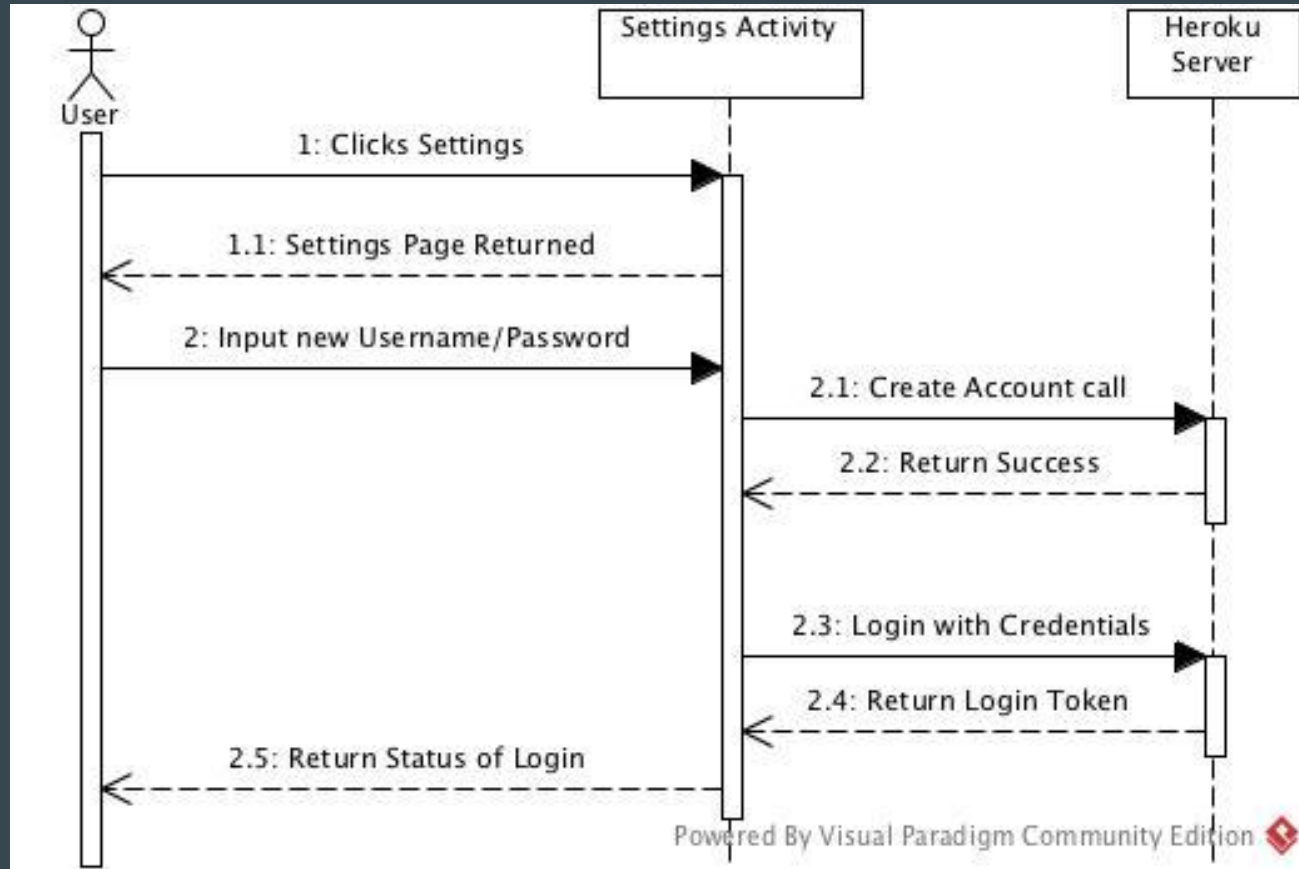
Steps 3.5 - 5.3 repeated 2x



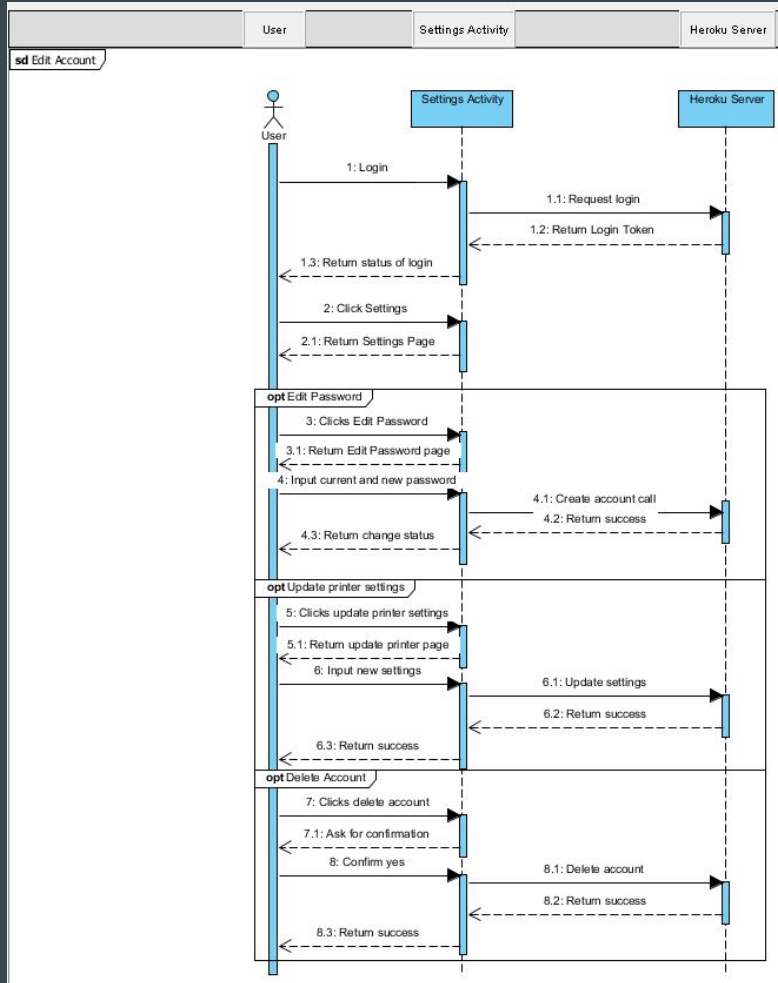
View Print Status



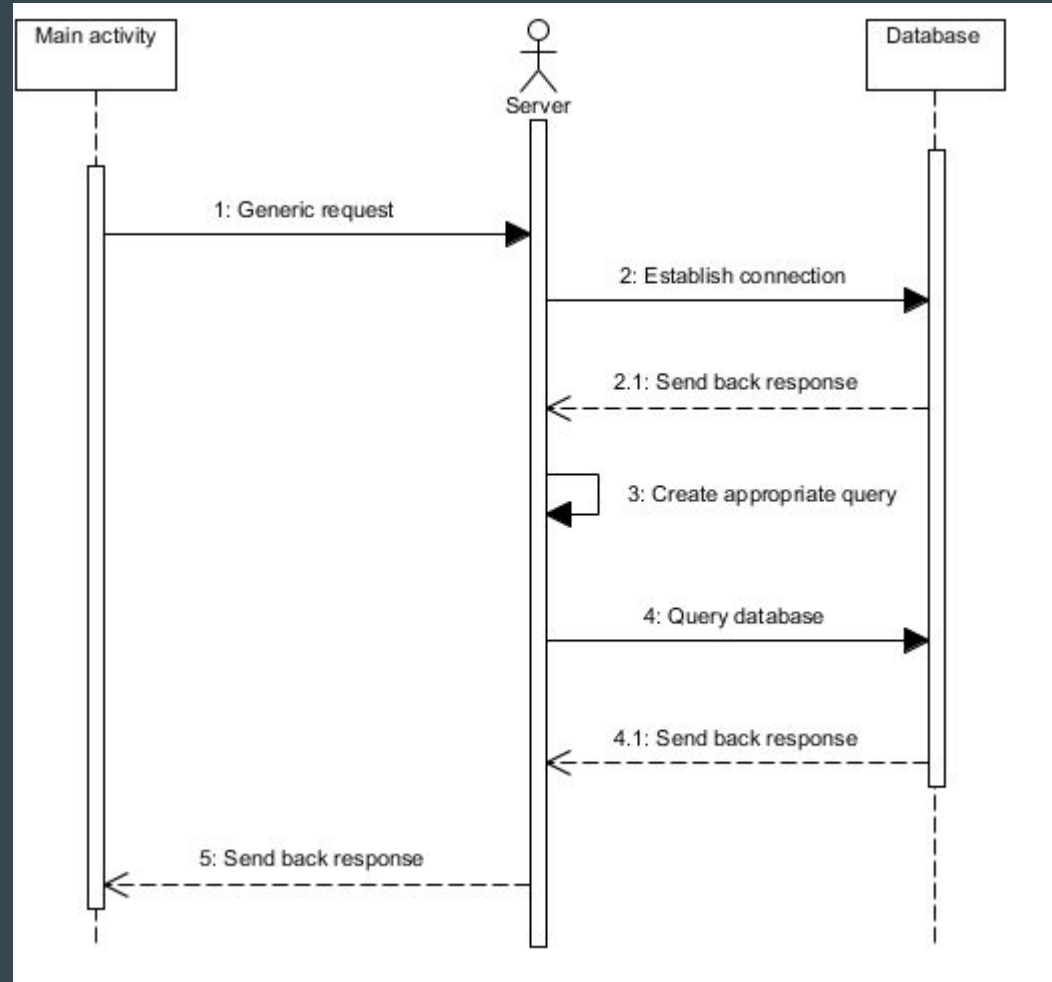
Create Account



Edit Account



Server call



Project changes

- As discussed, we will be dropping support for filament tracking
- Removing CuraEngine from our Heroku server to utilize OctoPrint's CuraEngine

Great, so how does that affect the project? (focus changes)

- Filament tracking was low priority, so that doesn't affect progress
- Reorganizing to utilize the built in CuraEngine removes emphasis on the server portion of the project
 - This allows us to refine the app further
 - The server basically becomes a remote database with an accessible interface

Our Perspective

- **The initial prototype is progressing smoothly**
 - After wrangling with OAuth, the Thingiverse API is super simple to use
- **MVVM data bindings are amazing**
 - Take a lot of hassle out of updating Activities
 - Pain to set up, but that's done now... thank goodness
- **We are on schedule to finish the app within the time frame**
- **Andrew is super excited about being able to use print(d)**

Thank you!

Questions?