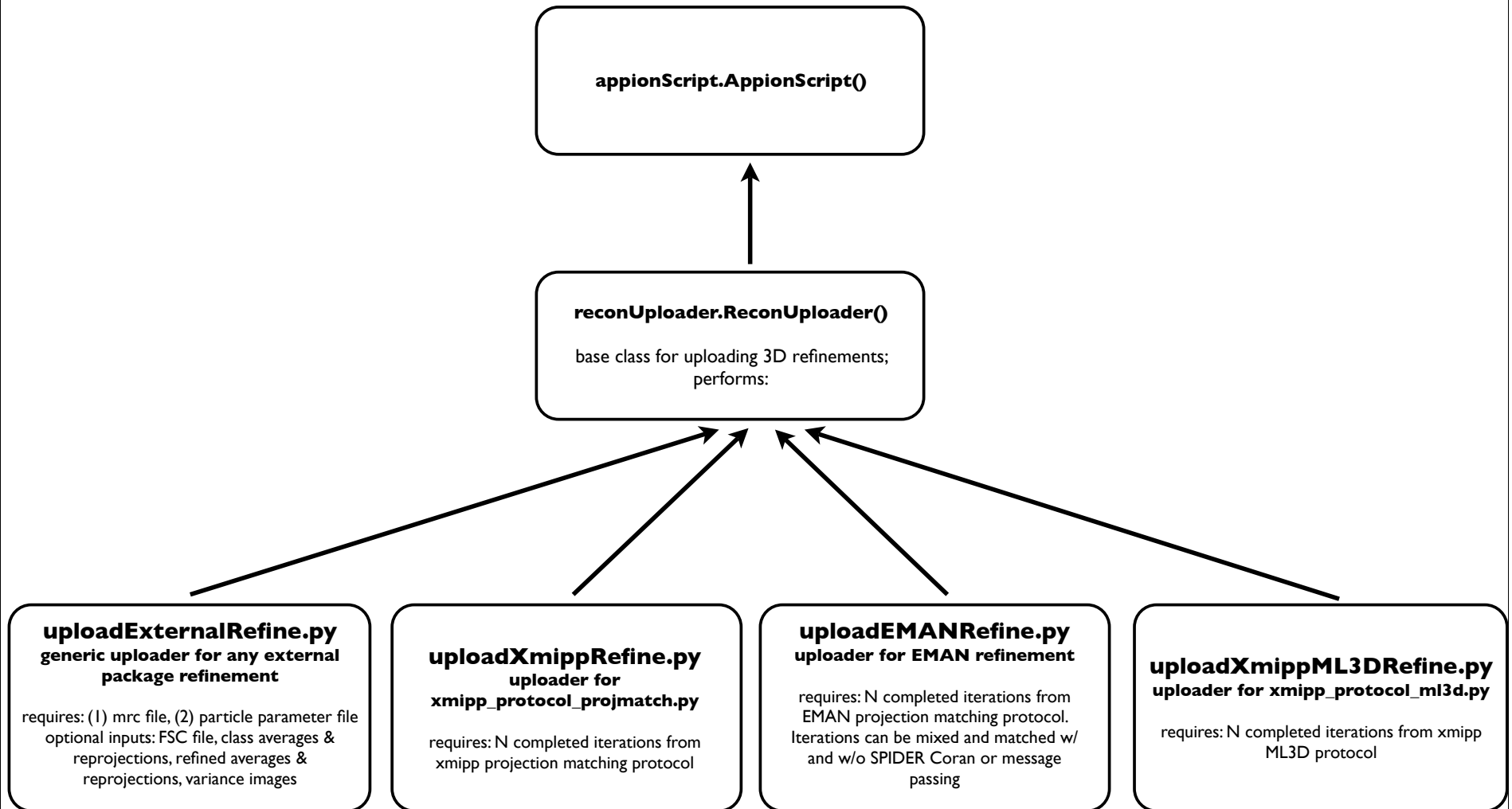


class diagram for refinement upload



how to construct a refinement uploader: required input is **red**

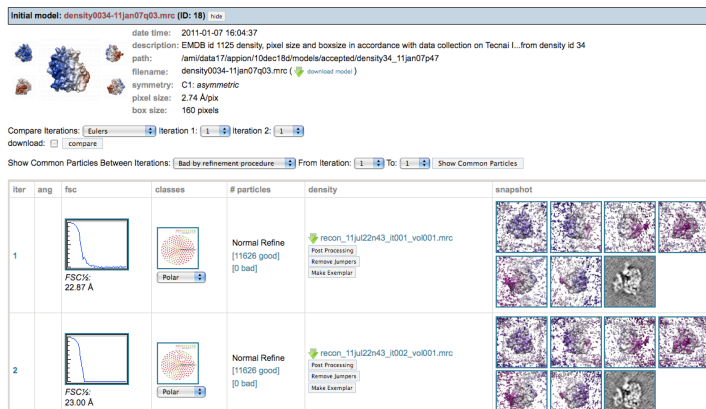
**completed external
refinement
procedure**

1. write function to check for successful refinement completion
2. define a new table in the database for all package-specific parameters
3. write package-specific converters for volume files, particle parameters, FSC files, etc.

input for upload:

1. 3D map (mrc format)
2. particle data file
3. (optional) FSC file: 1st column = inverse pixels, 2nd column = FSC
4. (optional) class averages & re-projections file
5. (optional) variance images
6. (optional) other results

refinement summary page is automatically generated



given input map & parameters, the following operations are performed in the background

- general error-checking
- untarring results and creating necessary directories
- querying database for stack / model parameters
- output parameter parsing
- reading particle data file
- determining upload iterations
- inserting all metadata.
- creating analysis outputs: Euler plots, Euler jumper calculations, FSC insertions, etc.
- verifies the number of inserted iterations
- other