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SURVEY



DES-BRAZIL

PreCam Processing, the DES-Brazil Portal, and Necessary FITS Keywords

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Issues



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- Data transfer (NOAO DTS, RSYNC with FERMILAB?).
- Ingestion into the database.
- Pre-burner to make FITS headers DESDM compliant, generation of BIAS and FLATFIELDS.
- Basic Products: instrumental magnitudes, positions, classification.
- Advanced products: Perform photometric analysis using DES Science Portal (codes under external responsibility).



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Issues



DES-BRAZIL

- Advanced products: Perform photometric analysis using DES Science Portal (codes under external responsibility).
- Tools to evaluate progress of the PreCam survey (completeness, % of reduction, data quality control, etc.)
- Period of storage (5-10 years ?)
- Amount of disk space available up to ~10TB



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Pypeline Design



DES-BRAZIL

Benefits from this design:

- Pypelines can be easily extended or modified.
- Modules can be easily included or modified.
- Portal content is dynamically generated (including module dependencies).
- Few and simple requirements for module developers.



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Pypeline Design



Pipeline:

Sequence of tasks, where the output of a step may serve as input for others.

E.g.: Images must be reduced before extracting a catalog.

Task:

Activity with a well-known interface, defined by its input and output.

E.g.: source extraction, where input is a FITS image and output a FITS catalog.

Module:

Piece of code that implements a specific task.

E.g.: SExtractor.

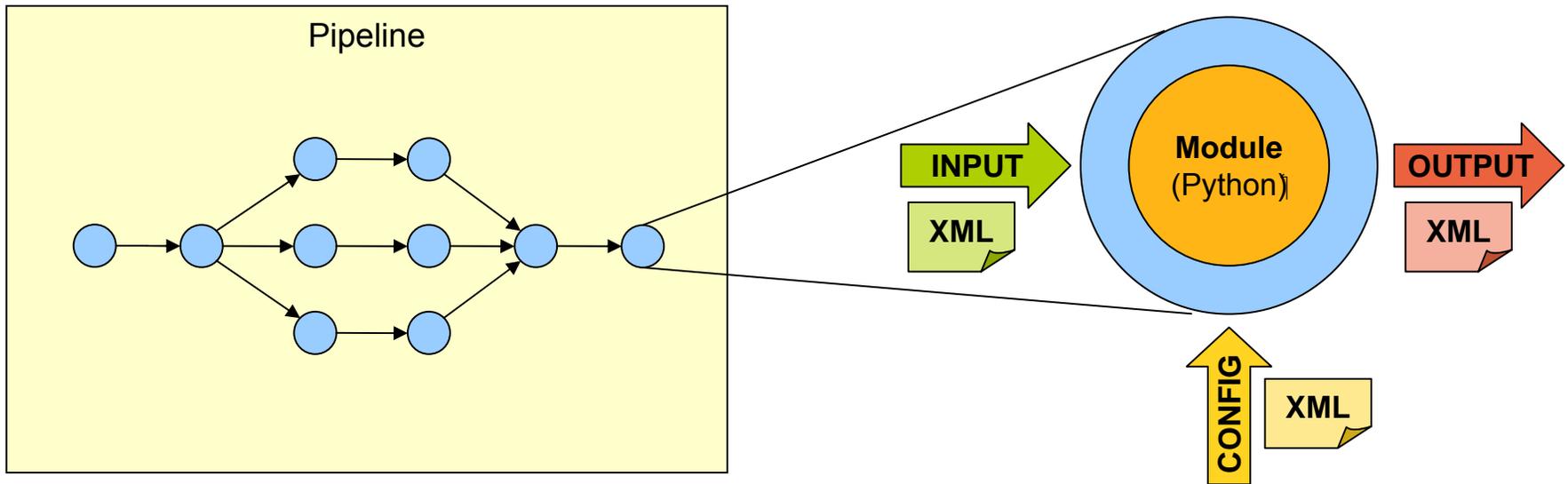
Wrapper:

Piece of code (Python in our case) responsible for adapting legacy code into our system.

E.g.: The SExtractor wrapper converts the XML configuration file into ASCII, the format expected by the SExtractor binary.

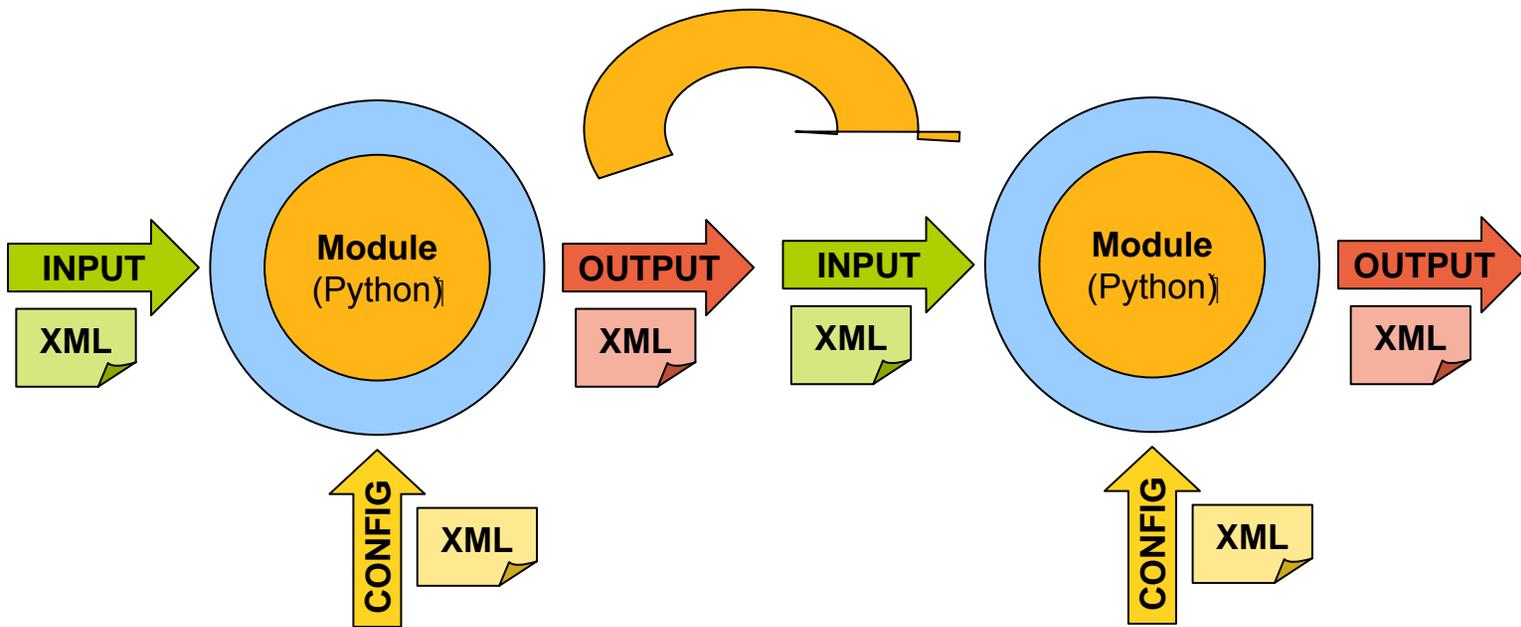


Pypeline Design





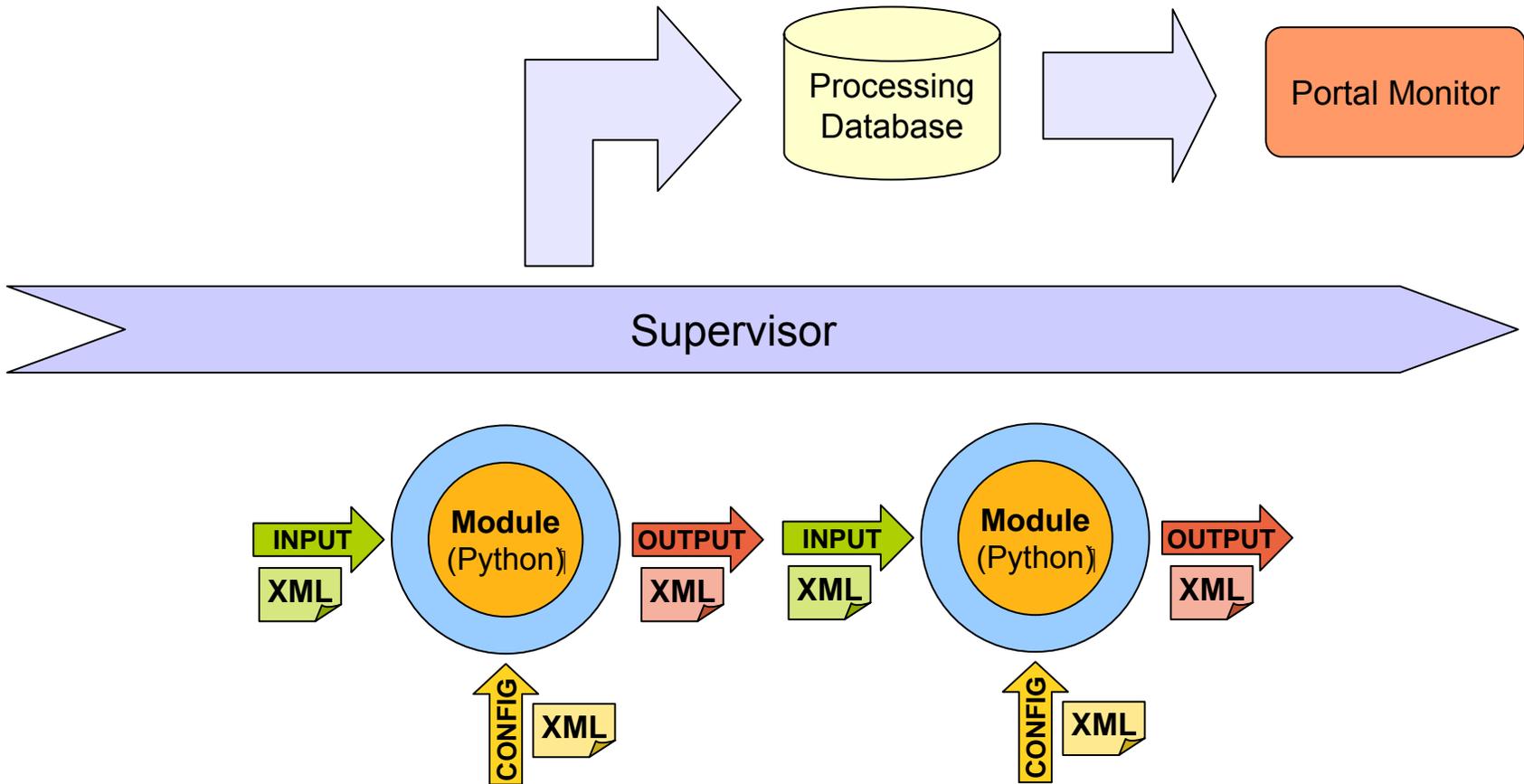
Pypeline Design





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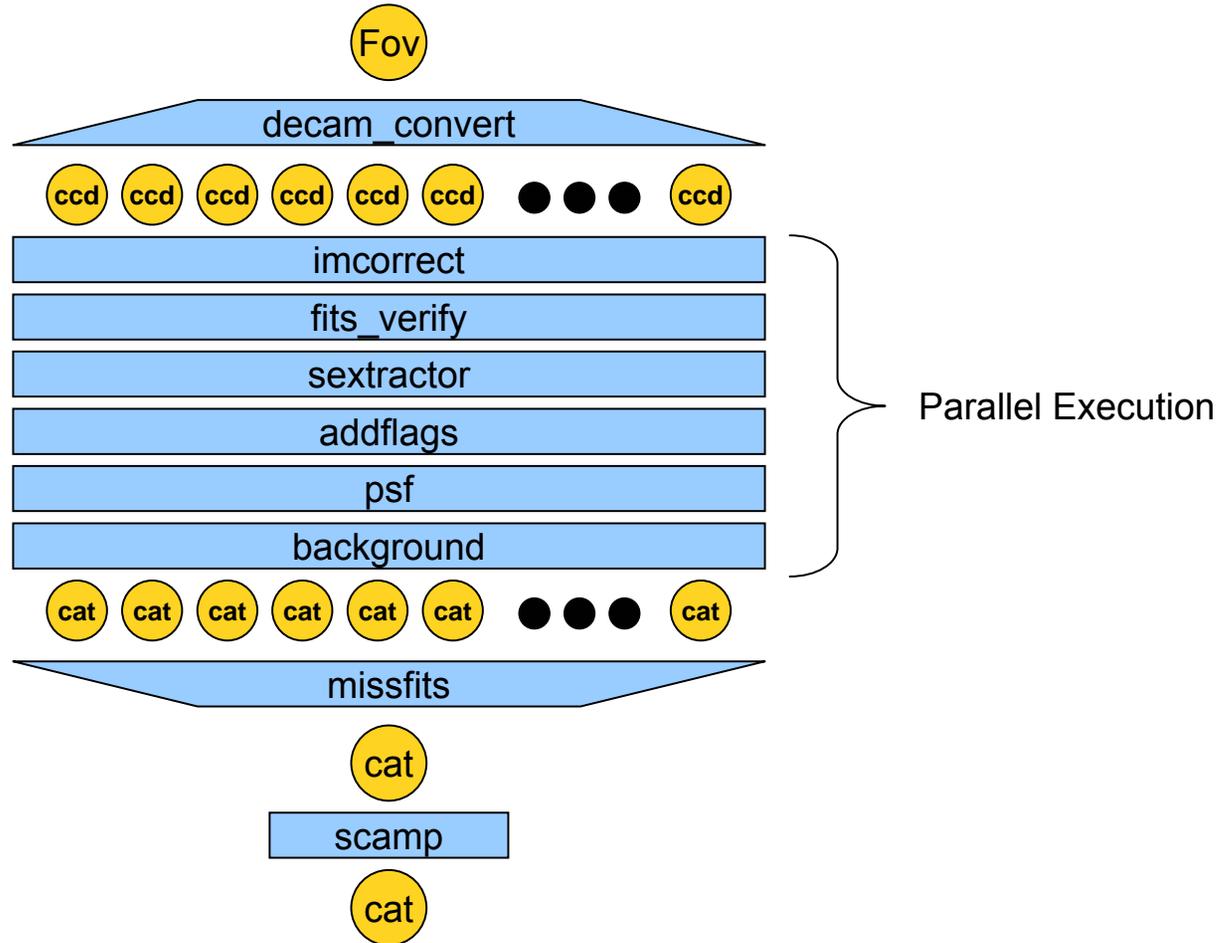


Pypeline Design



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**Quick Reduce
Pipeline**





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Writing a new module (quick and dirty):

- Expect configuration in XML. A library is provided to hide XML details.
- Expect input files listed in a XML file (using provided library).
- Expect all your files to be in the same directory.
- Implement the run() function, without arguments.
- Register your output files in XML file (using provided library).
- In case of failure, just raise an exception.