GammaLib - Feature #800

Implement GUrl class for transparent handling of URL operations

03/14/2013 08:15 AM - Knödlseder Jürgen

Status:	Closed	Start date:	
Priority:	High	Due date:	
Assigned To:	Knödlseder Jürgen	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:	00-08-00		

Description

GammaLib should be handle to perform the same operations on files, text strings and distant media (accessed for example via http, ftp, etc.). This can be achieved by implementing an abstract base class GUrl that implements the following basic operations:

- open for opening (e.g. file opening, socket opening, string clearing, etc.)
- close for closing (e.g. file closing, socket closing, etc.)
- read reading of the media
- · write writing to the media
- · getc getting a character from the media
- · putc putting a character into the media

Derived classes are then implemented to handle the various media:

- GUrlString handles a simple string
- GUrlFile handles a flat file
- GUrlHttp handles a network connection using http
- · GUrlHttps handles a secured network connection (need to check whether this should be merged with GUrlHttp
- GUrlFtp handles ftp connections

History

#1 - 03/14/2013 08:20 AM - Knödlseder Jürgen

- Description updated
- Priority changed from Normal to High

#2 - 03/14/2013 06:12 PM - Knödlseder Jürgen

- Target version set to 00-08-00

#3 - 03/14/2013 06:13 PM - Knödlseder Jürgen

- Subject changed from Implement GUrl class for transparent handling of URL handling operations to Implement GUrl class for transparent handling of URL operations

#4 - 03/14/2013 11:56 PM - Knödlseder Jürgen

- % Done changed from 0 to 80

The GUrl abstract base class has been implemented that defines the standard interface for the URL classes:

class GUrl : public GBase { public: // Constructors and destructors GUrl(void); GUrl(const GUrl& url); virtual ~GUrl(void);

// Operators GUrl& operator=(const GUrl& url);

// Pure virtual methods

virtual void clear(void) = 0;virtual GUrl* clone(void) const = 0; virtual void open(const std::string& url, const std::string& mode) = 0; close(void) = 0;virtual void virtual int read(void* buffer, const int& nbyte) = 0; write(const void* buffer, const int& nbyte) = 0; virtual int virtual int getchar(void) = 0;putchar(const int& character) = 0; virtual void virtual void scanf(const char* format, ...) = 0; virtual void printf(const char* format, ...) = 0; virtual std::string print(void) const = 0;

};

The GUrlFile class has been implemented that handles flat files. Unit tests have been added for C_{++} and Python to validate the class. Note that the Python interface differs slightly from the C_{++} interface. In particular, the scanf() and printf() methods are so far missing. We may see later how those could be implemented. I guess this requires some deep SWIG coding.

#5 - 03/14/2013 11:56 PM - Knödlseder Jürgen

- Status changed from New to In Progress

#6 - 03/15/2013 10:10 AM - Knödlseder Jürgen

- Status changed from In Progress to Feedback
- % Done changed from 80 to 100

The class GUrlString has been added for reading and writing to strings. This completes the functionality that is needed for the moment, hence the feature can be closed.

Note that the printf() method has an internal buffer limitation and the scanf() method does not advance the internal pointer, hence printf() can be used with limitations and scanf() cannot really be used.

See #801.

#7 - 12/14/2013 01:00 AM - Knödlseder Jürgen

- Status changed from Feedback to Closed
- Assigned To set to Knödlseder Jürgen