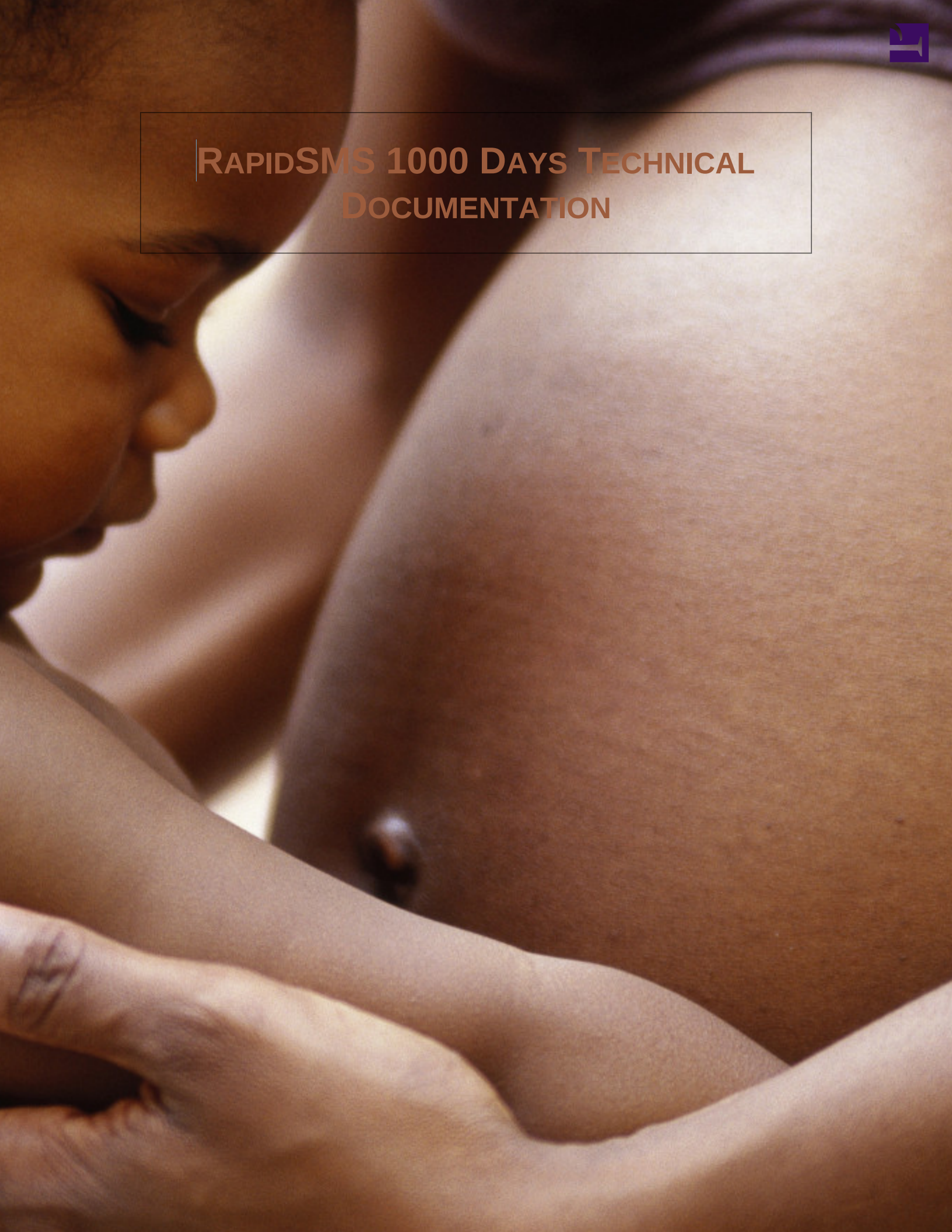

RapidSMS 1000 Days Technical Documentation

RapidSMS 1000 Days Technical Documentation

Table of Contents

2014-05-29 14:50:39 +0300

AUDIENCE

The audience of this document includes both the technical personel responsible for the day-to-day operation of the *RapidSMS 1000 Days* system and the project managers of UNICEF Rwanda and Pivot Access.

In particular, the programmers of the system will find information that complements the documentation available with the source code. Tutorials, FAQs, tips, tricks, and general guides for programmers shall be included in this document.

System administrators will also find the *RapidSMS 1000 Days* system requirements and dependencies specified in this document, to facilitate installation on a fresh server.

The Database System

The Two Senses of "Scaling"

Not every relational database management system (RDBMS) is suited for the same tasks; and, often, as a project evolves it grows out of one RDBMS and works better with another. The good system designer knows when that time arrives, and makes the decision accordingly.

Database systems are designed and built with several considerations and trade-offs in mind, and two of them are relevant to the concept of "scaling" as we will discuss it in the present section. These are also the main considerations that have influenced the database decisions in this phase of the project.

It should be noted that trade-offs are necessitated in engineering by the hard physical limits that are a fact of nature. An algorithm that works best on large amounts of data is usually ill-suited for small amounts of data, and would be wasteful if used. Similarly, naïve algorithms are often easy to implement and cheap to execute, but will often break down when they encounter unusual input.

An example that could be given is that a house designed for a small family of five would not be able to accomodate a large family of twelve. Yet since most nuclear families are small, one finds that most houses can comfortably accomodate five people. It would be wasteful to build large houses as a matter of routine, in a culture where one finds no extended families. If this were to change, so would the average house size.

Scaling With Data

Scaling with data refers to the ability of an RDBMS to accomodate increasing amounts of data without adverse degeneration in performance. While a gradual change in performance is always expected as the amount data increases, some database systems are designed to be used in scenarios of small-to-medium datasets. Most websites, for instance, will never have to deal with millions of subscribers, and so the database systems designed for the average website are not suitable for use in national-scale projects, and *vice versa*.

Scaling With Resources

This refers to the ability of the RDMS to accomodate more resources (what is referred to as "vertical scaling" and "horizontal scaling") without affecting the functioning of the database adversely. In most use-cases, the database is a single system on a single machine, and this is a case that ought to be highly-optimised because it is very common. However, this is always a

trade-off, since a system optimised for this very common case can generally not be extended to scale well with increased resources.

In the final analysis, the *RapidSMS 1000 Days* project, having outgrown the initial assumptions and design, and evidently become more of a national-scale project, is better-served by a mature RDBMS designed for large-scale deployment and consequent scaling. This is a demonstrative list of the database systems that are designed for this type of project:

1. Microsoft SQL Server
2. Oracle Database System
3. PostgreSQL Database System

Given other considerations, such as availability of adapters, programmability, and usability, the open-source PostgreSQL Database System is found to be the best fit for the project.

PostgreSQL *versus* MySQL

Given that the RapidSMS project has historically used the MySQL database, a brief comparison of the two is warranted. Both support the same standard SQL syntax, and are semantically-equivalent. Nevertheless, there are large differences both by design and by circumstance.

PostgreSQL

Starting development in the 1990s, and derived from an RDBMS whose history goes back to the 1980s, the PostgreSQL system has been refined and improved steadily by a large and dedicated community of open source developers, with the support of both large and small companies.
PostgreSQL is also the best-documented database system. For this reason, it is deployed in such sectors as the telecom industry, where its abilities are tested, developed, and widely appreciated.

MySQL

MySQL, on the other hand, has seen about half as much time of development, and far less involvement from varied situations, having been always a simple database for the simple website. While it is tempting to thing of RapidSMS as a web application, because it exploits web technology, data collection systems like RapidSMS have very different concerns (as we will discuss shortly).
Honestly, MySQL has one main benefit: programmers are commonly well-practiced with it, because it can work with extremely small resources, such as those found on standard laptops and desktop PCs. It is mainly for this reason—and its integration with the popular programming language PHP, on which most programmers cut their unfortunate little teeth—that it is considered a good database. But in comparison with PostgreSQL—and

particularly given our requirements—it has no saving graces.

On the programming level, there is no significant difference in code written for PostgreSQL and code written for MySQL. All web development frameworks, and in particular the Django framework that we use in RapidSMS, provide an abstraction layer that hide the details of the database, such that to switch from one to another is a matter of changing one line in a configuration file.

At present, we use MySQL simply due to circumstance. In other words: it is what we found, so we use it. There is no particular feature of MySQL that we desire in the project, and certainly none that cannot be got from another good relational database.

On the other hand, there is a particular feature of the PostgreSQL Database System that is required in the RapidSMS project, one that MySQL doesn't (yet) have.
PostgreSQL handles symbolic data in a very efficient way, both for storage and manipulation. by "symbolic data", we mean (for instance) the short strings that are used as "codes" in the RapidSMS application. PostgreSQL has a collection of very complex but very efficient algorithms for processing such data.

The Message & Report Models

Purpose

This section introduces the two core objects in the *RapidSMS 1000 Days* code, with the goal of familiarising the reader with them and their implications for the rest of the code and data.

They affect the rest of the program on all levels. Since the main item of the project is the report, which is delivered as a message, these two objects need to be described and understood.

Prior Situation

In the previous RapidSMS installations, the code-base relied heavily on a Report object which was a composite of report codes which were kept in their own separate database table.
The consequence was that a request for a single report generated at least two different queries, one of them on a table that grew in size exponentially. For every report, there are several codes. But if, for example, a report has 10 codes, a query for 10 reports would result in 100 requests. This doesn't really scale, especially in the deployment scenarios of the *RapidSMS 1000 Days* project.

There is also an organisational problem with having report objects whose core data is stored in disparate locations, even if in the same database. In the standard Object Relational Mapper used in the project considers these two—the reports and their fields—As distinct and separate items which do not have to be kept in synchrony.

It is this design decision in particular that resulted in a lot of the scaling problems that were encountered in the previous deployments of RapidSMS, which in large part have necessitated this phase of the redesign.

The Goals of the New Database Design

Semantic Backward-Compatibility

The most-fundamental feature of the new database design is that it doesn't break semantic compatibility with the previous database design. In all instances, there is a strict equivalence of capabilities.

Specialised Alternative Object-Relational Mapper

The previous database design was dependent entirely on the Django Object Relational Mapper. This resulted in a very simple database structure for representing the reports (specifically, the isolation of a report's attributes to a table of their own) that implemented the well-known database normal forms (1NF, 2NF, *etc.*). However, when one has considerations other than pure

relational calculus, such strictness leads to a loss of efficiency.

Extensibile Core

Due to our experience in having to extend the functionality of the previous system, we are convinced that the Object Relational Mapper should be be specialised to some degree for the purposes of storing reports for efficient analysis later on. Furthermore, it should expose extensive database-related metadata about the objects and the database connection to the programmer, to permit further extensions of the ORM in a direction that is conducive for any specific project, without having to diverge from the core code-base of RapidSMS.

Flat Report Tables

A crucial feature of the new database design is that it would take O(n) time complexity to process the commonest query executed against a set of reports—since all the crucial data is now in the same place, as it is supposed to be—which was not the case with the previous system.

The Goals of the New Object Design

The core objects of the RapidSMS 1000 Project have also been redesigned to improve extensibility and code-reusability.

Tightly-Coupled Report and Message objects

The relationship between the Report and the Message is also better-expressed by the explicit use of the factory model, generating Reports conditionally from Messages, and creating Messages unconditionally from the SMS delivered.

Tightly-Coupled Report and Message objects

The Message and the Report replace the App as the core application object. In the previous App model, every keyword is considered a separate application, which was always responsible for dealing with the text in a programmatic way.
In the new model, a lot of the basic assumptions of a reporting SMS are already codified in the base classes. This means that the consistencies that all “apps” share are already described programmatically in one place, and enables the structure of the expected Messages to be described declaratively, and not programmatically.

Message Description

This leads to a rough equivalence between the descriprion of the Message object in the code and the description in the documentation of the message it handles.

```
class ChildMessage(ThouMessage):
  fields  = [IDField, NumberField, DateField, VaccinationField, VaccinationCompletionField,
             (SymptomCodeField, True),
             LocationField, WeightField, MUACField]

class DeathMessage(ThouMessage):
  fields  = [IDField, NumberField, DateField, LocationField, DeathField]

class ResultMessage(ThouMessage):
  fields  = [IDField,
             (SymptomCodeField, True),
             LocationField, InterventionField, MotherHealthStatusField]

class RedResultMessage(ThouMessage):
  fields  = [IDField, DateField,
             (SymptomCodeField, True),
             LocationField, InterventionField, MotherHealthStatusField]

class NBCMessage(ThouMessage):
  fields  = [IDField, NumberField, NBCField, DateField,
             (SymptomCodeField, True),
             BreastFeedField, NBCInterventionField, NewbornHealthStatusField]

class PNCMessage(ThouMessage):
  fields  = [IDField, PNCField, DateField,
             (SymptomCodeField, True),
             InterventionField, MotherHealthStatusField]
```

Granularised Message Validation

The base classes are also mostly abstract, describing generic predicates for validation and handling, so that complicated validations can be programmed into the system without having to extend the fundamental objects of the code-base.
Checks can vary from simple bounds-checking to querying external databases.

These checks are placed on separate levels of validation, such that a keyword can be described at different levels of granularity. The keyword that only needs to implement simple checks on the data need not be described in many lines of code; yet if it is necessary to implement elaborate logic, it is still possible to program the low-level predicates.

One App, One Framework, Two ORMs

The new Object Relational Mapper is strongly influenced by our particular situation and experience in the past. This ORM is therefore not suited for the more-normal cases, for which the Django ORM being used in the previous installations was suited.
Therefore we have found it reasonable and sound to leave the Django ORM accessible to the rest of the application, where it may be used for the rest of the non-crucial objects of the *RapidSMS 1000 Days* project.

Sample Application

The code comes with a pre-created sample application which describes a report type that is widely divergent from any that we have to deal with in the *RapidSMS 1000 Days* project. This sample application proves the extensibility and wide applicability of the new base system, since in fact it was developed with the *RapidSMS 1000 Days* project use-cases in mind.

```
from thoureport.reports.reports import *

class RedReport(ThouReport):
 pass

# Testing report.
class RevenceReport(ThouReport):
  pass
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
../reports/rapid1000reports.py
```

```

# Testing field. Takes any of my names.
class RevNameField(ThouField):
  @classmethod
  def expectations(self):
    return ['Revence', 'Kato', 'Kalibwani']

# Testing message.
class RevMessage(ThouMessage):
  fields  = [(RevNameField, True)]

MSG_ASSOC = {
  'PRE':  PregMessage,
  'REF':  RefMessage,
  'ANC':  ANCMessage,
  'DEP':  DepMessage,
  'RISK': RiskMessage,
  'RED':  RedMessage,
  'BIR':  BirMessage,
  'CHI':  ChildMessage,
  'DTH':  DeathMessage,
  'RES':  ResultMessage,
  'RAR':  RedResultMessage,
  'NBC':  NBCMessage,
  'PNC':  PNCMessage,
  'REV':  RevMessage,
}
~
rapid1000messages.py [+]
```

PARSER.HTML

index
/Users/revence/Documents/Hacks/thousand/thoureport/messages/parser.py

parser

```
# encoding: utf-8
```

Modules

psycopg2 re

Classes

ThouField

class **ThouField**

```
Class defining the field of a "RapidSMS 1000 Days" message field.
Has the ability to parse itself from a message string, conditionally pulling several
It also supplies contextual information about its unsuccessful parsing.
```

Methods defined here:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods defined here:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

is_legal(self, fld) from __builtin__.classobj

```
This method is to be extended to restrict fields, in the event that the `expect
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods defined here:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

RAPID1000MESSAGES.HTML

index
/Users/revence/Documents/Hacks/thousand/thoureport/messages/rapid1000messages.py

rapid1000messages

```
# encoding: utf-8
```

Modules

psycopg2 re

Classes

- ThouMessage
  - ANCMessage
  - BirMessage
  - ChildMessage
  - DeathMessage
  - DepMessage
  - NBCMessage
  - PNCMessage
  - PregMessage
  - RedMessage
  - RedResultMessage
  - RefMessage
  - ResultMessage
  - RevMessage
  - RiskMessage
  - UnknownMessage

- ThouMsgError
- thoureport.messages.parser.ThouField

- CodeField
  - DeathField
  - FloatedField
    - MUACField
    - WeightField
  - GenderField
  - HandwashField
  - HealthStatusField
    - MotherHealthStatusField
    - NewbornHealthStatusField
  - InterventionField
    - NBCInterventionField
  - LocationField
  - NumberedField
    - ANCField
    - HeightField
    - NBCField
      - BreastFeedField
    - PNCField
    - VaccinationField
      - VaccinationCompletionField
  - PregCodeField
    - PrevPregField
  - SymptomCodeField
    - RedSymptomCodeField
  - ToiletField
- DateField
- IDField
  - PhoneBasedIDField
- NumberField
  - GravidityField
  - ParityField

TextField

class **ANCField**(NumberedField)

```
Ante-Natal Care visit number is a ... number.
```

Method resolution order:

ANCField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
Matches the code, not insisting on the string that precedes the number.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **ANCMessage**(ThouMessage)

```
Ante-natal care visit message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000mes
rapid1000messages.SymptomCodeField>, True), <class rapid1000messages.Locat

---

Methods inherited from ThouMessage:

__enter__(self)

__exit__(self, tp, val, tb)

__init__(self, cod, fobs, errs)

semantics_check(self)

Class methods inherited from ThouMessage:

create_in_db(self, repc) from __builtin__.classobj

creation_sql(self, repc) from __builtin__.classobj

```
# @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)

parse(msg)

parse_report(msg, fh, hsh, **kwargs)

process(klass, cod, msg)

```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:

created = False

class **BirMessage**(ThouMessage)

```
Birth message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000messa
rapid1000messages.GenderField>, (<class rapid1000messages.SymptomCode
rapid1000messages.BreastFeedField>, <class rapid1000messages.WeightField>]

Methods inherited from ThouMessage:

__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:

create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)

```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:

created = False

class **BreastFeedField**(NBCField)

```
Breast-feeding code has new-born care fields.
```

Method resolution order:

BreastFeedField

NBCField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
The accepted codes. May be booleanisable.
```

Class methods inherited from NBCField:

is_legal(self, fld) from __builtin__.classobj

```
Matches the code, not insisting on the string that precedes the number.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **ChildMessage**(ThouMessage)

```
Child message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000messa
rapid1000messages.VaccinationField>, <class rapid1000messages.VaccinationCo
<class rapid1000messages.LocationField>, <class rapid1000messages.WeightField

---

Methods inherited from ThouMessage:

__enter__(self)

__exit__(self, tp, val, tb)

__init__(self, cod, fobs, errs)

semantics_check(self)

Class methods inherited from ThouMessage:

create_in_db(self, repc) from __builtin__.classobj

creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)

parse(msg)

parse_report(msg, fh, hsh, **kwargs)

process(klass, cod, msg)

```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:

created = False

class **CodeField**(thoureport.messages.parser.ThouField)

```
This should match basically any simple code, plain and numbered.
```

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
    Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
    Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **DateField**(thoureport.messages.parser.ThouField)

```
The descriptor for valid message fields.
```

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **DeathField**(CodeField)

```
Field for describing death codes.
```

Method resolution order:

DeathField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj
Expected death codes.

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj
Basically a simple regex.

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)
Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj
Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class **DeathMessage**(ThouMessage)

```
Death message.
```

Data and other attributes defined here:
fields = [<class rapid1000messages.IDField>, <class rapid1000messa
rapid1000messages.LocationField>, <class rapid1000messages.DeathField>]

Methods inherited from ThouMessage:
__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)

```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **DepMessage**(ThouMessage)

```
Departure message.
```

Data and other attributes defined here:
fields = [<class rapid1000messages.IDField>, <class rapid1000messages.NumberF

Methods inherited from ThouMessage:
__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)
```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **FloatedField**(CodeField)
```
Field for codes that carry fractional numbers with decimal points.
```

Method resolution order:
FloatedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:
is_legal(self, fld) from __builtin__.classobj
```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:
__init__(self, val, many)
```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:
dbtype(self, it=None) from __builtin__.classobj
```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj
```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj
```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj
```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **GenderField**(CodeField)

```
Gender is a a code.
```

Method resolution order:

GenderField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
Boy or girl?
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
    Field-level specificiation of the SQL data type to give to the database column
    TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
    Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
    Returns the string that represents the default DB value.
    TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
    Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj
    This method is to be extended if the `expectations` mechanism is almost suffici
    This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
    Field-level specification of the necessary escapes for sanitising the data for
    TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj
    Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
    A field will process thestring `txt` to parse of a valid object of its class (p
    Error cases are communicated as single-token error codes, strings that should b
    Returns a triple: the resulting Message object, the array of error codes, and t

class **GravidityField**(NumberField)
Gravity is a number.

Method resolution order:

GravidityField

NumberField

thoureport.messages.parser.ThouField

Class methods inherited from NumberField:

is_legal(self, fld) from __builtin__.classobj
    Basically a regex.

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **HandwashField**(CodeField)

```
Field for codes concerning handwwashing basic.
```

Method resolution order:

HandwashField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
Hand-wash or no hand-wash?
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **HealthStatusField**(CodeField)

```
General health status field.
```

Method resolution order:

HealthStatusField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **HeightField**(NumberedField)

```
Field for height codes.
```

Method resolution order:

HeightField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods inherited from NumberedField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **IDField**(thoureport.messages.parser.ThouField)

```
The commonly-used ID field.
```

Class methods defined here:

is_legal(self, ans) from __builtin__.classobj

```
For now, checks are limited to length assurance.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj

Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj

Returns the descriptive name of this field (useful for displaying database colu

expectations(self) from __builtin__.classobj

This method is to be extended to restrict fields to certain pre-determined code

expected(self, fld) from __builtin__.classobj

This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj

Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj

Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class **InterventionField**(CodeField)

Field for general interventions.

Method resolution order:

InterventionField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

Intervention codes.

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

Basically a simple regex.

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj

Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj

Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj

Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj

This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj

Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj

Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class **LocationField**(CodeField)

Field for codes that communicate locations.

Method resolution order:

LocationField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
The codes for RED alerts.
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **MUACField**(FloatedField)

```
MUAC is a decimal float.
```

Method resolution order:

MUACField

FloatedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
Regex alert.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **MotherHealthStatusField**(HealthStatusField)

```
Mother health status fields.
```

Method resolution order:

MotherHealthStatusField

HealthStatusField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
Mother health codes.
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class NBCField(NumberedField)

```
New-Born Care visit number is a ... number.
```

Method resolution order:

NBCField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj
    Pre-enforcing the discipline that `is_legal` does not enforce.

is_legal(self, fld) from __builtin__.classobj
    Matches the code, not insisting on the string that precedes the number.

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)
    Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
    Field-level specificiation of the SQL data type to give to the database column
    TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
    Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
    Returns the string that represents the default DB value.
    TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
    Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj
    This method is to be extended if the `expectations` mechanism is almost suffici
    This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
    Field-level specification of the necessary escapes for sanitising the data for
    TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj
    Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
    A field will process thestring `txt` to parse of a valid object of its class (p
    Error cases are communicated as single-token error codes, strings that should b
    Returns a triple: the resulting Message object, the array of error codes, and t

class **NBCInterventionField**(InterventionField)
    New-born care intervention field.

Method resolution order:

NBCInterventionField

InterventionField

CodeField

thoureport.messages.parser.ThouField

Class methods inherited from InterventionField:

expectations(self) from __builtin__.classobj

```
Intervention codes.
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **NBCMessage**(ThouMessage)

```
New-born care message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000messa
rapid1000messages.DateField>, (<class rapid1000messages.SymptomCodeFi
rapid1000messages.NBCInterventionField>, <class rapid1000messages.NewbornH

Methods inherited from ThouMessage:

__enter__(self)

__exit__(self, tp, val, tb)

__init__(self, cod, fobs, errs)

semantics_check(self)

Class methods inherited from ThouMessage:

create_in_db(self, repc) from __builtin__.classobj

creation_sql(self, repc) from __builtin__.classobj

```
# @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)

parse(msg)

parse_report(msg, fh, hsh, **kwargs)

process(klass, cod, msg)

```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:

created = False

class **NewbornHealthStatusField**(HealthStatusField)

```
New born health status is a ... health status.
```

Method resolution order:

NewbornHealthStatusField

HealthStatusField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
New born health status codes.
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **NumberField**(thoureport.messages.parser.ThouField)

```
The descriptor for number fields.
```

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **NumberedField**(CodeField)

```
Field for codes that carry whole numbers.
```

Method resolution order:

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **PNCField**(NumberedField)

```
Post-Natal Care visit number is a ... number.
```

Method resolution order:

PNCField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
Matches the code, not insisting on the string that precedes the number.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **PNCMessage**(ThouMessage)

```
Post-natal care message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000mes
rapid1000messages.SymptomCodeField>, True), <class rapid1000messages.Interv

---

Methods inherited from ThouMessage:

__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
# @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)

```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **ParityField**(NumberField)

```
Parity is a number.
```

Method resolution order:

ParityField

NumberField

thoureport.messages.parser.ThouField

Class methods inherited from NumberField:
is_legal(self, fld) from __builtin__.classobj

```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:
__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
Returns the descriptive name of this field (useful for displaying database colu

expectations(self) from __builtin__.classobj
This method is to be extended to restrict fields to certain pre-determined code

expected(self, fld) from __builtin__.classobj
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj
Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class **PhoneBasedIDField**(IDField)
The alternative ID field, incorporating phone number.

Method resolution order:

PhoneBasedIDField

IDField

thoureport.messages.parser.ThouField

Class methods defined here:

is_legal(self, fld) from __builtin__.classobj

```
Basic regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **PregCodeField**(CodeField)

```
Field for Pregnancy codes.
```

Method resolution order:

PregCodeField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
These are all the codes related to pregnancy.
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **PregMessage**(ThouMessage)

```
Pregnancy message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000mes rapid1000messages.GravidityField>, <class rapid1000messages.ParityField rapid1000messages.SymptomCodeField>, True), <class rapid1000message rapid1000messages.ToiletField>, <class rapid1000messages.HandwashField>]

Methods inherited from ThouMessage:

__enter__(self)

__exit__(self, tp, val, tb)

__init__(self, cod, fobs, errs)

semantics_check(self)

Class methods inherited from ThouMessage:

create_in_db(self, repc) from __builtin__.classobj

creation_sql(self, repc) from __builtin__.classobj

```
# @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)

parse(msg)

parse_report(msg, fh, hsh, **kwargs)

process(klass, cod, msg)

```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:

created = False

class **PrevPregField**(PregCodeField)

```
Field for Previous pregnancy codes.
```

Method resolution order:

PrevPregField

PregCodeField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

```
Codes associated with previous pregnancy.
```

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **RedMessage**(ThouMessage)

```
Red alert message.
```

Data and other attributes defined here:

fields = [(<class rapid1000messages.RedSymptomCodeField>, True), <class rapid

Methods inherited from ThouMessage:

__enter__(self)

__exit__(self, tp, val, tb)

__init__(self, cod, fobs, errs)

semantics_check(self)

Class methods inherited from ThouMessage:

create_in_db(self, repc) from __builtin__.classobj

creation_sql(self, repc) from __builtin__.classobj

```
# @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)

parse(msg)

parse_report(msg, fh, hsh, **kwargs)

process(klass, cod, msg)

```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:

created = False

class **RedResultMessage**(ThouMessage)

```
Red alert result message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, <class rapid1000messages.Datel
rapid1000messages.LocationField>, <class rapid1000messages.InterventionField>

Methods inherited from ThouMessage:

__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
# @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)

```
# “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **RedSymptomCodeField**(SymptomCodeField)

```
Field for codes associated with symptoms.
```

Method resolution order:

RedSymptomCodeField

SymptomCodeField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:
expectations(self) from __builtin__.classobj

```
These are the codes in red alerts.
```

Class methods inherited from CodeField:
is_legal(self, fld) from __builtin__.classobj

```
Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)
Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj
Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class **RefMessage**(ThouMessage)
Referral message.

Data and other attributes defined here:

fields = [<class rapid1000messages.PhoneBasedIDField>]

Methods inherited from ThouMessage:

__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)

```
    # "Private"
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **ResultMessage**(ThouMessage)

```
Result message.
```

Data and other attributes defined here:
fields = [<class rapid1000messages.IDField>, (<class rapid1000messages.Sympt
rapid1000messages.InterventionField>, <class rapid1000messages.MotherHealthS

Methods inherited from ThouMessage:
__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:

caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)
```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **RevMessage**(ThouMessage)
```
Testing message. Takes any number of legal fields.
```

Data and other attributes defined here:
fields = [(<class rapid1000messages.TextField>, True)]

Methods inherited from ThouMessage:
__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj
```
    # @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)
```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **RiskMessage**(ThouMessage)
```
Risk report message.
```

Data and other attributes defined here:

fields = [<class rapid1000messages.IDField>, (<class rapid1000messages.Sympt
rapid1000messages.WeightField>]

Methods inherited from ThouMessage:
__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj
```
    # @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)
```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False

class **SymptomCodeField**(CodeField)
```
Field for codes associated with symptoms.
```

Method resolution order:
SymptomCodeField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:
expectations(self) from __builtin__.classobj
```
    These are the codes associated with symptoms.
```

Class methods inherited from CodeField:
is_legal(self, fld) from __builtin__.classobj
```
    Basically a simple regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **TextField**(thoureport.messages.parser.ThouField)

```
What I call TextField is really a RevNameField.
```

Class methods defined here:

expectations(self) from __builtin__.classobj

```
Only my names are legal here.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)
Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

is_legal(self, fld) from __builtin__.classobj
This method is to be extended to restrict fields, in the event that the `expect

subname(self) from __builtin__.classobj
Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class ThouMessage

Base class describing the standard RapidSMS 1000 Days message.

Methods defined here:

__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods defined here:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj
```
    # @staticmethod
```

Static methods defined here:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)
```
    # “Private”
```

pull_code(msg)

Data and other attributes defined here:
created = False
fields = []

class **ThouMsgError**
```
    Unused.
```

Methods defined here:
__init__(self, errors)

class **ToiletField**(CodeField)
```
    Field for codes concerning toilets.
```

Method resolution order:
ToiletField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj
Toilet or no toilet?

Class methods inherited from CodeField:

is_legal(self, fld) from __builtin__.classobj
Basically a simple regex.

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)
Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj
Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj
Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj
Returns the name of this field as it would be used in composing a column name.

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t

class **UnknownMessage**(ThouMessage)

```
To the Unknown Message.
Since every message has to be successfully parsed as a Message object, this is the o
```

Methods inherited from ThouMessage:
__enter__(self)
__exit__(self, tp, val, tb)
__init__(self, cod, fobs, errs)
semantics_check(self)

Class methods inherited from ThouMessage:
create_in_db(self, repc) from __builtin__.classobj
creation_sql(self, repc) from __builtin__.classobj

```
    # @staticmethod
```

Static methods inherited from ThouMessage:
caseless_hash(hsh)
parse(msg)
parse_report(msg, fh, hsh, **kwargs)
process(klass, cod, msg)

```
    # “Private”
```

pull_code(msg)

Data and other attributes inherited from ThouMessage:
created = False
fields = []

class **VaccinationCompletionField**(VaccinationField)

```
Vaccination Completion fields.
```

Method resolution order:
VaccinationCompletionField

VaccinationField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj
```
Levels of vaccination checkpoints.
```

Class methods inherited from NumberedField:

is_legal(self, fld) from __builtin__.classobj
```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)
```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj
```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj
```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj
```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj
```
Returns the descriptive name of this field (useful for displaying database colu
```

expected(self, fld) from __builtin__.classobj
```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj
```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj
```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)
```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **VaccinationField**(NumberedField)

Vaccination Completion is apparently a number.

Method resolution order:

VaccinationField

NumberedField

CodeField

thoureport.messages.parser.ThouField

Class methods defined here:

expectations(self) from __builtin__.classobj

The vaccination completion codes.

Class methods inherited from NumberedField:

is_legal(self, fld) from __builtin__.classobj

Basically a regex.

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

Initialise the field and its associated value `val`, specifying whether it is c

---

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i

dbvalue(self, it, kasa) from __builtin__.classobj

Returns the value if `it` escaped with the database cursor `kasa`.

default_dbvalue(self) from __builtin__.classobj

Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.

display(self) from __builtin__.classobj

Returns the descriptive name of this field (useful for displaying database colu

expected(self, fld) from __builtin__.classobj

This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl

fixed_for_db(self, val) from __builtin__.classobj

Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

class **WeightField**(FloatedField)

```
Field for weight codes.
```

Method resolution order:

WeightField

FloatedField

CodeField

thoureport.messages.parser.ThouField

Class methods inherited from FloatedField:

is_legal(self, fld) from __builtin__.classobj

```
Basically a regex.
```

Methods inherited from thoureport.messages.parser.ThouField:

__init__(self, val, many)

```
Initialise the field and its associated value `val`, specifying whether it is c
```

Class methods inherited from thoureport.messages.parser.ThouField:

dbtype(self, it=None) from __builtin__.classobj

```
Field-level specificiation of the SQL data type to give to the database column
TODO: At present, every field is supposed to be a TEXT. This is clearly false i
```

dbvalue(self, it, kasa) from __builtin__.classobj

```
Returns the value if `it` escaped with the database cursor `kasa`.
```

default_dbvalue(self) from __builtin__.classobj

```
Returns the string that represents the default DB value.
TODO: Currently gives no heed to the opinions of the field itself.
```

display(self) from __builtin__.classobj

```
Returns the descriptive name of this field (useful for displaying database colu
```

expectations(self) from __builtin__.classobj

```
This method is to be extended to restrict fields to certain pre-determined code
```

expected(self, fld) from __builtin__.classobj

```
This method is to be extended if the `expectations` mechanism is almost suffici
This default one works best on the simple codes that we have, not every possibl
```

fixed_for_db(self, val) from __builtin__.classobj

```
Field-level specification of the necessary escapes for sanitising the data for
TODO: This only passes because we are using simple, plain codes in testing.
```

subname(self) from __builtin__.classobj

```
Returns the name of this field as it would be used in composing a column name.
```

Static methods inherited from thoureport.messages.parser.ThouField:

pull(self, cod, txt, many=False)

```
A field will process thestring `txt` to parse of a valid object of its class (p
Error cases are communicated as single-token error codes, strings that should b
Returns a triple: the resulting Message object, the array of error codes, and t
```

Functions

first_cap(s)

```
Capitalises the first letter (without assaulting the others like Ruby's #capitalize
```

Data

MSG_ASSOC = {'ANC': <class rapid1000messages.ANCMessage>, 'BIR': <class rapid1000messages.BirMessage>, 'CHI': <class rapid1000messages.ChildMessage>, 'DEP': <class rapid1000messages.DepMessage>, 'DTH': <class rapid1000messages.DeathMessage>, 'NBC': <class rapid1000messages.NBCMessage>, 'PNC': <class rapid1000messages.PNCMessage>, 'PRE': <class rapid1000messages.PregMessage>, 'RAR': <class rapid1000messages.RedResultMessage>, 'RED': <class rapid1000messages.RedMessage>, ...}

db = <connection object at 0x7fb110c75030; dsn: 'dbna...password=xxxxxxxxxxxx host=localhost', closed: 0>

REPORTS.HTML

index
/Users/revence/Documents/Hacks/thousand/thoureport/reports/
reports.py

reports

```
# encoding: utf-8
```

Modules

psycopg2 re

Classes

ThouReport

class **ThouReport**

```
The base class for all "RapidSMS 1000 Days" reports.
```

Methods defined here:

__init__(self, msg)

```
Initialised with the Message object to which it is coupled.
```

save(self)

```
This method saves the report object into the table for that report class, retur
It is not idempotent at this level; further constraints should be added by inhe
```

Class methods defined here:

load(self, msgtxt) from __builtin__.classobj

Data and other attributes defined here:

columned = False

created = False

Data

DATABASES = {'default': {'ENGINE': 'django.db.backends.postgresql_psycopg2', 'HOST': 'localhost', 'NAME': 'thousanddays', 'PASSWORD': 'thousanddays', 'USER': 'thousanddays'}}

THE_DATABASE = <connection object at 0x7fd281d46ff0; dsn: 'dbna...password=xxxxxxxxxxxx host=localhost', closed: 0>

RAPID1000REPORTS.HTML

index
/Users/revence/Documents/Hacks/thousand/thoureport/reports/rapid1000reports.py

rapid1000reports

Modules

psycopg2 re

Classes

thoureport.reports.reports.ThouReport
RedReport
RevenceReport

class **RedReport**(thoureport.reports.reports.ThouReport)

```
Red Reports
```

Methods inherited from thoureport.reports.reports.ThouReport:

__init__(self, msg)

```
Initialised with the Message object to which it is coupled.
```

save(self)

```
This method saves the report object into the table for that report class, retur
It is not idempotent at this level; further constraints should be added by inhe
```

Class methods inherited from thoureport.reports.reports.ThouReport:

load(self, msgtxt) from __builtin__.classobj

Data and other attributes inherited from thoureport.reports.reports.ThouReport:

columned = False
created = False

class **RevenceReport**(thoureport.reports.reports.ThouReport)

```
Testing keyword, Revence Reports
```

Methods inherited from thoureport.reports.reports.ThouReport:

__init__(self, msg)

```
Initialised with the Message object to which it is coupled.
```

save(self)

```
This method saves the report object into the table for that report class, retur
It is not idempotent at this level; further constraints should be added by inhe
```

Class methods inherited from thoureport.reports.reports.ThouReport:

load(self, msgtxt) from __builtin__.classobj

Data and other attributes inherited from thoureport.reports.reports.ThouReport:

columned = False

created = False

Data

DATABASES = {'default': {'ENGINE': 'django.db.backends.postgresql_psycopg2', 'HOST': 'localhost', 'NAME': 'thousanddays', 'PASSWORD': 'thousanddays', 'USER': 'thousanddays'}}

THE_DATABASE = <connection object at 0x7f8fb04938f0; dsn: 'dbna...password=xxxxxxxxxxxx host=localhost', closed: 0>

Version: 1.1
Editor: revence@1st.ug.