



*International
Virtual
Observatory
Alliance*

ADQL 2.0 Erratum 1: remove nonterminal separator grammar token

Version 1.0

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Working group

Data Access Layer

This version

<http://www.ivoa.net/documents/ADQL2Err1/20141222>

Latest version

<http://www.ivoa.net/documents/ADQL2Err1>

Previous versions

This is the first public release

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Abstract

This Erratum is intended to amend the ADQL-2.0 (Ortiz et al. 2008) recommendation removing the *separator* token from the ADQL grammar. The change introduced by this Erratum will both clarify the common usage of whitespaces and comments in current ADQL-2.0 and get closer to the SQL-92 (International Organization for Standardization 1992) standard upon which the ADQL is based.

Status of This Document

This is an IVOA Note expressing suggestions from and opinions of the authors. It is intended to share best practices, possible approaches, or other perspectives on interoperability with the Virtual Observatory. It should not be referenced or otherwise interpreted as a standard specification.

A list of current IVOA Recommendations and other technical documents can be found at <http://www.ivoa.net/Documents/>.

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Acknowledgments

This Erratum takes direct input from the TAP Implementation Notes (Demleitner et al. 2013) and following discussions held at the Spring (ESAC, Spain) and Fall (Banff, Canada) 2014 IVOA Interoperability Meetings.

Conformance-related definitions

The words “MUST”, “SHALL”, “SHOULD”, “MAY”, “RECOMMENDED”, and “OPTIONAL” (in upper or lower case) used in this document are to be interpreted as described in IETF standard, Bradner (1997).

The *Virtual Observatory (VO)* is general term for a collection of federated resources that can be used to conduct astronomical research, education, and outreach. The *International Virtual Observatory Alliance (IVOA)* is a global collaboration of separately funded projects to develop standards and infrastructure that enable VO applications.

1 Erratum Content

The definition for the nonterminal *separator* in the current ADQL-2.0 specification (Ortiz et al. 2008) is not clear. It suggests, with its only reference in the *character_string_literal* that any ADQL language token may be followed by a separator and that nondelimiter tokens shall be followed by a delimiter token or a separator. The intention, however, was probably to let white-space and comments occur wherever they are allowed in SQL-92 (International Organization for Standardization 1992).

This Erratum updates the ADQL-2.0 recommendation removing the *separator* token rule from the ADQL grammar (BNF grammar, Appendix A, Ortiz et al. 2008).

This, consequently, modifies the rule for *character_string_literal* to

```
<character_string_literal> ::=
  <quote> [ <character_representation>... ] <quote>
```

omitting the final

```
[ { <separator>... <quote>
  [ <character_representation>... ] <quote> }... ]
```

These changes won't affect in any other way the ADQL grammar.

2 Rationale

The BNF grammar for the ADQL language is listed in Appendix A of the ADQL-2.0 recommendation. In this grammar a *separator* rule is present, with the following definition:

```
<separator> ::= { <comment> | <space> | <newline> }...
```

However this nonterminal token is only referenced in the rule for the *character_string_literal*, i.e.

```
<character_string_literal> ::=
  <quote> [ <character_representation>... ] <quote>
  [ { <separator>... <quote>
    [ <character_representation>... ] <quote> }... ]
```

It is uncontroversial that the intent is to allow comments and white-space wherever SQL-92 allows them. The ADQL standard however says differently, and there should be a clarification. Between two alternatives, adding a clarifying subsection to the ADQL-2.0 standard or removing the *separator*, the second seems more attractive and has been considered suitable for a simple erratum to the current recommendation. The issue was in any case accepted as errata by the IVOA DAL WG as early as firstly discussed.

3 Impact Assessment

The change introduced by this erratum has no other impact on the current ADQL grammar and language apart from what already described in the previous sections of this note. Current implementations and parsers of ADQL query strings shouldn't be affected at all by this change.

A Changes from Previous Versions

No previous versions yet.

References

Bradner, S. (1997), 'Key words for use in RFCs to indicate requirement levels', RFC 2119.
URL: <http://www.ietf.org/rfc/rfc2119.txt>

Demleitner, M., Harrison, P. & Taylor, M. (2013), ‘TAP Implementation Notes, Version 1.0’, IVOA Note.

International Organization for Standardization (1992), ‘The database language SQL’, Technical Report, Document ISO/IEC9075:1992.

Ortiz, I., Lusted, J., Dowler, P., Szalay, A., Shirasaki, Y., Nieto-Santisteban, M. A., Ohishi, M., O’Mullane, W., Osuna, P., the VOQL-TEG & the VOQL Working Group (2008), ‘IVOA astronomical data query language’, IVOA Recommendation.

URL: *<http://www.ivoa.net/Documents/latest/ADQL.html>*