

Anchors in CMRL

CMRL Version 1.0

1 Introduction

Anchors in CMRL are used to establish links to content. Anchors are similar to anchors on the web: they make it easy to create a way for users to navigate a content hierarchy.

This document describes anchors in CMRL. The document assumes that you have some familiarity with DOTGO and CMRL (obtained, e.g., by reading *A Brief Introduction to DOTGO*).

2 A Simple Example

Let's start by considering a simple example. Consider the following CMRL fragment under the internet domain name "example":

```

<match pattern="">
  <message>
    <content>Welcome to example.com<br/>
    Reply # for result<br/>
    <a query="example circle"/> Circle<br/>
    <a query="example square"/> Square<br/>
    <a query="example triangle"/> Triangle</content>
  </message>
</match>

<match pattern="circle">
  <message>
    <content>You have selected a circle</content>
  </message>
</match>

<match pattern="square">
  <message>
    <content>You have selected a square</content>
  </message>
</match>

<match pattern="triangle">

```

```
<message>
  <content>You have selected a triangle</content>
</message>
</match>
```

Here the query “example circle” produces the response “You have selected a circle,” the query “example square” produces the response “You have selected a square,” and the query “example triangle” produces the response “You have selected a triangle.” The query “example” produces the response

```
Reply # for result
(1) Circle
(2) Square
(3) Triangle
```

The query “example” followed immediately (in the very next text message) by the reply “1” produces the response “You have selected a circle.” Similarly, the query “example” followed by the reply “2” produces the response “You have selected a square,” and the query “example” followed by the reply “3” produces the response “You have selected a triangle.”

How does it work? The “null” match contains a `<message>` tag that contains a `<content>` tag that contains three `<a>` tags. The `<a>` tag is used within a `<content>` tag. The `<a>` tag must contain the attribute `query` and may contain a text string. The system turns the `<a>` tags within a `<content>` tag into links, which it enumerates, formats, and displays. If a `<content>` tag contains an `<a>` tag, then the reply sent by the user is treated differently than normal; in particular, if the reply matches one of the enumerated links, then the query specified by the corresponding `<a>` tag is executed as though it were an incoming request. (If the reply sent by the user does not match one of the enumerated links, then it is treated as a normal query.)

3 The `<a>` and `<anchor>` Tags

The `<a>` tag is an abbreviated version of the similar but more general `<anchor>` tag. Consider the following CMRL fragment under the internet domain name “example”:

```
<match pattern="weather">
  <message>
    <content>Today sunny, H 72<br/>
Reply <anchor>
  <message>
    <content>Today will be sunny and fair with a high of 72 deg F</content>
  <message>
</anchor> for details<br/>
<br/>
Tonight clear, L 47<br/>
Reply <anchor>
  <message>
```

```

    <content>Tonight will be clear and cool with a low of 47 deg F</content>
  </message>
</anchor> for details</content>
  </message>
</match>

```

Here the query “example weather” produces the response

```

Today sunny, H 72
Reply (1) for details

```

```

Tonight clear, L 47
Reply (2) for details

```

The reply “1” produces the response “Today will be sunny and fair with a high of 72 deg F,” whereas the reply “2” produces the response “Tonight will be clear and cool with a low of 47 deg F.”

Like the `<a>` tag, the `<anchor>` tag is used within a `<content>` tag, and the system turns the `<anchor>` tags within a `<content>` tag into links which it enumerates, formats, and displays. The difference between the `<a>` tag and the `<anchor>` tag is that the `<a>` tag can refer only to a query whereas the `<anchor>` tag can refer to any CMRL terminating node. Specifically, the `<anchor>` tag must contain exactly one terminating node (which in this case is the `<message>` tag), which is resolved to if the reply matches the corresponding enumerated link.

To be clear about the similarity between the `<a>` tag and the `<anchor>` tag, let’s consider a final example. The following CMRL fragment under the internet domain name “example”

```

<match pattern="">
  <message>
    <content>He was able to <a query="example elucidate">elucidate</a>
the subject</content>
  </message>
</match>

```

```

<match pattern="elucidate">
  <message>
    <content>elucidate -verb<br/>
to make lucid or clear; throw light upon; explain</content>
  </message>
</match>

```

is equivalent to the following CMRL fragment under the internet domain name “example”

```

<match pattern="">
  <message>
    <content>He was able to <anchor><query>example elucidate</query>
elucidate</anchor> the subject</content>
  </message>

```

```
</match>

<match pattern="elucidate">
  <message>
    <content>elucidate -verb<br/>
to make lucid or clear; throw light upon; explain</content>
  </message>
</match>
```

In both cases, the query “example” produces the response

He was able to elucidate(1) the subject

and the reply “1” produces the response

```
elucidate -verb
to make lucid or clear; throw light upon; explain
```

4 Summary

By establishing links to specific content, anchors make it easy to create a way for users to navigate a content hierarchy. The next step is to try it for yourself.