8.2. Typed Replacement Slots

Overview

Replacement slots may be given a *replacement type* to indicate what type of value may be used to replace the slot. The *replacement type* directly follows the '+' symbol inside the slot (with optional whitespace between). Permitted *replacement types* include:

- **id**: The slot may be replaced by a single SNOMED CT concept reference.
- **scg**: The slot may be replaced by a SNOMED CT compositional grammar expression (either a precoordinated or postcoordinated expression).
- **tok**: The slot may be replaced by a token (or symbol) that is defined in the base syntax.
- **str**: The slot may be replaced by a quoted string of characters. This is used to represent a concrete attribute value that is typed as a string.
- **int**: The slot may be replaced by a integer (preceded by a '#' symbol). This is used to represent a concrete attribute value that is typed as an integer.
- **dec**: The slot may be replaced by a decimal (preceded by a '#' symbol). This is used to represent a concrete attribute value that is typed as a decimal.
- **bool**: The slot may be replaced by a boolean. This is used to represent a concrete attribute value that is typed as a boolean.

Please note, that if no *replacement type* is specified after the '+' symbol, then a *replacement type* of '**scg**' is assumed.

Concept Replacement Slots

Slots with a replacement type of '**id**' may only be replaced by a single concept reference. For example, the replacement slot in the following expression template

```
404684003 |Clinical finding| : 255234002 |After| = [[+id]]
```

may be replaced by the concept 82271004 | Injury of head| to form the expression

```
404684003 |Clinical finding| : 255234002 |After| = 82271004 |Injury of head|
```

However, it is not possible to generate a nested expression using this expression template, as the slot may not be replaced by a postcoordinated expression.

Expression Replacement Slots

Slots with a replacement type of '**scg**' may be replaced by any (precoordinated or postcoordinated) expression. For example, the slot in the following expression template

```
404684003 |Clinical finding| : 255234002 |After| = [[+scg]]
```

may be replaced by any of the following values

```
82271004 |Injury of head|
417163006 |Injury| : 363698007 |Finding site| = 69536005 |Head structure|
417163006 |Injury| + 118934005 |Disorder of head|
```

to generate the following expressions.

```
404684003 |Clinical finding| : 255234002 |After| = 82271004 |Injury of head|
404684003 |Clinical finding| : 255234002 |After| = ( 417163006 |Injury| : 363698007 |Finding site| = 69536005 |Head structure| )
404684003 |Clinical finding| : 255234002 |After| = ( 417163006 |Injury| + 118934005 |Disorder of head| )
```

Please note that for the second and third replacements, the template processor must add round brackets around the subexpression to ensure that the resulting expression is syntactically valid.

Token Replacement Slots

Slots with a replacement type of '**tok**' may be replaced by any token (or symbol) that is defined in the base language. For example, the following expression has a definition status that has not yet been defined.

> [[+tok]] 73211009 |Diabetes mellitus| : 363698007 |Finding site| = 113331007 |Endocrine system|

If the definitionStatus | '<<<'| is used to complete the slot then the resulting expression would be:

> <<< 73211009 |Diabetes mellitus| : 363698007 |Finding site| = 113331007 |Endocrine system|

Concrete Value Replacement Slots

Slots with a replacement type of '**str**', '**int**', '**dec**' or '**bool**' may be replaced by any string, integer, decimal or boolean value respectively. For example, the slot in the expression template below:[1]

> 322236009 |Paracetamol 500mg tablet| : 774167006 |Product name| = [[+str]]

may be replaced by the string PANADOL to form the following expression

> 322236009 |Paracetamol 500mg tablet| : 774167006 |Product name| = "PANADOL"

Please note that the template processor must add quotation marks around the string to ensure that the resulting expression is syntactically valid.

The slot in the following expression template:

> 417720003 |Zinc 25 mg oral capsule| :
>   { 749999999108 |Has pack size magnitude| = [[+int]],
>   774163005 |Has pack size unit| = 428641000 |Capsule| }

may be replaced by the integer value 30 to form the expression

> 417720003 |Zinc 25 mg oral capsule| :
>   { 1142142004 |Has pack size| = #30,
>   774163005 |Has pack size unit| = 428641000 |Capsule| }

Please note that the template processor must add a hash symbol ("#") before the integer value to ensure that the resulting expression is syntactically valid.

The slot in the following expression template:

> 426016003 |Diazepam 5 mg/mL oral solution| :
>   { 1142142004 |Has pack size| = [[+dec]],
>   774163005 |Has pack size unit| = 258770004 |Liter| }

may be replaced by the decimal value 1.5 to form the expression

> 426016003 |Diazepam 5 mg/mL oral solution| :
>   { 1142142004 |Has pack size| = #1.5,
>   774163005 |Has pack size unit| = 258770004 |Liter| }

Please note that the template processor must add a hash symbol ("#") before the decimal value to ensure that the resulting expression is syntactically valid.

And lastly, the slot in the following expression template:

318969005 |Irbesartan 150 mg oral tablet| : 859999999102 |Is in national benefit scheme| = [[+bool]]

may be replaced by the boolean value TRUE to form the expression[2]

318969005 |Irbesartan 150 mg oral tablet| : 859999999102 |Is in national benefit scheme| = TRUE

Footnotes

RefNotes

1   Please note that these example expression templates are based on a hypothetical drug concept model, and are not intended to reflect any specific drug model. In these expressions, the SNOMED CT identifiers created with the '9999999' namespace are for example only, and should not be used in a production environment.
2   Please note that the concept 859999999102 |Is in national benefit scheme| is a fictitious attribute used here to illustrate boolean values.