Method::Signatures

Introduction

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Method::Signatures

- Motivation
- Real world example
- Good to know
- Questions

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Motivation

- Unpacking

```
my $self = shift;
my %arg = @_;
my $id = $arg{id};
```

- Validating

```
my %arg = @_;
$arg{id} =~ s/\D//g;
```


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Functionality

func

```
sub xy {
    my $x = shift;
    return $x * 42
}
```

```
func xy($x) {
    return $x * 42
}
```


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Functionality

method

```
package Foo;
sub xy {
    my $self = shift;
    my $x = shift;
    return $x * $self->get_question(42);
}

method xy($x) {
    return $x * $self->get_question(42);
}
```


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Real World Example

```
sub list_users {
  my $self = shift;

  my $sql = "select id,username from users
  where group=3 order by id desc limit 0,5";

  return $self->{db_object}->db($sql)->fetchall_arrayref;
}
```

Real World Example

```
sub list_users {
  my $self = shift;
  my %arg = @_;

  my $sql = "select id,username from users
             where group='$arg{group}'
             order by $arg{order_by} $arg{order_type}
             limit $arg{offset},$arg{limit} ";

  return $self->{db_object}->db($sql)->fetchall_arrayref;
}
```

Real World Example

```
sub list_users {
...
  unless($arg{group}){
    return undef;
  }

    $arg{order_by} =    $arg{order_by} || "id";
    $arg{order_type} =  $arg{order_type} || "desc";
    $arg{offset} =      $arg{offset} || "0";
    $arg{limit}  =      $arg{limit} || "10";
...
```


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Real World Example

```
sub list_users {
...
  foreach (qw(group offset limit)){
    $arg{$_} =~ s/\D//g;
  }
  $arg{order_type} =  ($arg{order_type} eq "asc") ?
  "asc" : "desc";

  my %allowed_ob = map {$_=>$_} qw(id group);
  $arg{order_by} = $allowed_ob{$arg{order_by}} || "id";
...
```


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Real World Example

```
sub list_users {
    my $self = shift;
    my %arg = @_;

    foreach (qw(group offset limit)){ #
        $arg{$_} =~ s/\D//g;
    }

    unless($arg{group}){
        warn "No group given";
        return undef;
    }

    $arg{offset} =  $arg{offset} || "0";
    if(!$arg{limit} || ($arg{limit} < 1) || ($arg{limit > 200) {
        $arg{limit} = 10;
    }

    $arg{order_type} =  ($arg{order_type} eq "asc") ? "asc" : "desc";

    my %allowed_order_by = map {$_=>$_} qw(id username group);
    $arg{order_by} = $allowed_order_by{$arg{order_by}} || "id";

    my $sql = "select id,username from users
    where group='$arg{group}' order by $arg{order_by}
    $arg{order_type} limit $arg{offset},$arg{limit}";
    return $self->{db_object}->db($sql) ->fetchall_arrayref;
}
```

Real World Example

```
method list_users(
  Int :$group! is ro,
  Int :$offset //= 0,
  Int :$limit where [1..200] //= 10,
  Str :$order_by where [qw(id username group)] //= 'id',
  Str :$order_type where [qw(asc desc)] = 'desc', ) {

    my $sql = "select id,username from users
    where group='$group' order by $order_by
    $order_type limit $offset,$limit";

  return $self->{db_object}->db($sql)->fetchall_arrayref;
}
```

Real World Example

```
method list_users(
    Int :$group! is ro,
…
}
```


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Real World Example

```
method list_users(
…
    Int :$offset //= 0,
…
}
```

```
method list_users(
…
    Int :$offset = 0,
…
}
```

Real World Example

```
method list_users(
…
 Int :$limit where [1..200] //= 10,
…
}
```


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Real World Example

```
method list_users(
…
Str :$order_by where [qw(id username group)] //= 'id',
…
}
```


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Real World Example

```
method list_users(
…
Str :$order_type where [qw(asc desc)] = 'desc',
…
}
```


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Good to know

- Parameter validation is on run time
- Parameters are copies (Perl6 = aliases)
- Aliased parameters

```
func add_one(\@foo) {
    $_++ for @foo;
}

my @arr = (1,2,3);
add_one(\@arr);  # @arr is now (2,3,4)
```

Good to know

- No run-time perfomance penalty
- Type checking penalty the same as in Mo(o|u)se::Util::TypeConstraints
- No source filters
- There is a Method::Signatures::Simple

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Thank You!

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