

Optimering under körningstid

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Kortfattat

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Simon
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Introduktion

Optimering

Kritik

Metodik

- ▶ Tolk för ett funktionellt språk
- ▶ Optimeras när det körs
- ▶ Programmeraren väljer var

Språk

- ▶ Innehåller få konstruktioner:
 - ▶ case
 - ▶ let
 - ▶ lambda
 - ▶ samt primitiva datatyper
- ▶ Förutsätter att koden är vältypad

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```
map f li = case li of
  { Nil    -> Nil
  ; Cons x xs -> Cons (f x) (map f xs)
  };
```

```
main = let
  { xs = 1 : 2 : 3 : 4 : 5 : Nil
  } in map (\ x. x + 5) xs;
```

```
power n x = if n == 0  
  then 1  
  else x * power (n - 1) x
```

```
power 4 x =>  
  power 4 x
```

```
power n x = if n == 0  
  then 1  
  else x * power (n - 1) x
```

```
power 4 x =>  
  if 4 == 0  
  then 1  
  else x * power (4 - 1) x
```

```
power n x = if n == 0  
  then 1  
  else x * power (n - 1) x
```

```
power 4 x =>  
  x * power 3 x
```

```
power n x = if n == 0  
  then 1  
  else x * power (n - 1) x
```

```
power 4 x =>  
  x * ( if 3 == 0  
    then 1  
    else x * power (3 - 1) x)
```



```
power n x = if n == 0  
  then 1  
  else x * power (n - 1) x
```

```
power 4 x =>  
  x * ( x * ( x * (x * 1)))
```

- ▶ Implementerbart i en kompilator?
 - ▶ Introspektion
- ▶ Hur mycket går att göra statiskt?

The screenshot shows the Git GUI interface. The top menu bar includes Project, Edit, View, Go, and Help. Below the menu is a toolbar with icons for Back, Forward, Refresh, Cut, Copy, Paste, and Find... On the right, there are icons for Browse and History.

The main window is divided into two panes. The left pane shows a commit graph with a vertical timeline of commits. The right pane shows a table of commit history with columns for Author and Date.

Graph	Short Log	Author	Date
	Chars and Strings added, SugarTree, AST, Pretty...	Simon Edwardsson	Mon 11:08 PM
	Added pprinter for stacks	Daniel Gustafsson	Mon 11:30 PM
	Added notes about presentation (swedish)	Daniel Gustafsson	Mon 05:11 PM
	Broken line in Optimise	Simon Edwardsson	Feb 28 02:17 PM
	Merge branch 'master' of git@github.com:simedw/Kandidat	Simon Edwardsson	Feb 28 02:16 PM
	Hack, added so gc prints variable not in heap	Daniel Gustafsson	Feb 28 02:18 PM
	More tests, ListTest7 is still sloooowww	Simon Edwardsson	Feb 28 02:15 PM
	Merge branch 'master' of git@github.com:simedw/Kandidat	Simon Edwardsson	Feb 28 02:02 PM
	Merge branch 'master' of github.com:simedw/Kandidat	Daniel Gustafsson	Feb 28 01:13 PM
	merge	Olle	Feb 28 01:02 PM
	Generalised primary operations for it to be easier to add and remove them	Olle	Feb 28 12:58 PM
	Merge branch 'master' of github.com:simedw/Kandidat into primops	Olle	Feb 28 10:31 AM
	Merge branch 'master' of github.com:simedw/Kandidat into primops	Olle	Feb 28 10:01 AM
	Changed the way alias works in the prelude	Olle	Feb 28 09:38 AM
	Gobby session: optimise fix	Daniel Gustafsson	Feb 28 01:11 PM
	Added Benchmark + :force atom	Simon Edwardsson	Feb 28 02:02 PM

At the bottom, the 'Change 1 of 1' pane shows the diff for the selected commit. The diff is for the file 'test/Main.hs' and shows changes to the 'testsuiteStatic' variable and the 'ListTest7' function.

```
diff --git a/test/Main.hs b/test/Main.hs
index 369df5a..02e7850 100644
--- a/test/Main.hs
+++ b/test/Main.hs
@@ -86,6 +86,8 @@ testsuiteStatic = [
     = drop 3 (reverse list)
     , 'PrimeTest1.hs'  --> True
     , 'OptTest1.hs'    --> length (take 3 (repeat 4))
+    , 'ListTest6.hs'   --> sort (reverse (take 3 [(0 :: Integer)..]))
+    , 'NegTest1.hs'    --> (-1) - (-1 :: Integer)
 ]
```

Gobby

- ▶ gobby
- ▶ projektor

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