

Structuur van Computerprogramma's I

Assistenten



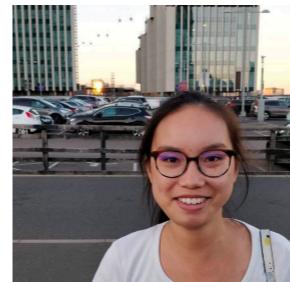
Sander Huyghebaert



Mathijs Saey



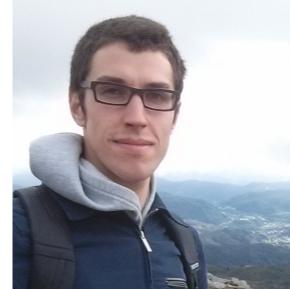
Jef Jacobs



Lin de Huybrecht



Youri Coppens



Ward Muylaert

Vragen? Problemen?

`scpi@dinf.vub.ac.be`

De WPOs

- ~ 3x per week, nadien ~1x per week
- Oefeningen op concepten gezien tijdens HOCs
- Naar de WPOs komen = opletten en meewerken

Taken

- 1 taak
- Verplicht voor studenten 1ste bachelor
- Optioneel voor schakel- en werkstudenten
- Feedback

Tussentijdse Evaluatie

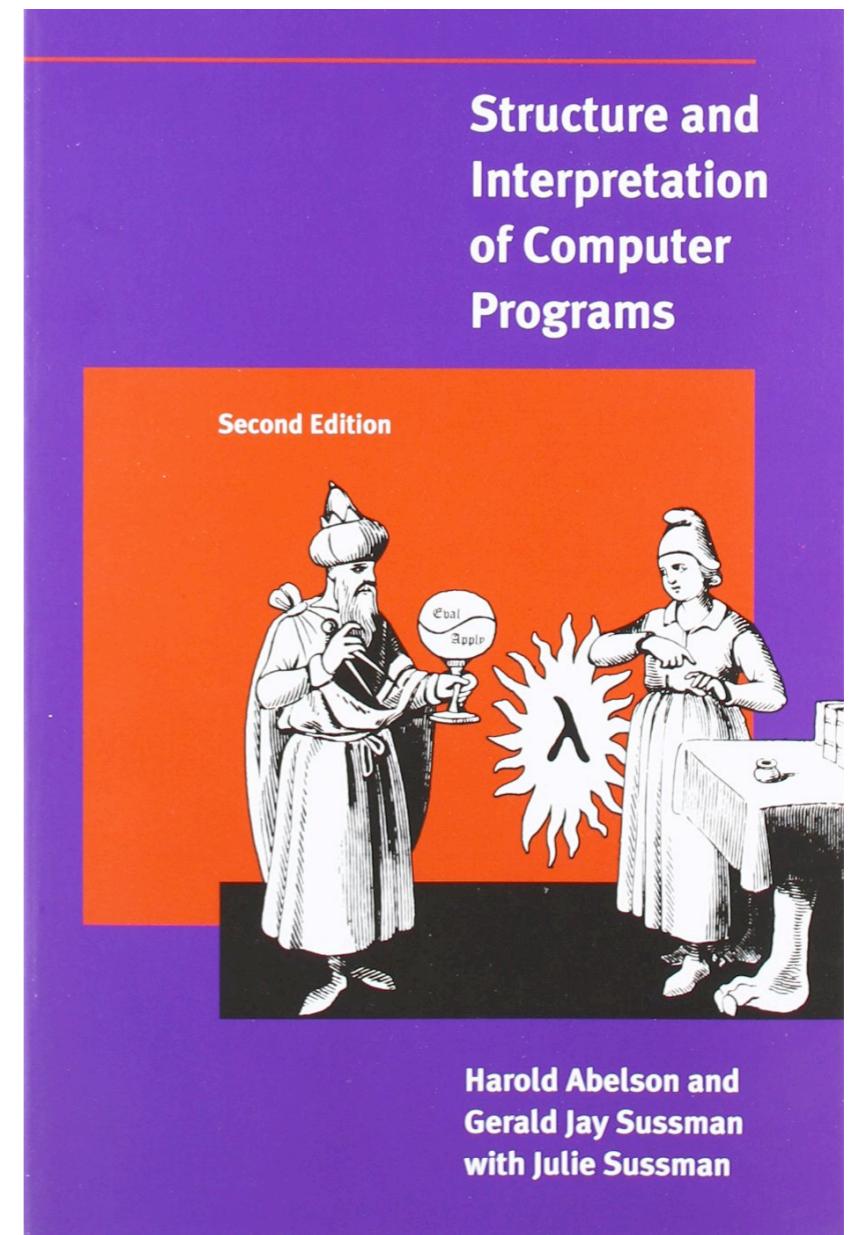
- Verplicht voor 1ste bachelorstudenten
- Optioneel voor schakel- en werkstudenten
- Maandag 30/10, 09:00 - 12:00 (tentatief)
- 20% van eindresultaat als eindresultaat < tentamen

Examen

- Schriftelijk examen
 - Oefeningen + Theorie

Het boek

- Gratis op de MIT website:
<https://mitpress.mit.edu/sicp/>



Andere nuttige weetjes

- SBC: Vincent Luyten
- Infogroep (peter/meter)
- Opnames HOC
 - <http://studio.infogroep.be>
- Voorbeeldexamens
 - Beschikbaar op Canvas



Zaal PCs

- Activeer eigen account op
<https://wendy.vub.ac.be/accounts/>
- Log in met guest/guest

Eigen PC

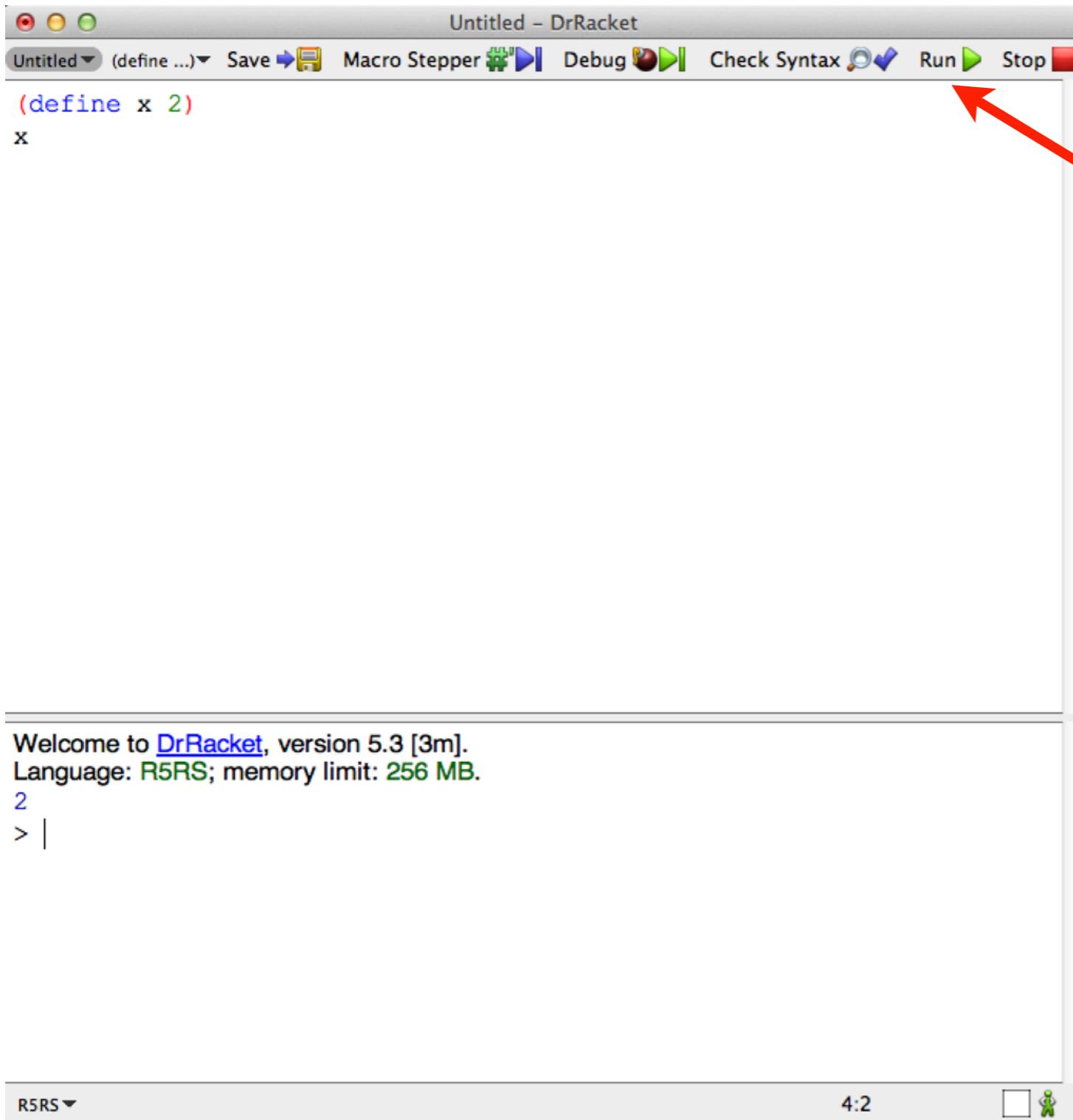
- Download & installeer racket
<https://racket-lang.org>

DrRacket

<https://www.racket-lang.org>



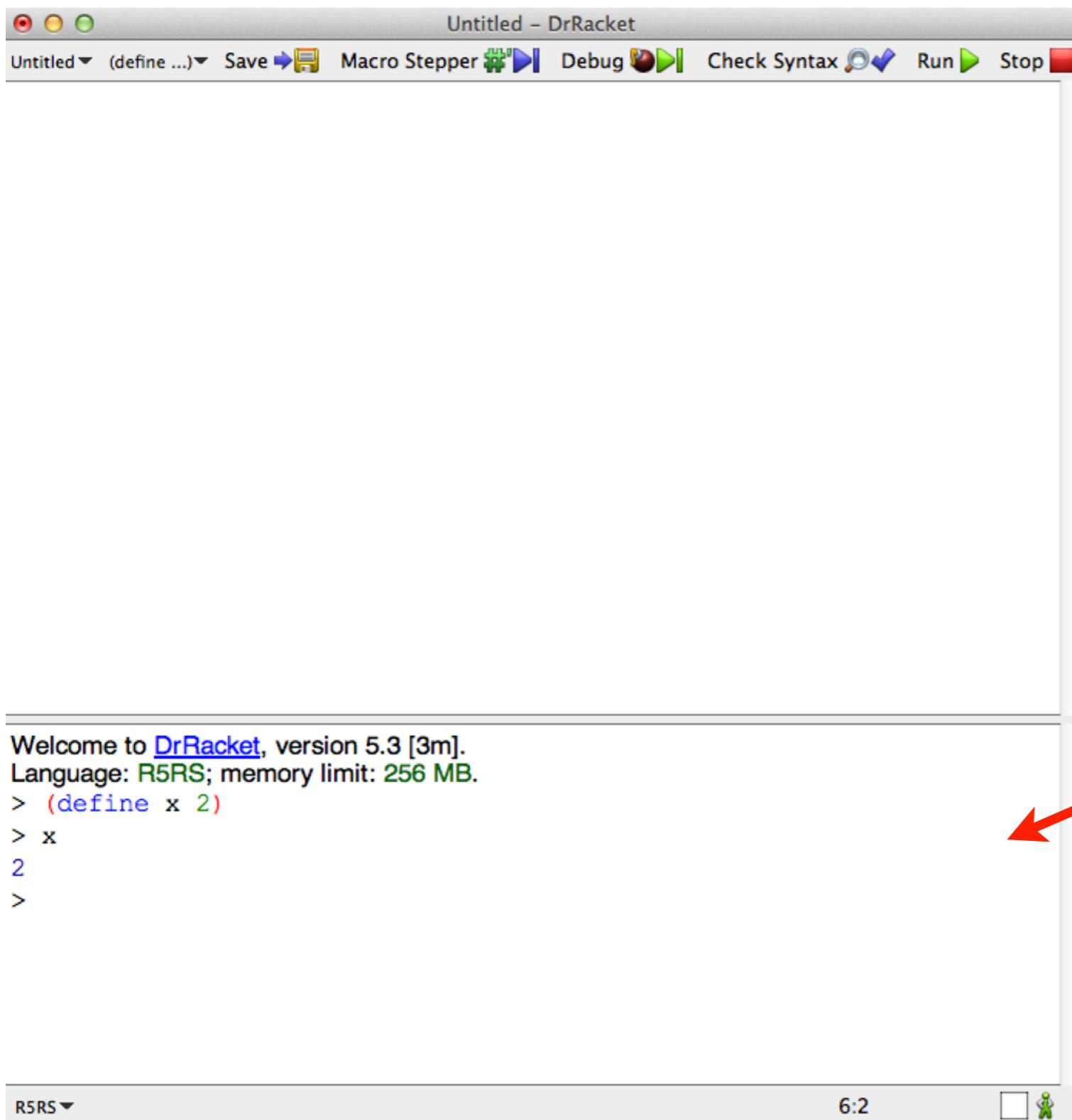
Definition window



A screenshot of the DrRacket IDE interface. The title bar says "Untitled – DrRacket". The menu bar includes "Untitled", "(define ...)", "Save", "Macro Stepper", "Debug", "Check Syntax", "Run" (with a green arrow icon), and "Stop". In the main editor area, the code `(define x 2)` is typed, followed by a blank line, and then the variable `x`. A red arrow points from the text "Opslaan van je code" to the "Save" button in the toolbar. At the bottom left, it says "Welcome to DrRacket, version 5.3 [3m]. Language: R5RS; memory limit: 256 MB." The bottom status bar shows "R5RS" and "4:2".

Opslaan van je code

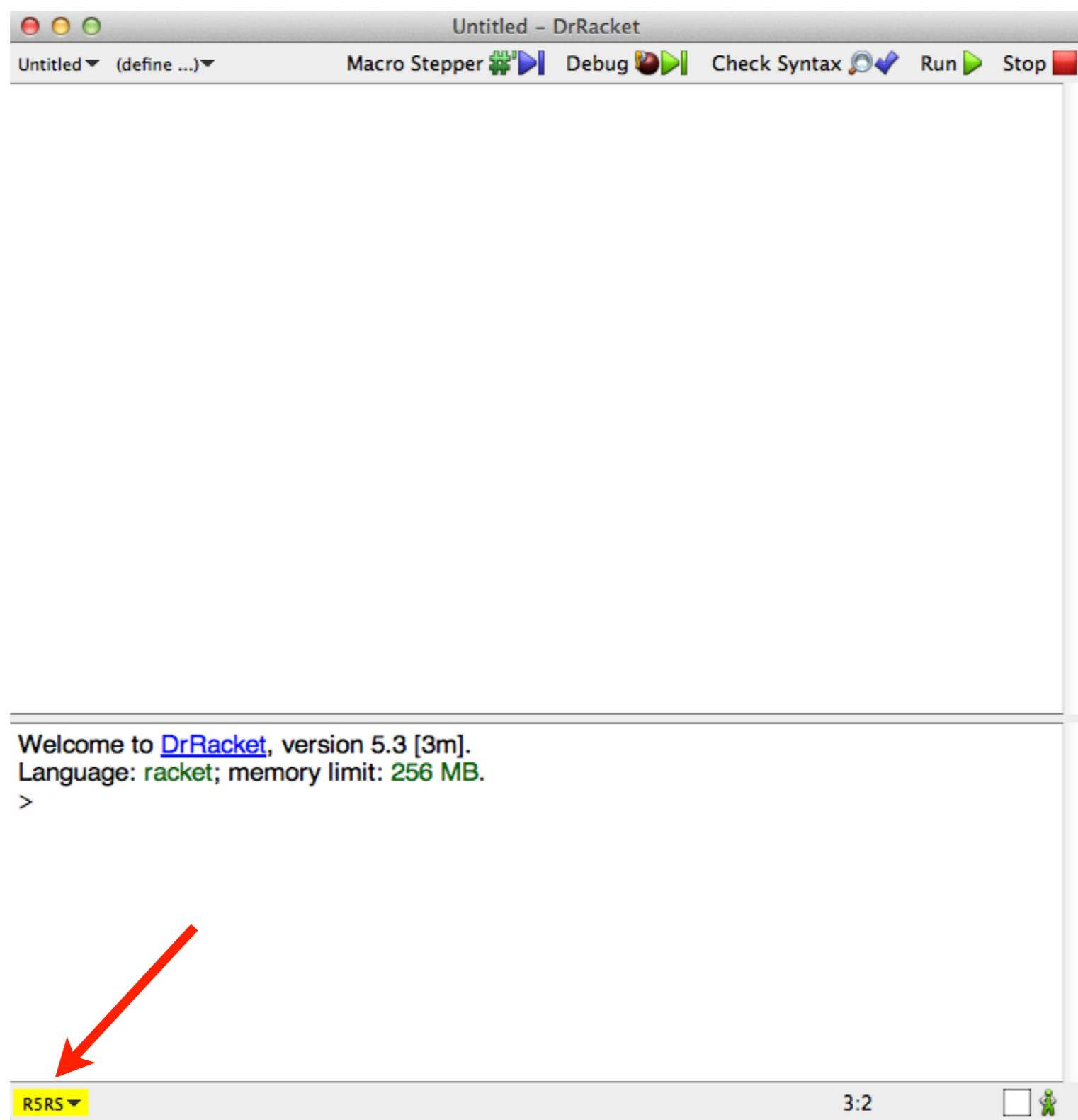
Interaction window



Read-Eval-Print loop

zo werkt Viviane in de les

DrRacket





DrRacket

File

Edit

View

Language

Racket

Insert

Windows

Help



Untitled ▾ (define ...) ▾ ➔

Choose Language... ⌘L
Add Teachpack...

Untitled – DrRacket

 The Racket Language (⌘R)

Start your program with `#lang` to specify the desired dialect. For example:

```
#lang racket      [docs]  
#lang racket/base [docs]  
#lang typed/racket [docs]  
#lang scribble/base [docs]
```

... and many more

 Teaching Languages (⌘T)**How to Design Programs**

Beginning Student

Beginning Student with List Abbreviations

Intermediate Student

Intermediate Student with `lambda`

Advanced Student

DeinProgramm

Die Macht der Abstraktion – Anfänger

Die Macht der Abstraktion

Die Macht der Abstraktion mit Zuweisungen

Die Macht der Abstraktion – fortgeschritten

 Other Languages (⌘O)**Legacy Languages**

R5RS

Pretty Big

► Swindle

Experimental Languages

Lazy Racket

FrTime

Algol 60


Show Details

Cancel

OK

The Racket Language (%R)

Start your program with `#lang` to specify the desired dialect. For example:

```
#lang racket      [docs]  
#lang racket/base [docs]  
#lang typed/racket [docs]  
#lang scribble/base [docs]
```

... and many more

Teaching Languages (%T)

How to Design Programs

Beginning Student

Beginning Student with List Abbreviations

Intermediate Student

Intermediate Student with lambda

Advanced Student

DeinProgramm

Die Macht der Abstraktion – Anfänger

Die Macht der Abstraktion

Die Macht der Abstraktion mit Zuweisungen

Die Macht der Abstraktion – fortgeschritten

Other Languages (%O)

Legacy Languages

R5RS

Pretty Big

▷ Swindle

Experimental Languages

Lazy Racket

FrTime

Algol 60

Input Syntax

Case sensitive

Dynamic Properties

No debugging or profiling

Debugging and profiling

Debugging

Syntactic test suite coverage

Output Syntax

Output Style

Constructor

Quasiquote

write

print

Show sharing in values

Insert newlines in printed values

Use decimal notation for rationals

Initial Bindings

Disallow redefinition of initial bindings

[Hide Details](#)

[Revert to Language Defaults](#)

[Cancel](#)

[OK](#)

Opgaven

The screenshot shows the Dodona interface for the course 'Structuur van Computerprogramma's 1'. At the top, it displays the course name and the professor, Viviane Jonckers, Wolfgang De Meuter - Vrije Universiteit Brussel. Below this, there are statistics: 174 registered users, 46 assignments, and 6,490 submitted solutions. A sidebar on the right lists assignment categories: Defeningenreeksen, Taak 1, Expressies en Proced..., Procedures, condities..., Deputy reeks: Expressie..., Processen: Recursie..., Hogere Orde Proced..., and Lijsten. At the bottom, there is a section for 'Oefeningenreeksen' (Assignment sets) with a specific entry for 'Taal 1'.

The screenshot shows the SCPI website at soft.vub.ac.be. The page title is 'Oefeningenbundel'. It features a list of 10 assignments: 1 Expressies en Procedures, 2 Procedures, condities en blockstructuren, 3 Processen: Recursie versus Iteratie, 4 Hogere Orde Procedures, 5 Lijsten, 6 Abstracte Data Types, 7 Bomen, 8 Objecten, 9 Destructieve operaties, and 10 Stromen. A note on the right states: 'Nadat alle groepen een reeks voltooid hebben, zullen de oplossingen voor die reeks hier beschikbaar zijn.' Below this, there is descriptive text about the book 'Structure and Interpretation of Computer Programs' and links to its online version and PDF. It also mentions the Dodona plugin for DrRacket.

dodona.ugent.be

- Opgaven die we tijdens de les bekijken
- Taken

soft.vub.ac.be/SCPI

- Alle opgaven
- Oplossingen

Dodona

The screenshot displays two overlapping windows from the Dodona platform, both titled '() 3.1.1 Recursief'.

Top Window: This window shows a code editor with the following code:

```
> (rec-add 4 5)
9
```

Below the code editor is a navigation bar with tabs: Indienen, Oplossingen, and Feedback. The 'Indienen' tab is selected. To the right of the code editor is a sidebar titled 'Procesen: Recursie versus Iteratie' containing the following items:

- 3.1 Som Herbekeken
- 3.1.1 Recursief
- 3.1.2 Iteratief
- 3.2 Multiply
- 3.2.1 Fast Multiply
- 3.3.1 Het getal e

Bottom Window: This window also has the title '() 3.1.1 Recursief'. It contains the same code as the top window:

```
> (rec-add 4 5)
9
```

It features a similar navigation bar with 'Indienen', 'Oplossingen', and 'Feedback' tabs. The 'Oplossingen' tab is selected. On the right, there is a sidebar titled 'Procesen: Recursie versus Iteratie' with the following items:

- 3.1 Som Herbekeken
- 3.1.1 Recursief
- 3.1.2 Iteratief
- 3.2 Multiply
- 3.2.1 Fast Multiply
- 3.3.1 Het getal e
- 3.4 Mutuele recursie
- 3.5 Diepte van een recursief proces
- 3.6 Implementeer
- 3.6.1 Bereken de recursie diepte
- 3.7.1 Gebruik van de runtime-stack
- 3.7.2 Binaire vormen
- 3.9.1 display-n
- 3.9.2 parasol

Below the sidebar, there is a feedback section for a solution submitted by 'Mathijs SAEY' in 'Structuur van Computerprogramma's 1'. The feedback indicates:

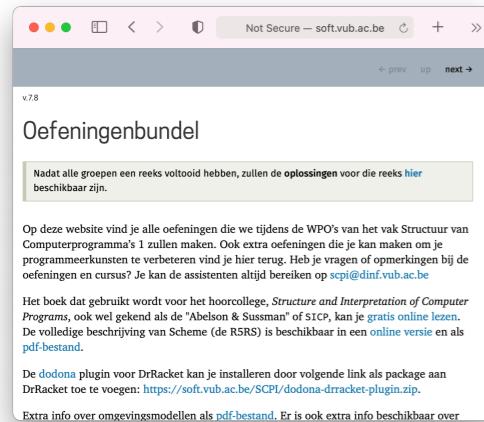
- Fout: Er zitten nog een paar fouten in je code (2 dagen geleden)
- Fout: Er zitten nog een paar fouten in je code (5 dagen geleden)

The 'Code' section shows the student's code and the expected output:

Test	Code	Correcte testen	Uitvoer
nul	(rec-add 0 0) 0	✓	✓
positieve getallen	(rec-add 3 2) 5 (rec-add 3 10) 13	✓	✓
is rec-add recursief?	'rec-add' is recursive Jouw uitvoer: 1 #t	X	Verwachte uitvoer: 1 #t

At the bottom of the interface, there are social media links for Twitter and Facebook, and links for 'Steun Dodona', 'Contact', 'Status', 'Privacyverklaring', 'Jouw data', and 'Dodona 6.1.2'.

Dodona



REPL



Is mijn code correct?



Ja/Nee + Testinvoer



Dodona Plugin



Submission Report

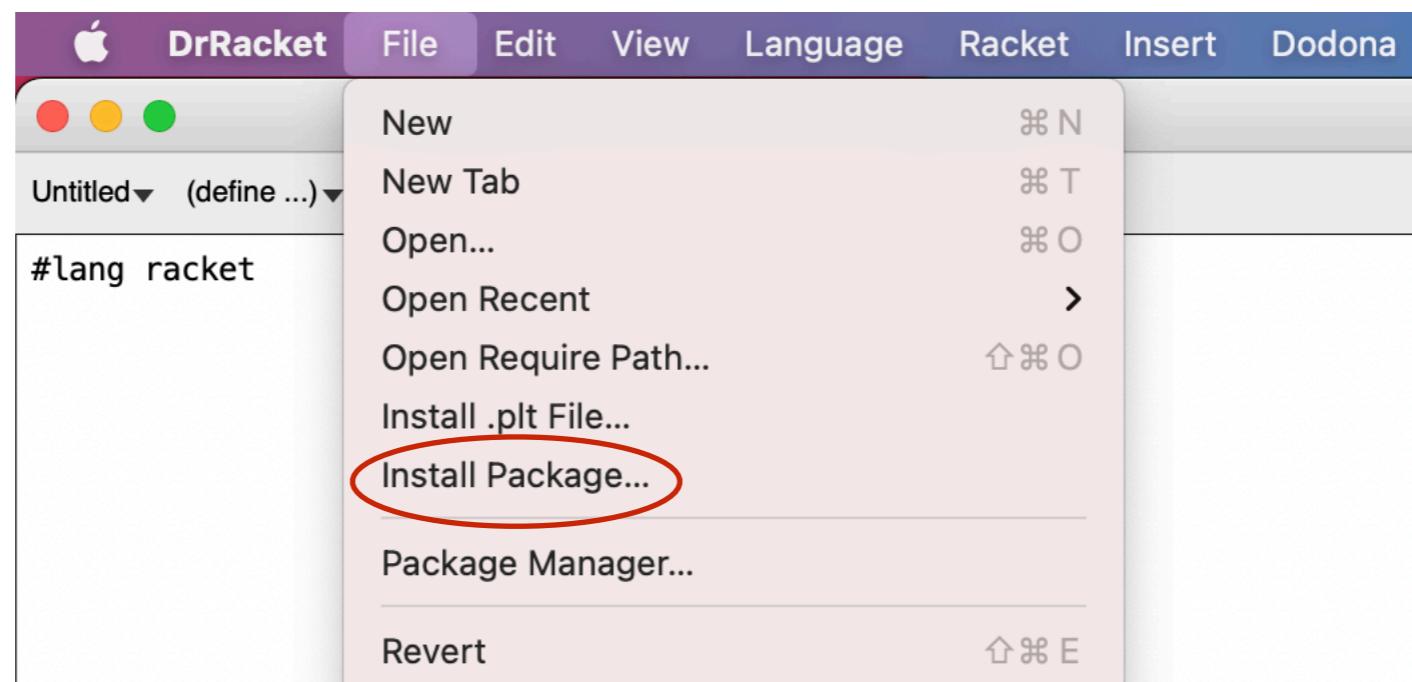
Alle testen zijn correct uitgevoerd!

Test **Code**

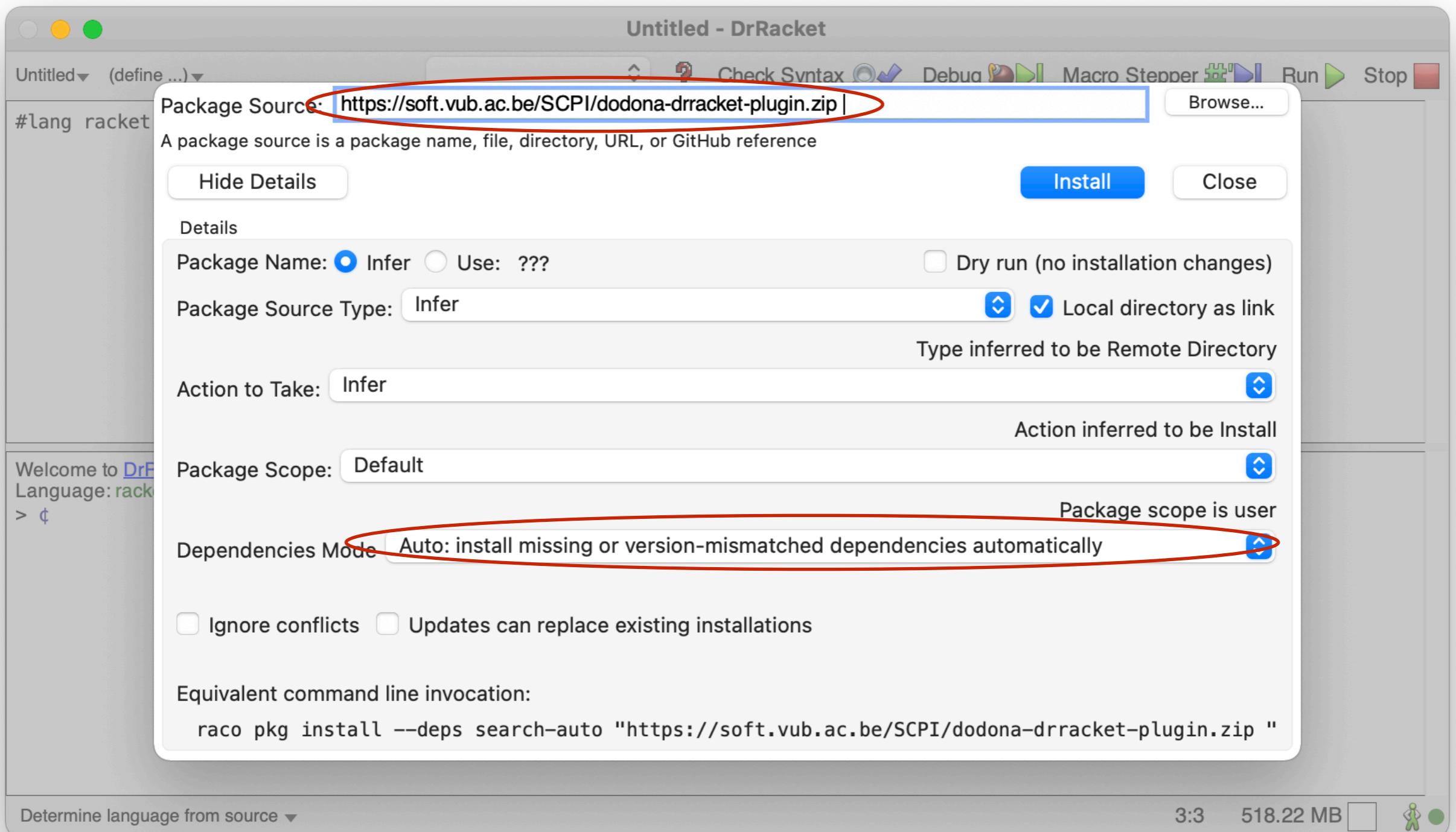
tests	expected-result	correct?	
rec-multiply			
(rec-multiply 10 0)	0	✓	Copy to REPL
(rec-multiply 0 10)	0	✓	Copy to REPL
(rec-multiply 3 2)	6	✓	Copy to REPL
is rec-multiply recursief?			
'rec-multiply' is recursive	#t	✓	Copy to REPL
iter-multiply			
(iter-multiply 10 0)	0	✓	Copy to REPL
(iter-multiply 0 10)	0	✓	Copy to REPL
(iter-multiply 3 2)	6	✓	Copy to REPL
is iter-multiply iteratief?			

Open in Dodona **Ok**

Dodona Plugin



Dodona Plugin



Dodona Plugin

