

Verslag opdracht 2

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De aanpak

We zijn begonnen met het kijken welke actors we allemaal hadden. Uiteindelijk hebben we er 3 gevonden, deze zijn: end users, developers en een productowner. Deze actors zijn allemaal een aparte thread. Daarna zijn we de verschillende activiteiten gaan onderscheiden. Deze hebben we vertaald in semaphores. Elke thread heeft in principe een oneindige levenscyclus aangezien ze allemaal een `while(true)` loop hebben.

Communicatie

De threads communiceren met semaphores en twee counters. De twee counters zijn hoeveel ontwikkelaars er aan het wachten zijn en hoeveel eindgebruikers een probleem hebben. Het veranderen van deze counters zijn ook weer beschermd met semaphores, zodat niet twee threads tegelijk een counter kunnen aanpassen.

Test

We hebben onze oplossing getest door elke keer als er een actie gebeurd (overleggen, werken, reizen) dit in de console uit te printen. Hieraan kan je zien dat elke actor(thread) elke keer wel weer aan de beurt komt. Zo kan je ook zien dat een thread niet ergens op vastloopt (een deadlock krijgt) aangezien hij dus elke keer terugkomt in de console.

In bijlage A kan je de output van ons programma vinden als het programma normaal functioneert. Oftewel als er een product owner is, er programmeurs zijn en er eindgebruikers zijn.

Een test zonder users resulteert in dat er alleen overleg tussen drie programmeurs en de product owner komt. Dit is te zien in de output van ons programma in bijlage B.

We hebben getest zonder een productowner dus er zijn alleen programmeurs aan het werk. Hierdoor komen er geen meetings en staan de users te wachten totdat iemand het probleem van de user aanspreekt. De output is te vinden in bijlage C.

We hebben ook getest dat we te weinig developers hebben voor een developer meeting, in bijlage D kan je de output vinden van deze test.

Bijlage A

<p> programmer 1 working programmer 2 working programmer 4 working programmer 3 working productowner just living programmer 0 working programmer 1 done working user 0 traveling user 4 traveling user 2 traveling user 1 traveling user 6 traveling user 7 traveling user 5 traveling user 3 traveling programmer 3 done working programmer 3 working user 6 done traveling user 6 consulting programmer 2 done working programmer 2 working user 2 done traveling user 2 consulting programmer 4 done working programmer 4 working programmer 3 done working programmer 3 working programmer 0 done working programmer 0 working user 5 done traveling user 5 consulting user 6 done consulting user 7 done traveling user 7 consulting user 1 done traveling user 1 consulting user 2 done consulting programmer 2 done working programmer 2 working user 5 done consulting user 4 done traveling user 4 consulting user 7 done consulting programmer 2 done working programmer 2 working user 0 done traveling user 0 consulting user 3 done traveling user 3 consulting programmer 1 consulting productowner consulting programmer 2 done working programmer 2 working programmer 4 done working programmer 4 working user 4 done consulting programmer 4 done working programmer 4 working programmer 2 done working </p>	<p> programmer 2 working programmer 3 done working programmer 3 working programmer 0 done working programmer 0 working productowner done consulting productowner just living user 1 done consulting programmer 1 done consulting programmer 1 working programmer 4 done working user 3 done consulting programmer 1 done working user 0 done consulting programmer 3 done working programmer 0 done working user 6 traveling user 4 traveling user 3 traveling user 0 traveling user 7 traveling user 5 traveling user 2 traveling user 1 traveling programmer 2 done working programmer 2 working user 5 done traveling user 5 consulting user 2 done traveling user 2 consulting user 0 done traveling user 0 consulting user 7 done traveling user 7 consulting programmer 2 done working programmer 2 working user 5 done consulting user 1 done traveling user 1 consulting user 3 done traveling user 3 consulting user 4 done traveling user 4 consulting user 2 done consulting programmer 2 done working programmer 2 working user 7 done consulting user 6 done traveling user 6 consulting programmer 0 working productowner consulting programmer 3 working programmer 1 working programmer 4 consulting programmer 1 done working programmer 1 working user 1 done consulting user 0 done consulting programmer 0 done working </p>
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Bijlage B

productowner	just living	programmer 3	done consulting
programmer 0	working	programmer 3	working
programmer 2	working	productowner	just living
programmer 3	working	productowner	just living
programmer 1	working	programmer 0	done working
programmer 4	working	programmer 2	done working
programmer 1	done working	programmer 3	done working
productowner	just living	programmer 1	consulting
productowner	just living	programmer 0	consulting
productowner	just living	programmer 3	working
programmer 3	done working	programmer 2	working
programmer 4	done working	productowner	consulting
productowner	just living	programmer 4	consulting
programmer 0	done working	programmer 4	done consulting
programmer 2	done working	productowner	done consulting
programmer 1	consulting	productowner	just living
productowner	consulting	programmer 4	working
programmer 4	consulting	programmer 1	done consulting
programmer 3	consulting	programmer 1	working
programmer 2	working	productowner	just living
programmer 0	working	programmer 1	done working
programmer 1	done consulting	programmer 0	done consulting
programmer 2	done working	programmer 0	working
programmer 2	working	programmer 0	done working
programmer 0	done working	programmer 2	done working
programmer 0	working	programmer 3	done working
programmer 3	done consulting	programmer 1	consulting
programmer 4	done consulting	programmer 0	consulting
programmer 0	done working	productowner	consulting
programmer 0	working	programmer 3	working
productowner	done consulting	programmer 2	consulting
programmer 1	working	programmer 4	done working
programmer 3	working	programmer 4	working
programmer 4	working	programmer 0	done consulting
productowner	just living	programmer 3	done working
productowner	just living	programmer 3	working
programmer 1	done working	programmer 3	done working
programmer 3	done working	programmer 3	working
programmer 2	done working	programmer 1	done consulting
programmer 0	done working	programmer 2	done consulting
programmer 4	done working	productowner	done consulting
programmer 1	consulting	productowner	just living
programmer 3	consulting	programmer 0	working
programmer 2	consulting	programmer 2	working
programmer 0	working	programmer 1	working
productowner	consulting	programmer 4	done working
programmer 4	working	programmer 3	done working
programmer 1	done consulting	programmer 2	done working
programmer 4	done working	programmer 0	done working
programmer 4	working	programmer 1	done working
programmer 0	done working	programmer 4	consulting
programmer 0	working	programmer 1	working
programmer 2	done consulting	programmer 0	working
productowner	done consulting	productowner	consulting
productowner	just living	programmer 2	consulting
programmer 1	working	programmer 3	consulting
programmer 2	working	programmer 2	done consulting
programmer 1	done working	programmer 0	done working
programmer 4	done working	programmer 0	working

Bijlage C

programmer 1 working	programmer 1 done working
programmer 0 working	programmer 1 working
programmer 2 working	programmer 0 done working
programmer 3 working	programmer 0 working
programmer 4 working	programmer 1 done working
programmer 1 done working	programmer 1 working
programmer 1 working	programmer 4 done working
programmer 4 done working	programmer 4 working
programmer 4 working	programmer 2 done working
programmer 3 done working	programmer 2 working
programmer 3 working	programmer 3 done working
programmer 3 done working	programmer 3 working
programmer 3 working	programmer 3 done working
programmer 1 done working	programmer 3 working
programmer 1 working	programmer 1 done working
programmer 0 done working	programmer 1 working
programmer 0 working	programmer 0 done working
programmer 3 done working	programmer 0 working
programmer 3 working	programmer 1 done working
programmer 2 done working	programmer 1 working
programmer 2 working	programmer 4 done working
programmer 1 done working	programmer 4 working
programmer 1 working	programmer 3 done working
programmer 4 done working	programmer 3 working
programmer 4 working	programmer 0 done working
programmer 4 done working	programmer 0 working
programmer 4 working	programmer 2 done working
programmer 0 done working	programmer 2 working
programmer 0 working	programmer 4 done working
programmer 1 done working	programmer 4 working
programmer 1 working	programmer 3 done working
programmer 3 done working	programmer 3 working
programmer 3 working	programmer 3 done working
programmer 2 done working	programmer 3 working
programmer 2 working	programmer 2 done working
programmer 0 done working	programmer 2 working
programmer 0 working	programmer 0 done working
programmer 4 done working	programmer 0 working
programmer 4 working	programmer 1 done working
programmer 2 done working	programmer 1 working
programmer 2 working	programmer 3 done working
programmer 3 done working	programmer 3 working
programmer 3 working	programmer 4 done working
programmer 2 done working	programmer 4 working
programmer 2 working	

Bijlage D

productowner just living	productowner done consulting
programmer 1 working	productowner just living
programmer 2 working	programmer 4 done working
programmer 3 working	programmer 0 done working
programmer 4 working	user 0 traveling
programmer 0 working	user 0 done traveling
programmer 4 done working	user 0 consulting
programmer 1 done working	programmer 4 consulting
programmer 2 done working	productowner consulting
user 1 traveling	programmer 0 working
user 0 traveling	programmer 3 done working
programmer 3 done working	programmer 3 working
programmer 3 working	programmer 2 done working
programmer 0 done working	programmer 2 working
programmer 0 working	user 1 done consulting
programmer 0 done working	programmer 4 done consulting
programmer 0 working	programmer 4 working
user 1 done traveling	user 0 done consulting
user 1 consulting	programmer 1 done consulting
user 0 done traveling	programmer 2 done working
programmer 4 consulting	programmer 2 working
programmer 1 working	programmer 0 done working
programmer 2 working	programmer 0 working
productowner consulting	programmer 4 done working
user 0 consulting	programmer 4 working
user 1 done consulting	programmer 4 done working
programmer 3 done working	programmer 4 working
programmer 3 working	programmer 2 done working
user 0 done consulting	programmer 2 working
programmer 0 done working	productowner done consulting
programmer 0 working	productowner just living
programmer 3 done working	programmer 1 working
programmer 3 working	programmer 3 done working
programmer 0 done working	programmer 4 done working
programmer 0 working	programmer 1 done working
programmer 2 done working	programmer 0 done working
programmer 2 working	user 1 traveling
productowner done consulting	user 0 traveling
productowner just living	programmer 2 done working
productowner just living	programmer 2 working
programmer 4 done consulting	user 1 done traveling
programmer 4 working	user 1 consulting
programmer 1 done working	user 1 done consulting
programmer 3 done working	user 0 done traveling
user 1 traveling	user 0 consulting
user 0 traveling	programmer 3 consulting
user 0 done traveling	programmer 4 working
user 0 consulting	programmer 0 working
programmer 2 done working	programmer 1 working
programmer 2 working	productowner consulting
programmer 0 done working	programmer 2 done working
programmer 0 working	programmer 2 working
programmer 0 done working	programmer 3 done consulting
programmer 0 working	programmer 4 done working
programmer 4 done working	programmer 4 working
programmer 4 working	programmer 2 done working
programmer 4 done working	programmer 2 working
programmer 4 working	programmer 0 done working
programmer 0 done working	programmer 0 working

programmer 0 working programmer 2 done working programmer 2 working programmer 0 done working programmer 0 working user 0 done consulting user 1 done traveling user 1 consulting programmer 1 consulting programmer 3 working productowner consulting programmer 4 done working programmer 4 working	programmer 4 done working programmer 4 working programmer 2 done working programmer 2 working productowner done consulting productowner just living programmer 3 working programmer 3 done working user 0 done consulting programmer 4 done working programmer 1 done working programmer 2 done working programmer 0 done working user 1 traveling user 0 traveling user 1 done traveling user 1 consulting
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