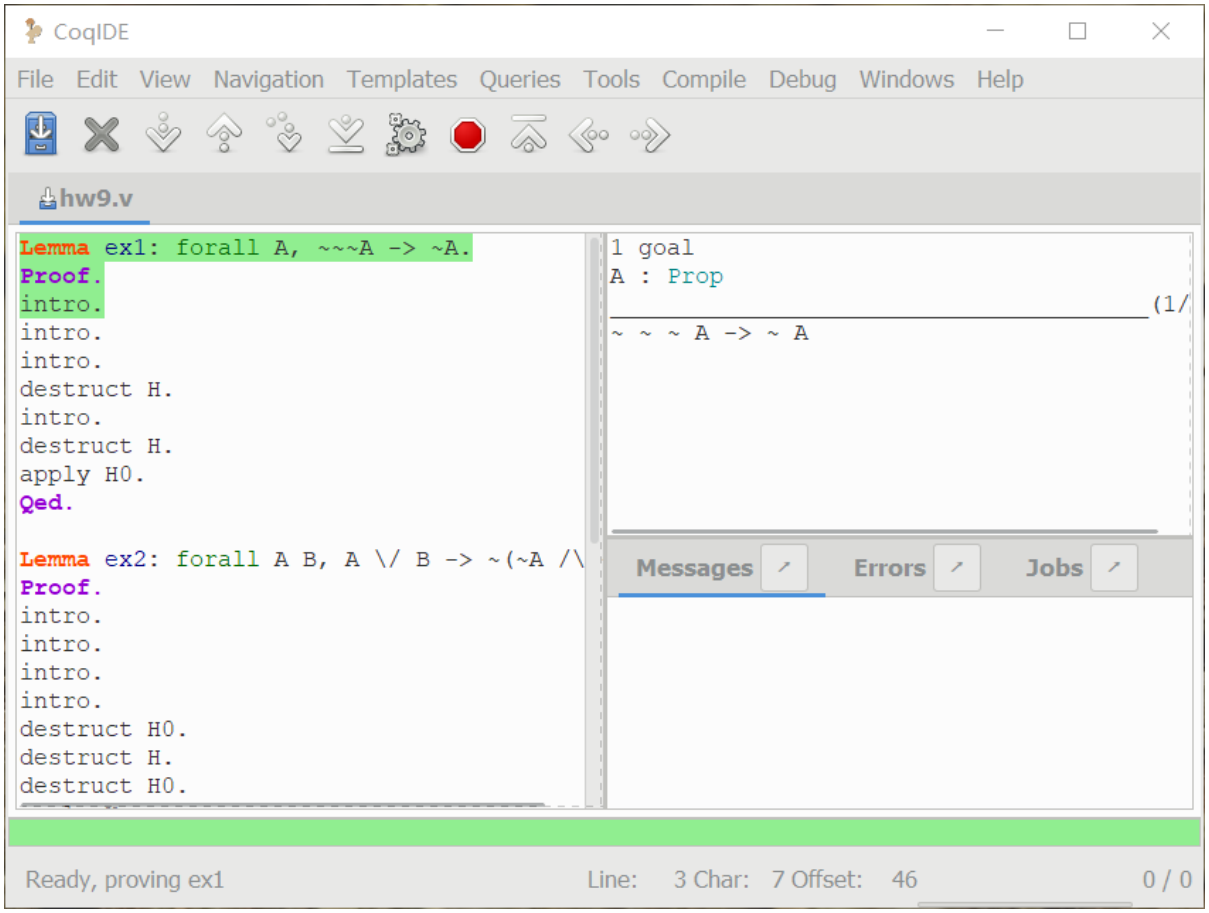
Q1


CoqIDE
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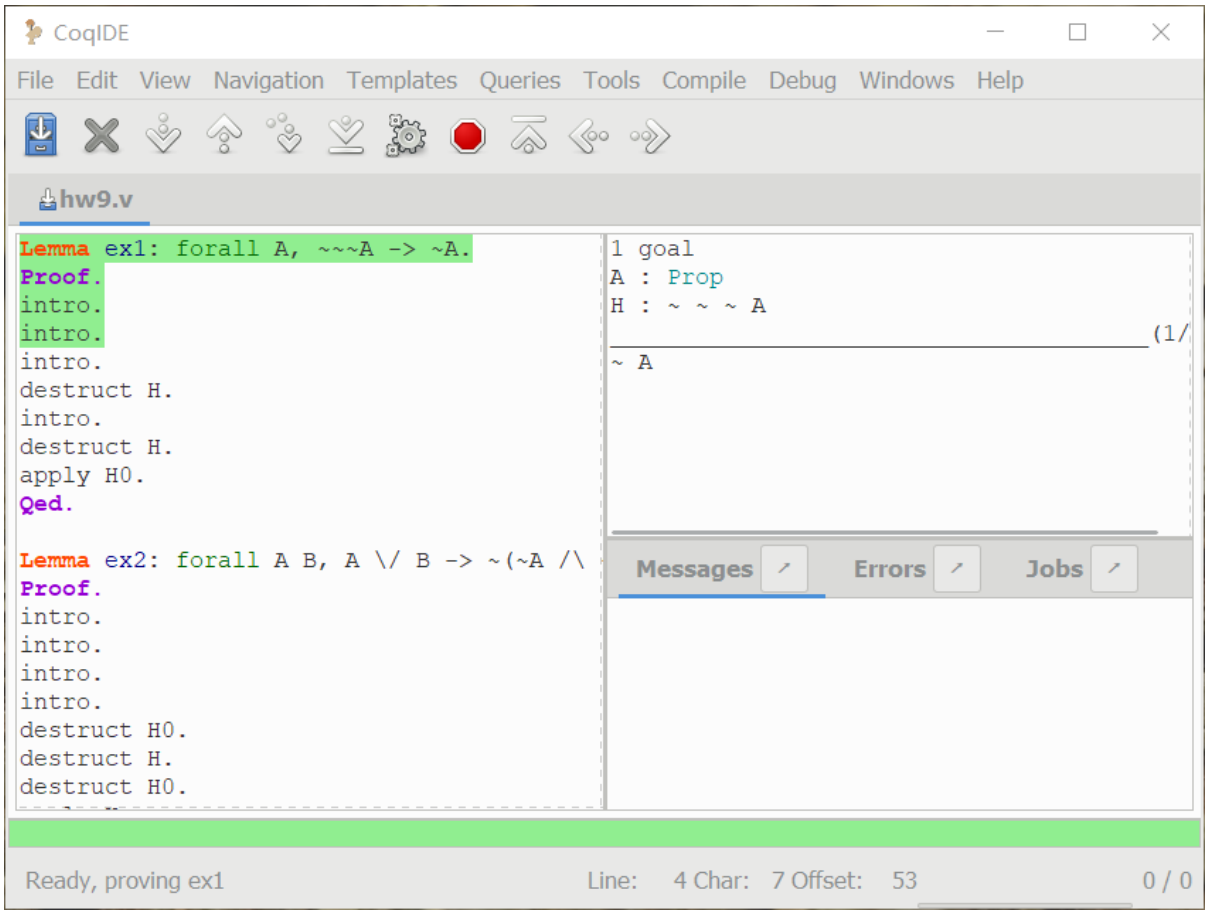
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
A : Prop
(1/
~ ~ ~ A -> ~ A
Messages
Errors
Jobs
Ready, proving ex1
Line: 3 Char: 7 Offset: 46
0 / 0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hw9.v
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Proof.
intro.
intro.
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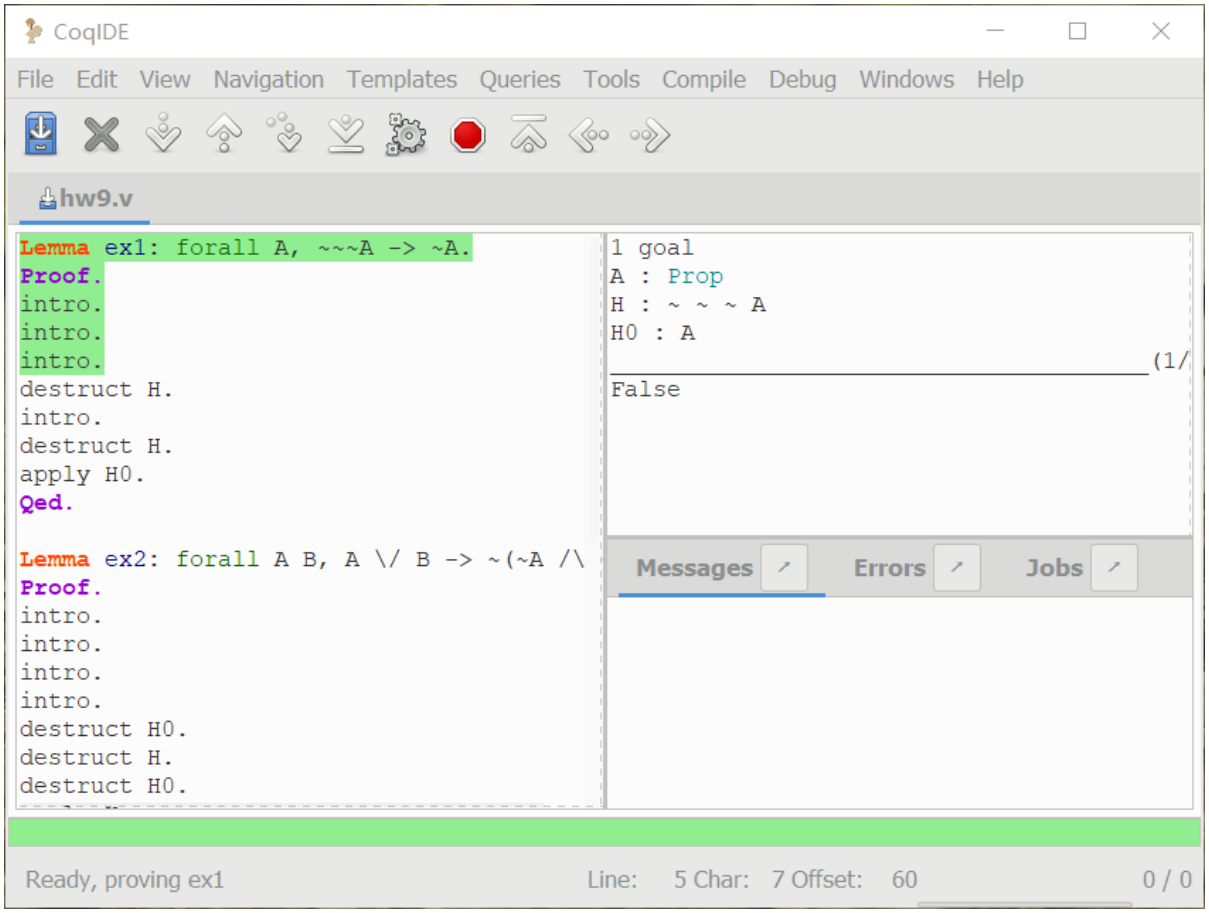
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
A : Prop
H : ~ ~ ~ A
(1/
~ A
Messages
Errors
Jobs
Ready, proving ex1
Line: 4 Char: 7 Offset: 53
0 / 0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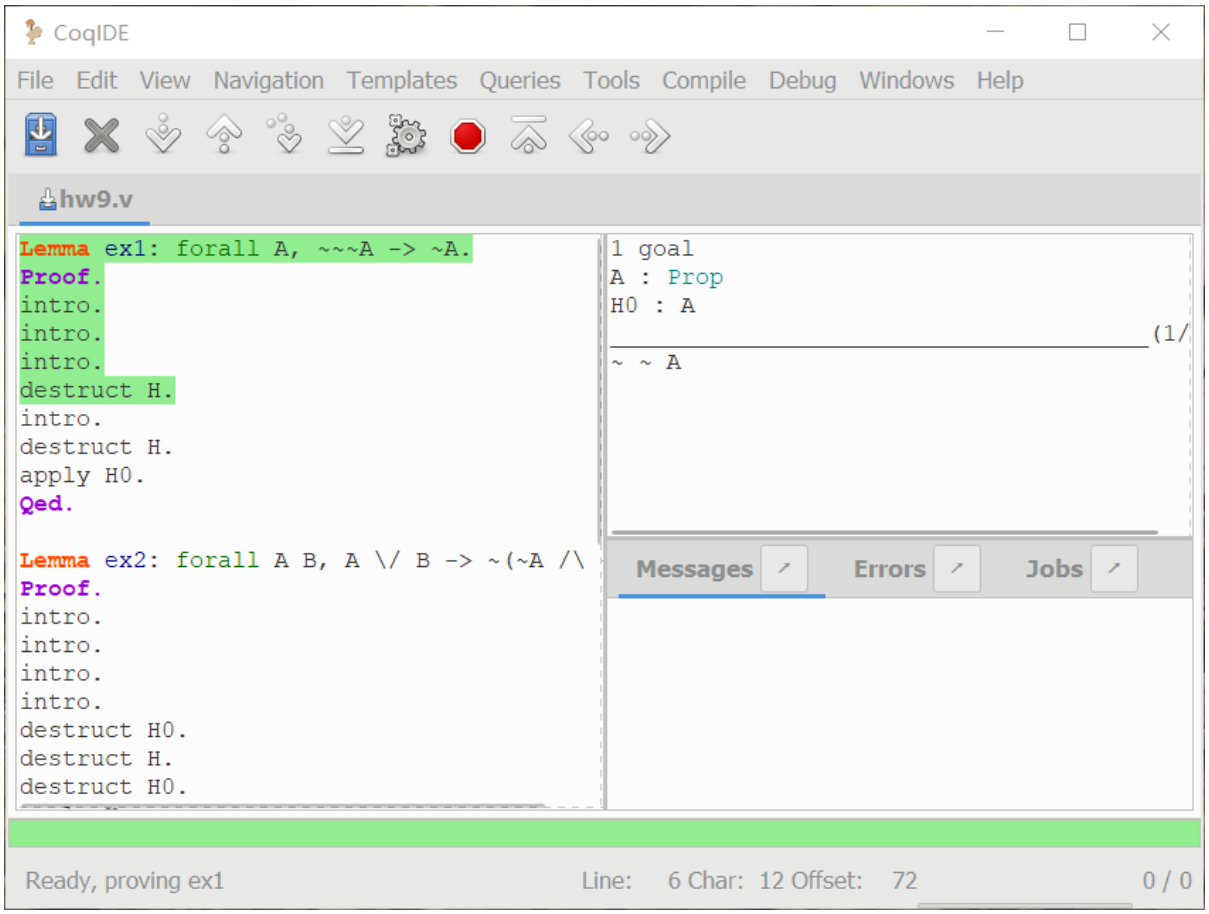
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
A : Prop
H : ~ ~ ~ A
H0 : A
(1/
False
Messages
Errors
Jobs
Ready, proving ex1
Line: 5 Char: 7 Offset: 60
0 / 0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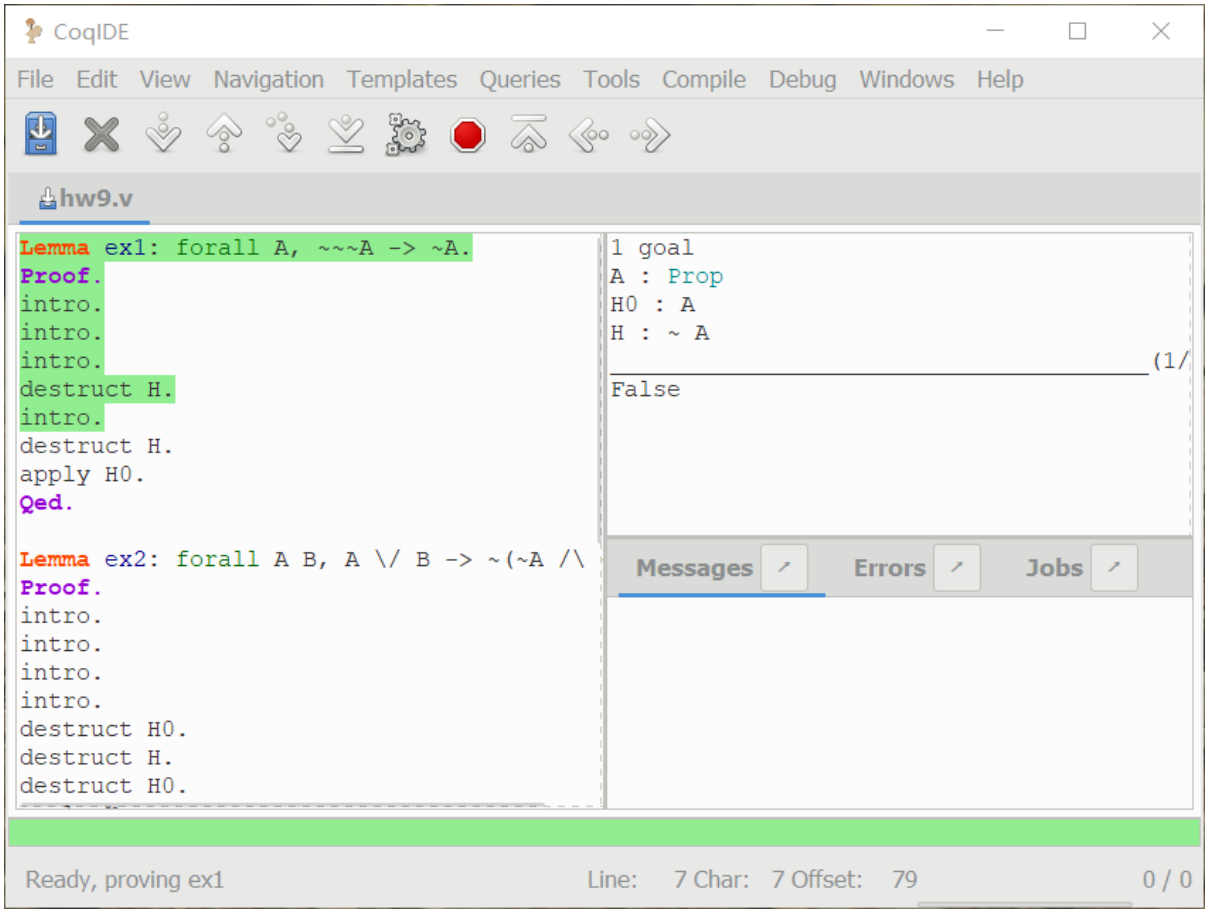
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
A : Prop
H0 : A
(1/
~ ~ A
Messages
Errors
Jobs
Ready, proving ex1
Line: 6 Char: 12 Offset: 72
0 / 0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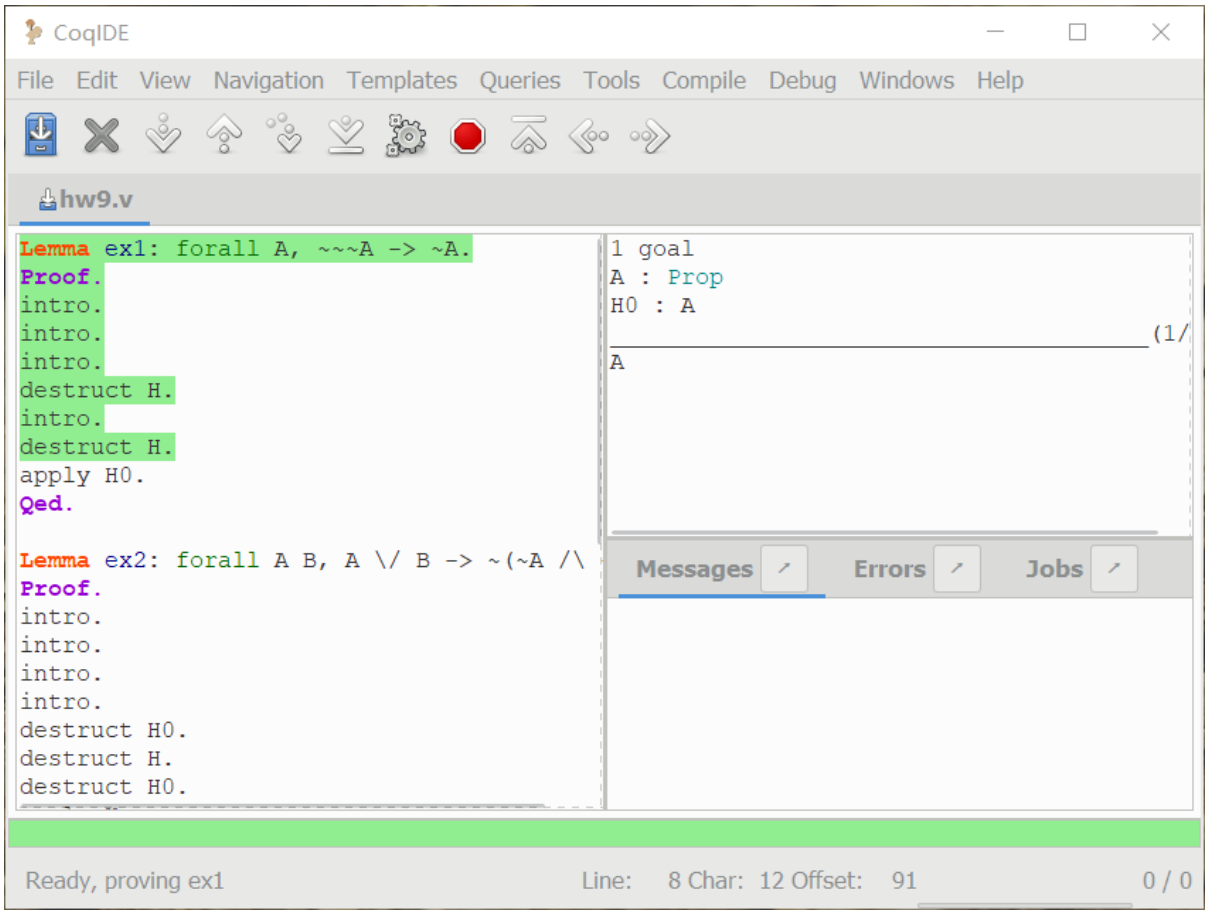
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
A : Prop
H0 : A
H : ~ A
(1/
False
Messages
Errors
Jobs
Ready, proving ex1
Line: 7 Char: 7 Offset: 79
0 / 0


CoqIDE
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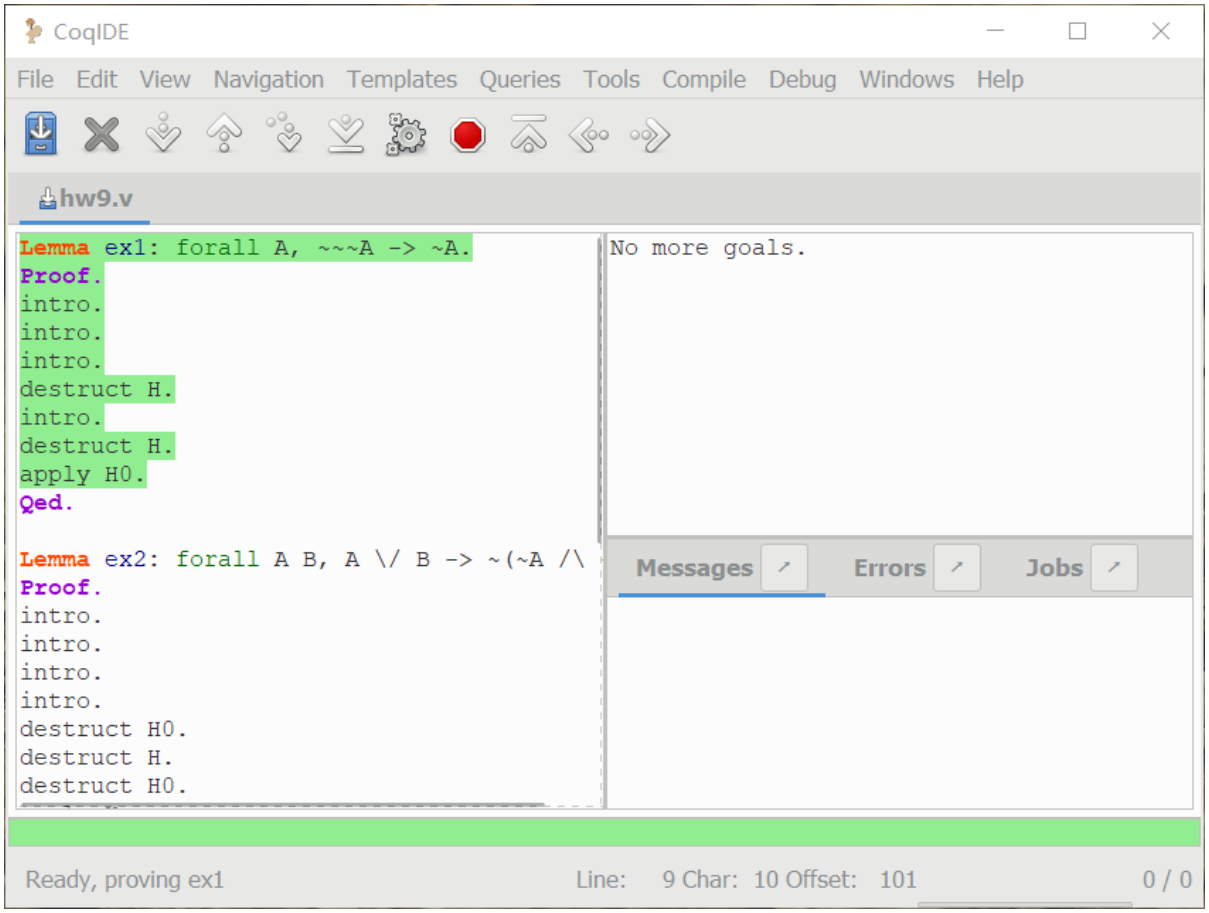
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
A : Prop
H0 : A
(1/
A
Messages
Errors
Jobs
Ready, proving ex1
Line: 8 Char: 12 Offset: 91
0 / 0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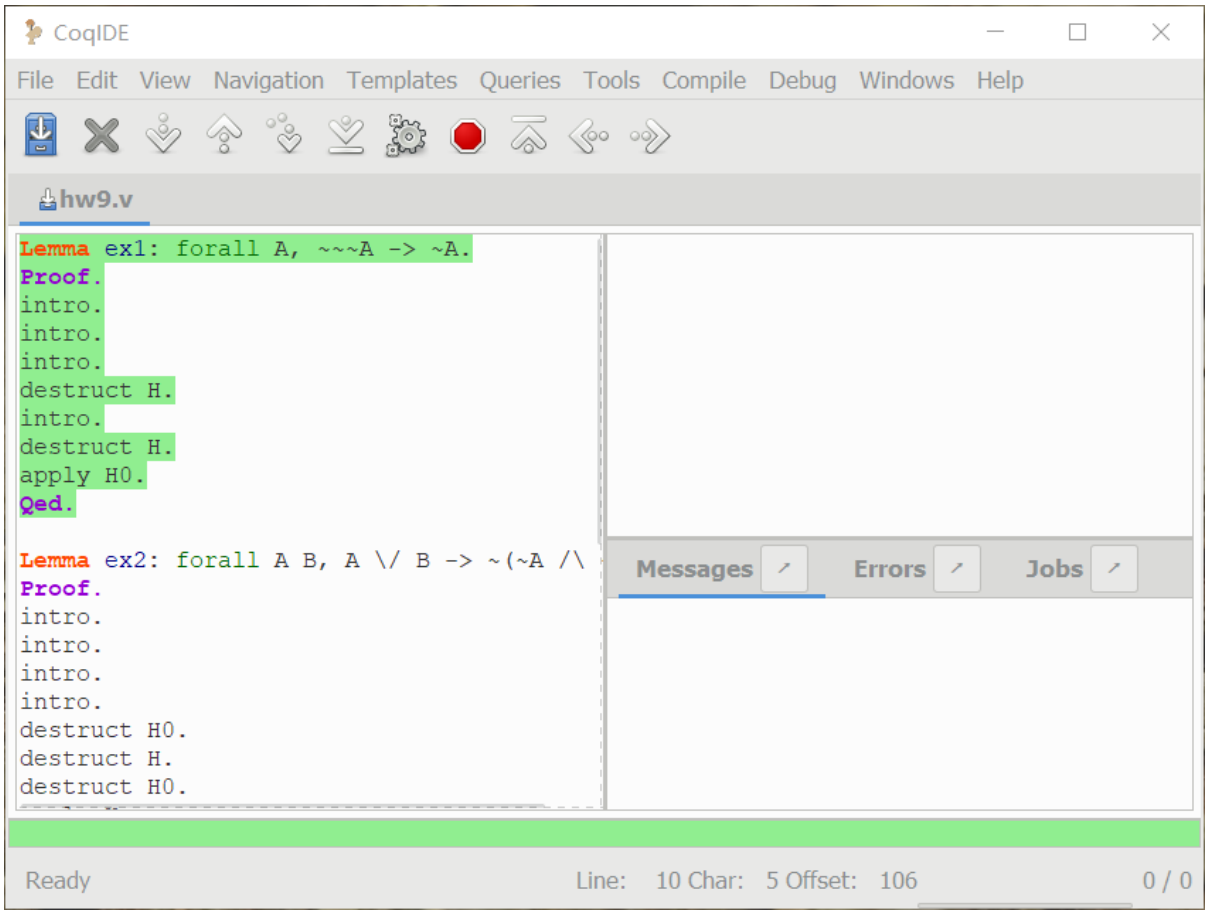
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
No more goals.
Messages
Errors
Jobs
Ready, proving ex1
Line: 9 Char: 10 Offset: 101
0 / 0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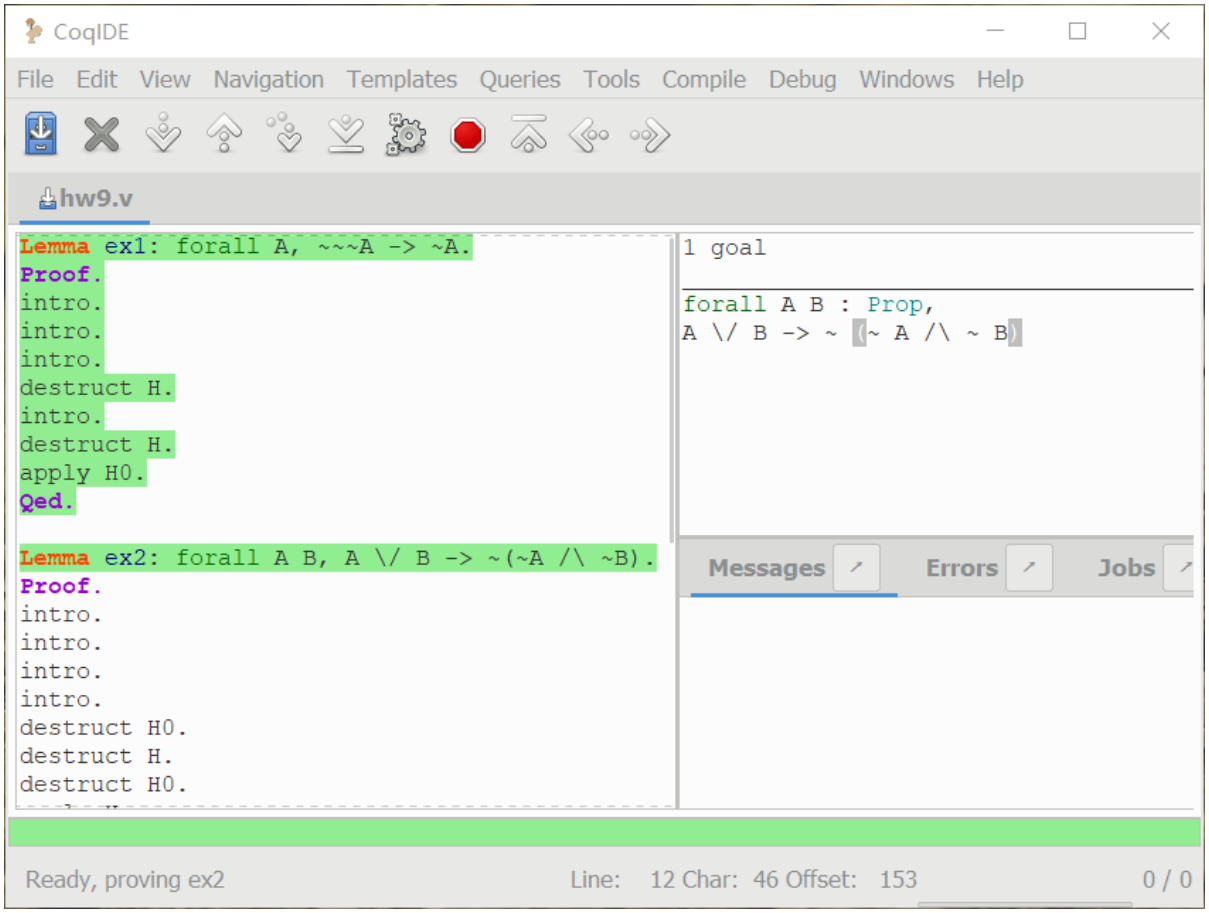
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
Messages
Errors
Jobs
Ready
Line: 10 Char: 5 Offset: 106
0 / 0

Q2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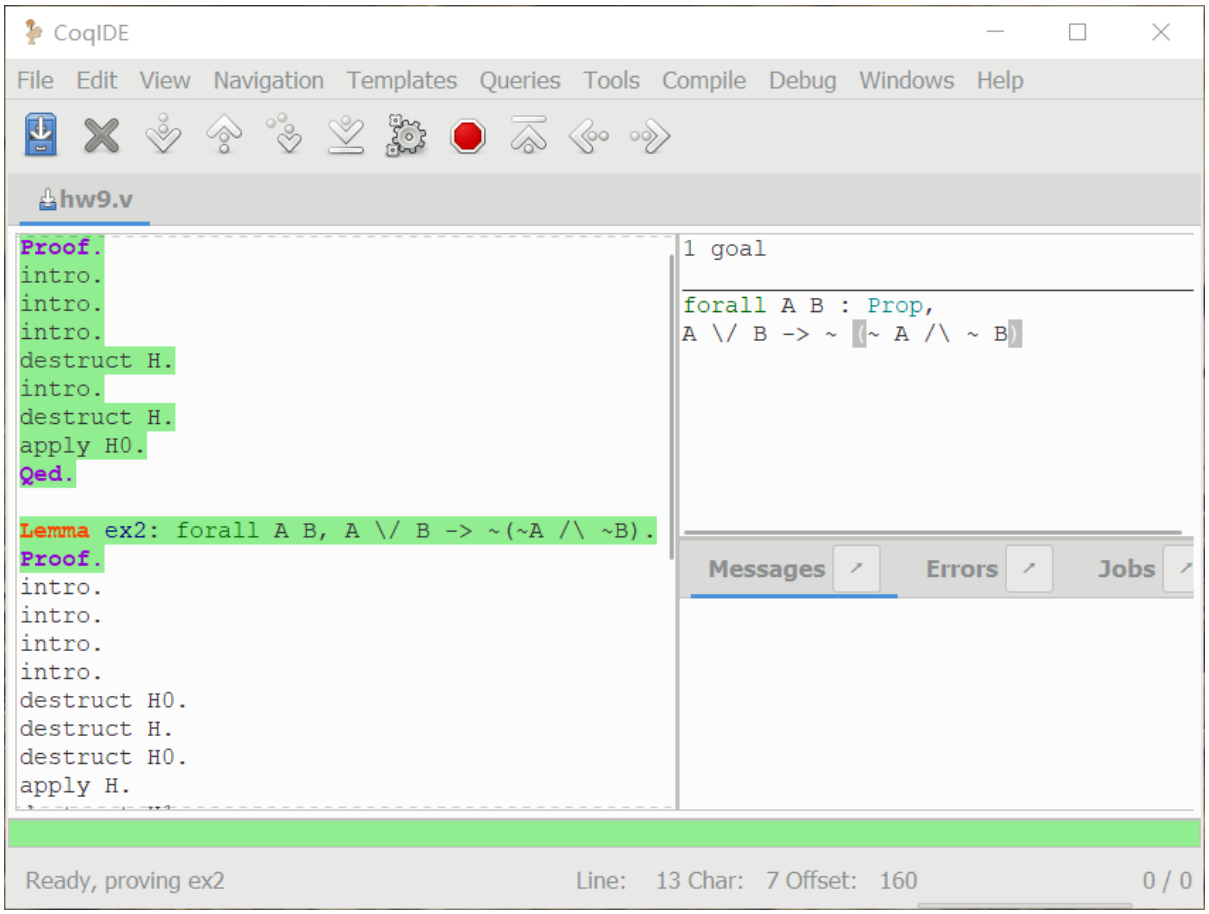
hw9.v
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
1 goal
forall A B : Prop,
A \/ B -> ~ (~ A /\ ~ B)
Messages
Errors
Jobs
Ready, proving ex2
Line: 12 Char: 46 Offset: 153
0 / 0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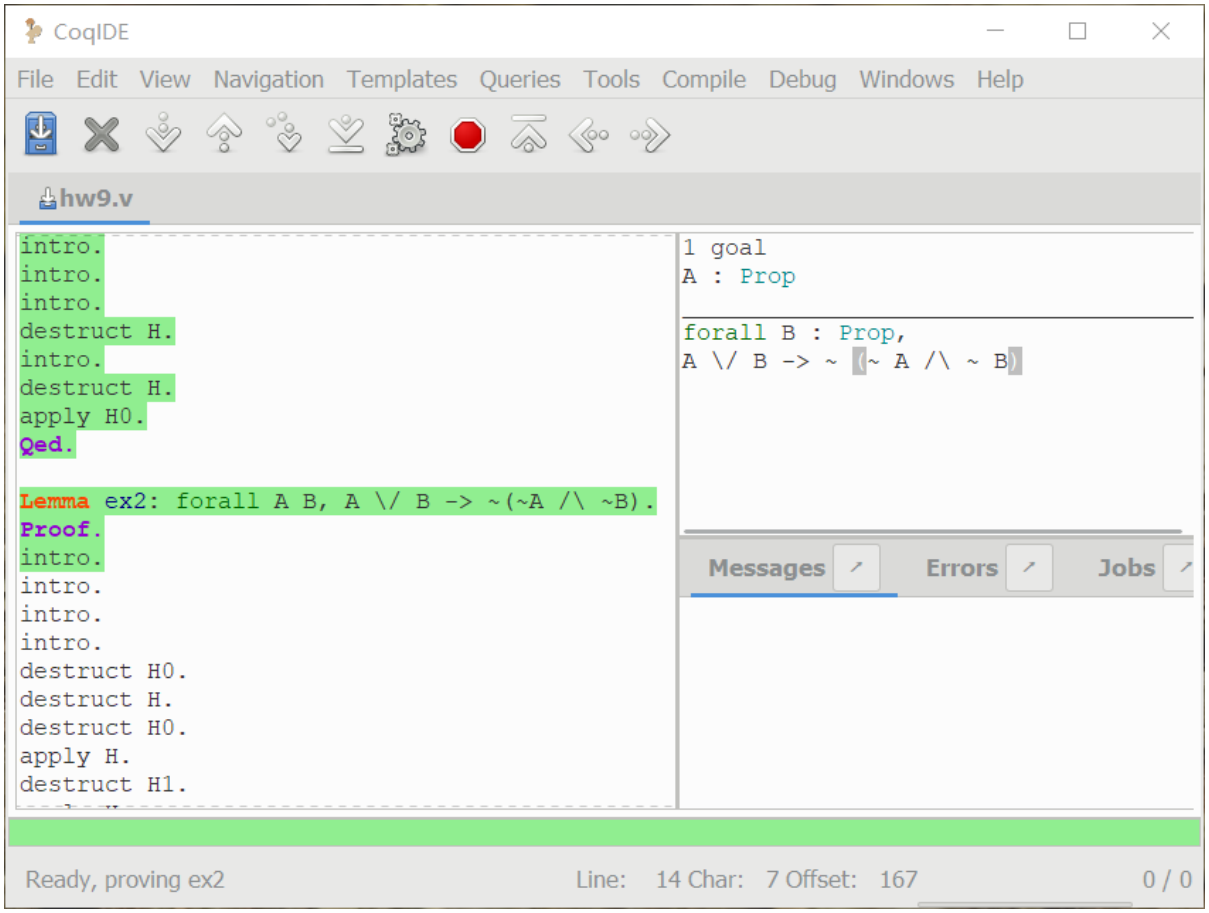
hw9.v
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
1 goal
forall A B : Prop,
A \/ B -> ~ (~ A /\ ~ B)
Messages
Errors
Jobs
Ready, proving ex2
Line: 13 Char: 7 Offset: 160
0 / 0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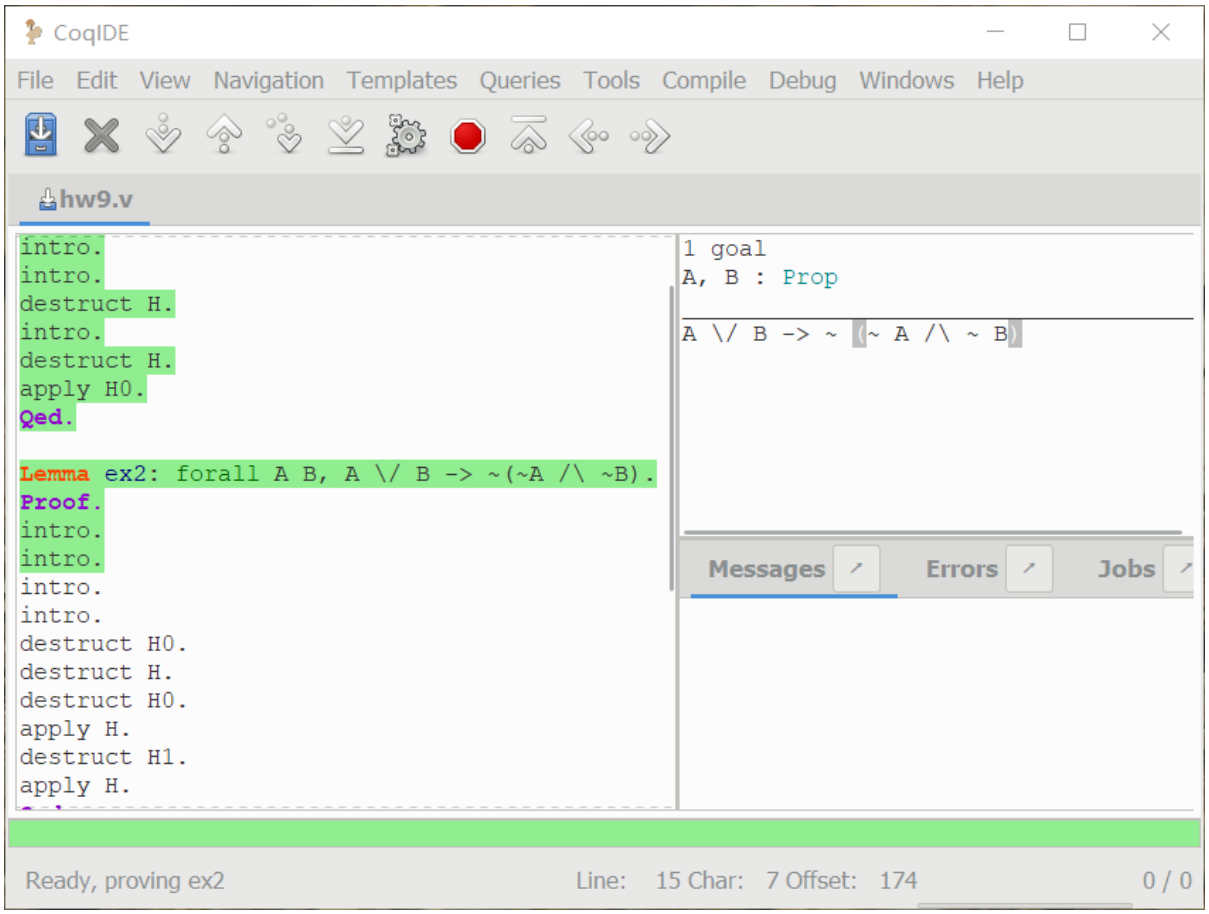
hw9.v
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
1 goal
A : Prop
forall B : Prop,
A \/ B -> ~ (~ A /\ ~ B)
Messages
Errors
Jobs
Ready, proving ex2
Line: 14 Char: 7 Offset: 167
0 / 0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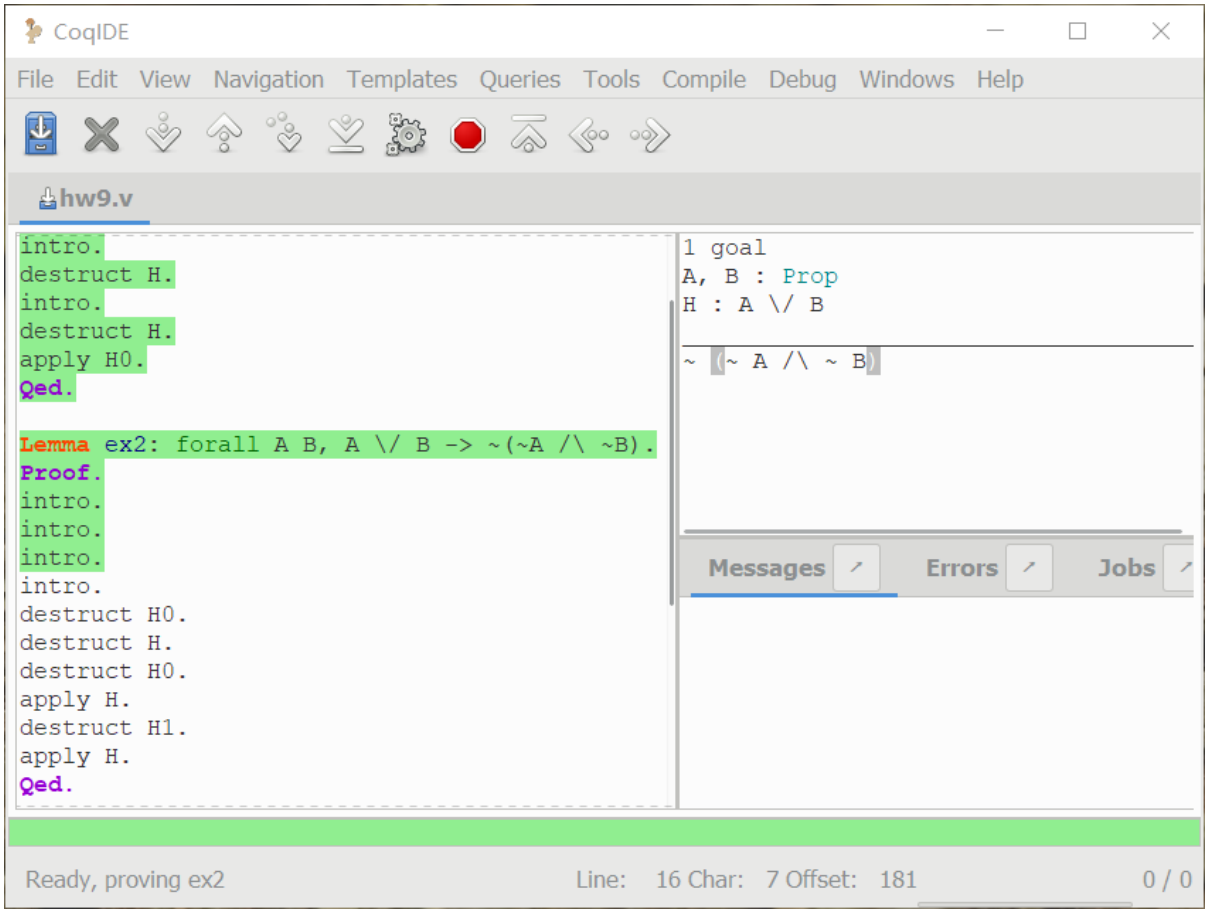
hw9.v
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
1 goal
A, B : Prop
A \/ B -> ~ (~ A /\ ~ B)
Messages
Errors
Jobs
Ready, proving ex2
Line: 15 Char: 7 Offset: 174
0 / 0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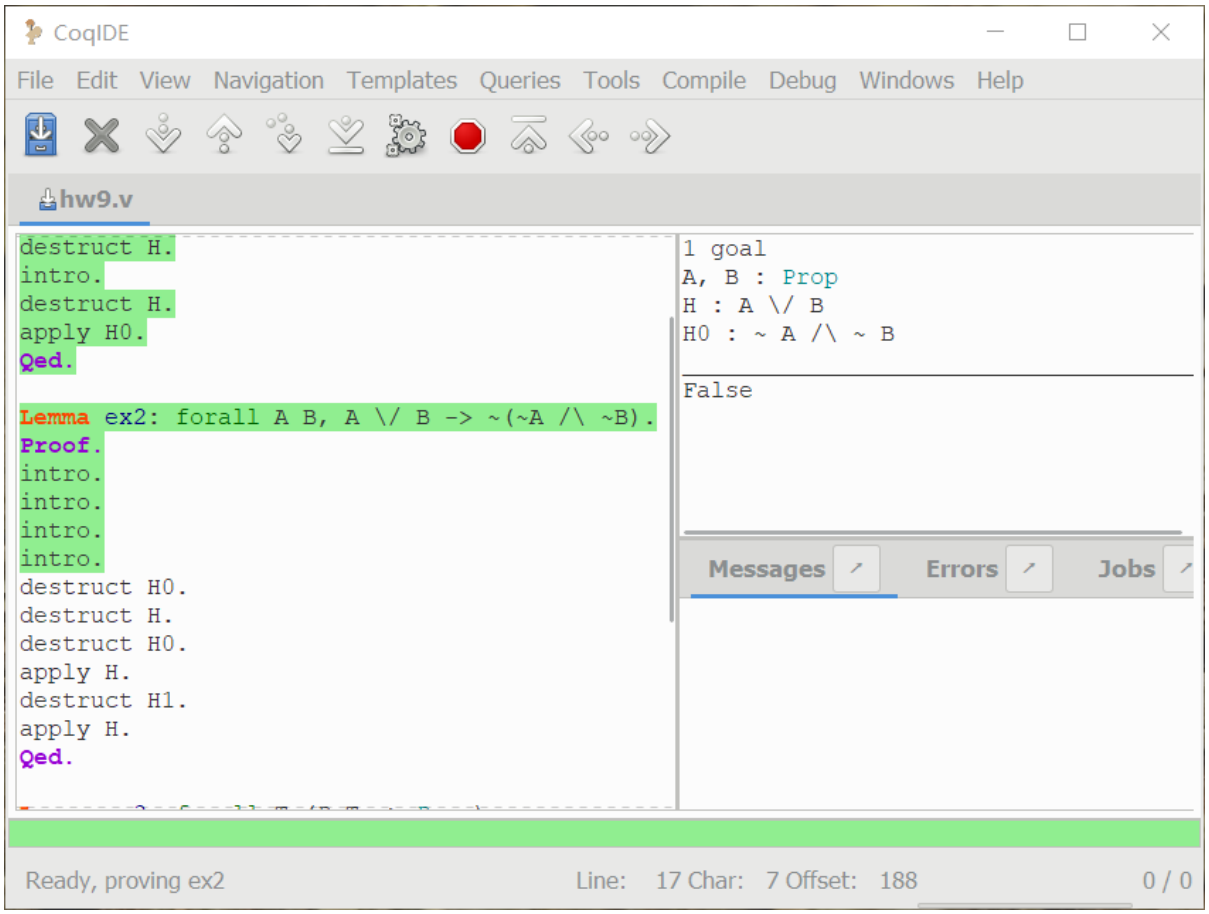
hw9.v
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
1 goal
A, B : Prop
H : A \/ B
~ (~ A /\ ~ B)
Messages
Errors
Jobs
Ready, proving ex2
Line: 16 Char: 7 Offset: 181
0 / 0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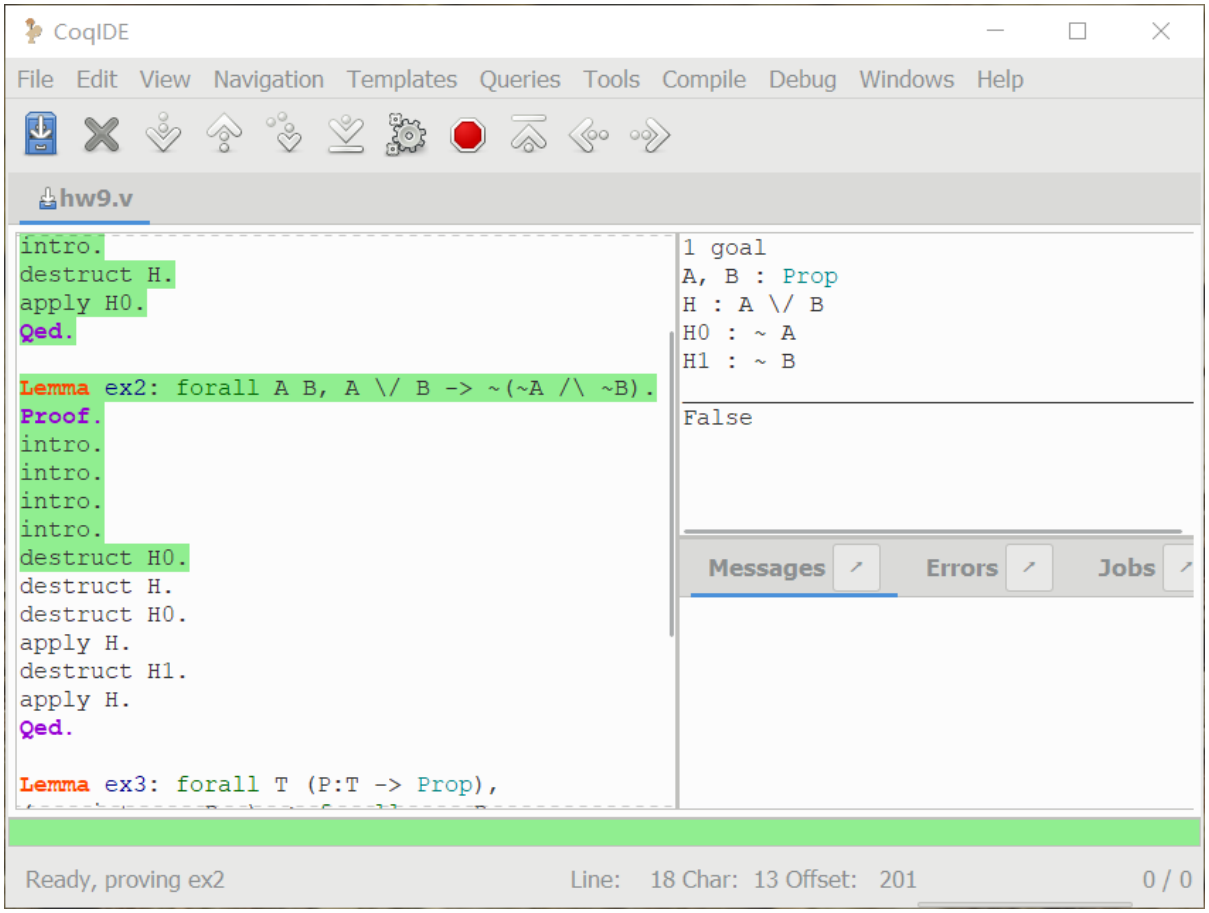
hw9.v
destruct H.
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
1 goal
A, B : Prop
H : A \/ B
H0 : ~ A /\ ~ B
False
Messages
Errors
Jobs
Ready, proving ex2
Line: 17 Char: 7 Offset: 188
0 / 0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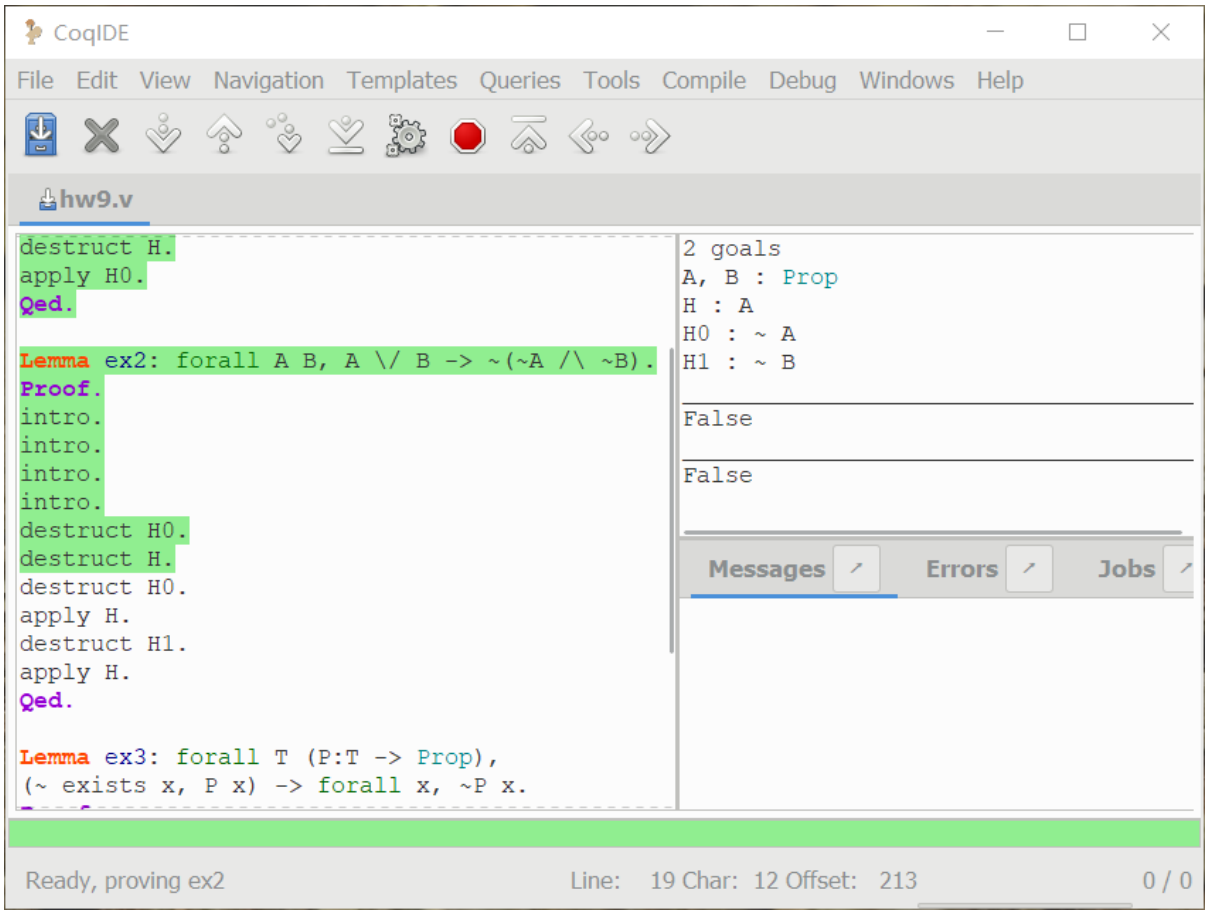
hw9.v
intro.
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
1 goal
A, B : Prop
H : A \/ B
H0 : ~ A
H1 : ~ B
False
Messages
Errors
Jobs
Ready, proving ex2
Line: 18 Char: 13 Offset: 201
0 / 0


CoqIDE
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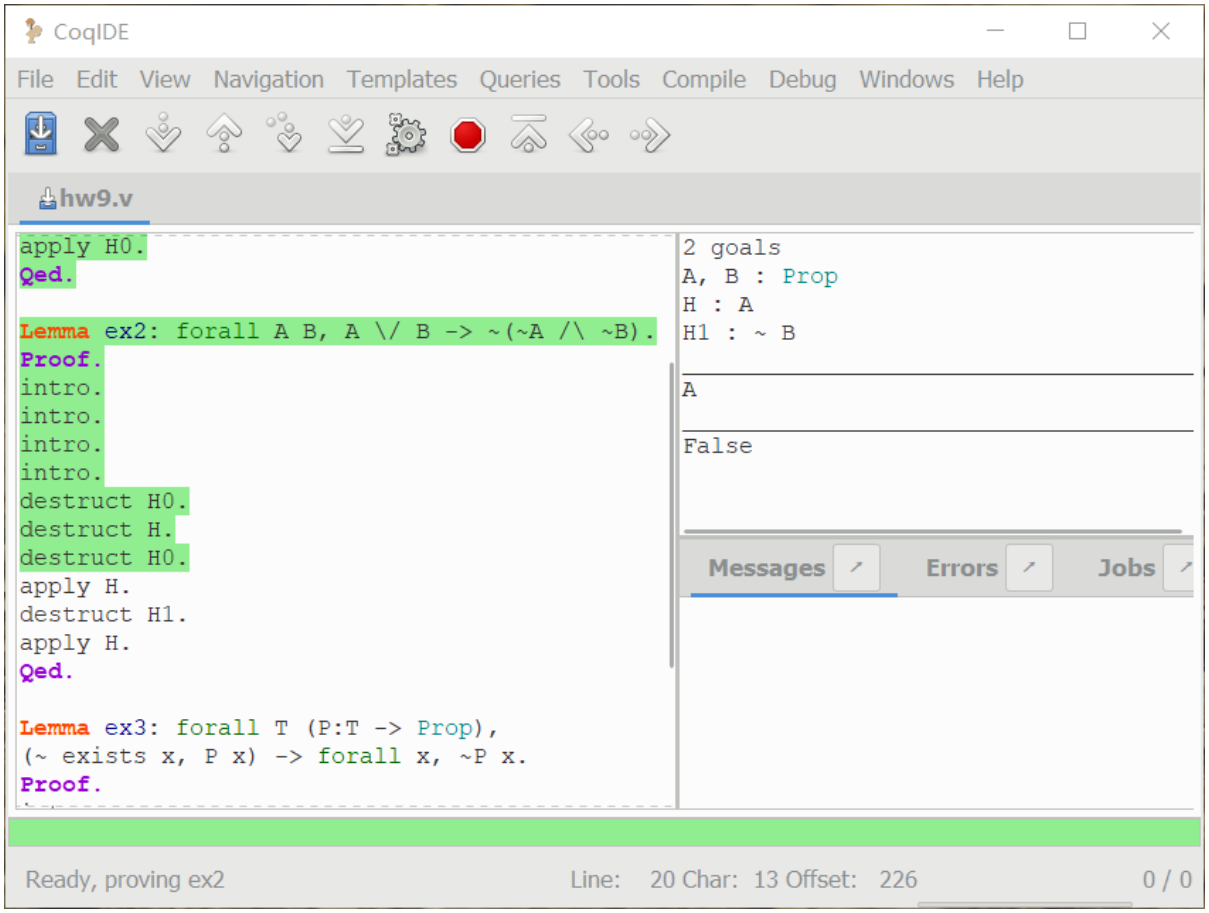
hw9.v
destruct H.
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
2 goals
A, B : Prop
H : A
H0 : ~ A
H1 : ~ B
False
False
Messages
Errors
Jobs
Ready, proving ex2
Line: 19 Char: 12 Offset: 213
0 / 0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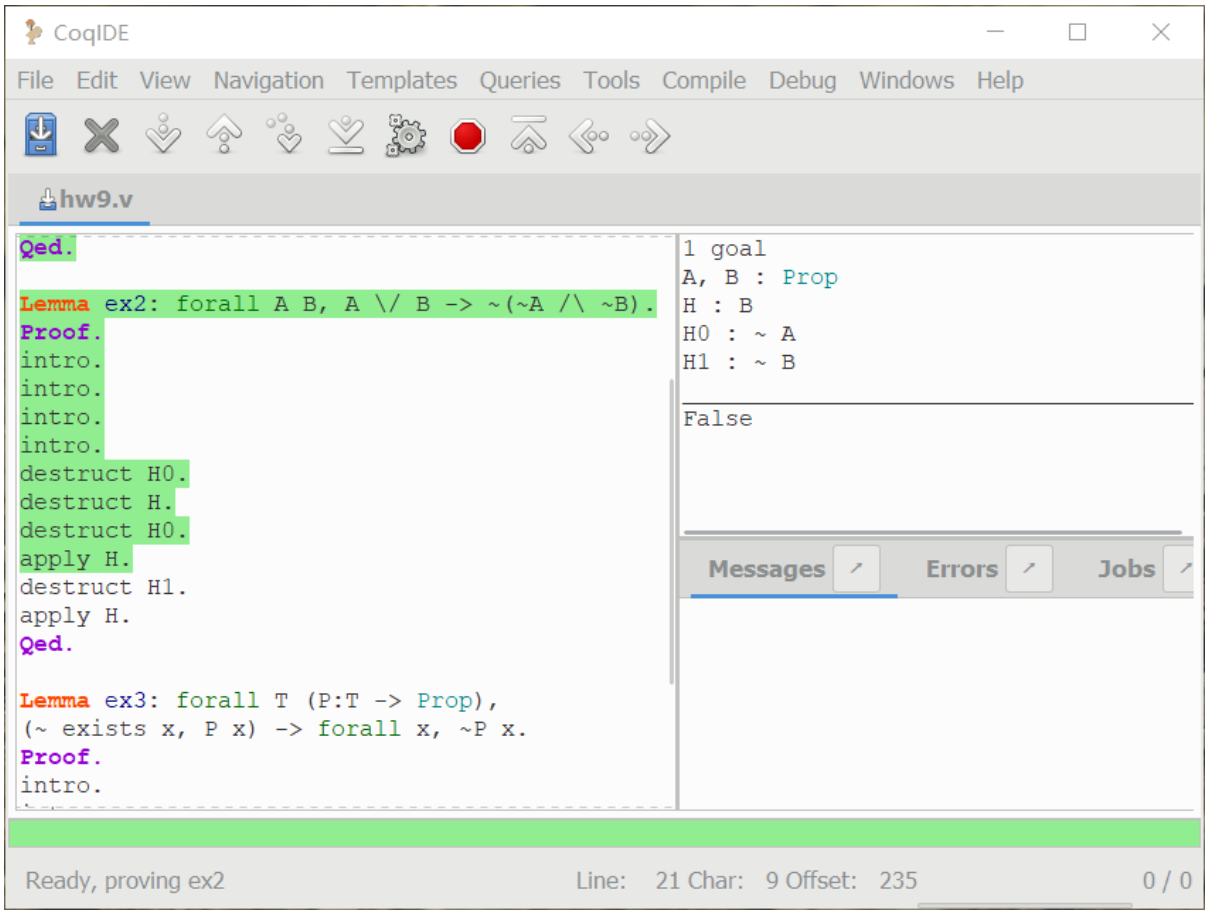
hw9.v
apply H0.
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
2 goals
A, B : Prop
H : A
H1 : ~ B
A
False
Messages
Errors
Jobs
Ready, proving ex2
Line: 20 Char: 13 Offset: 226
0 / 0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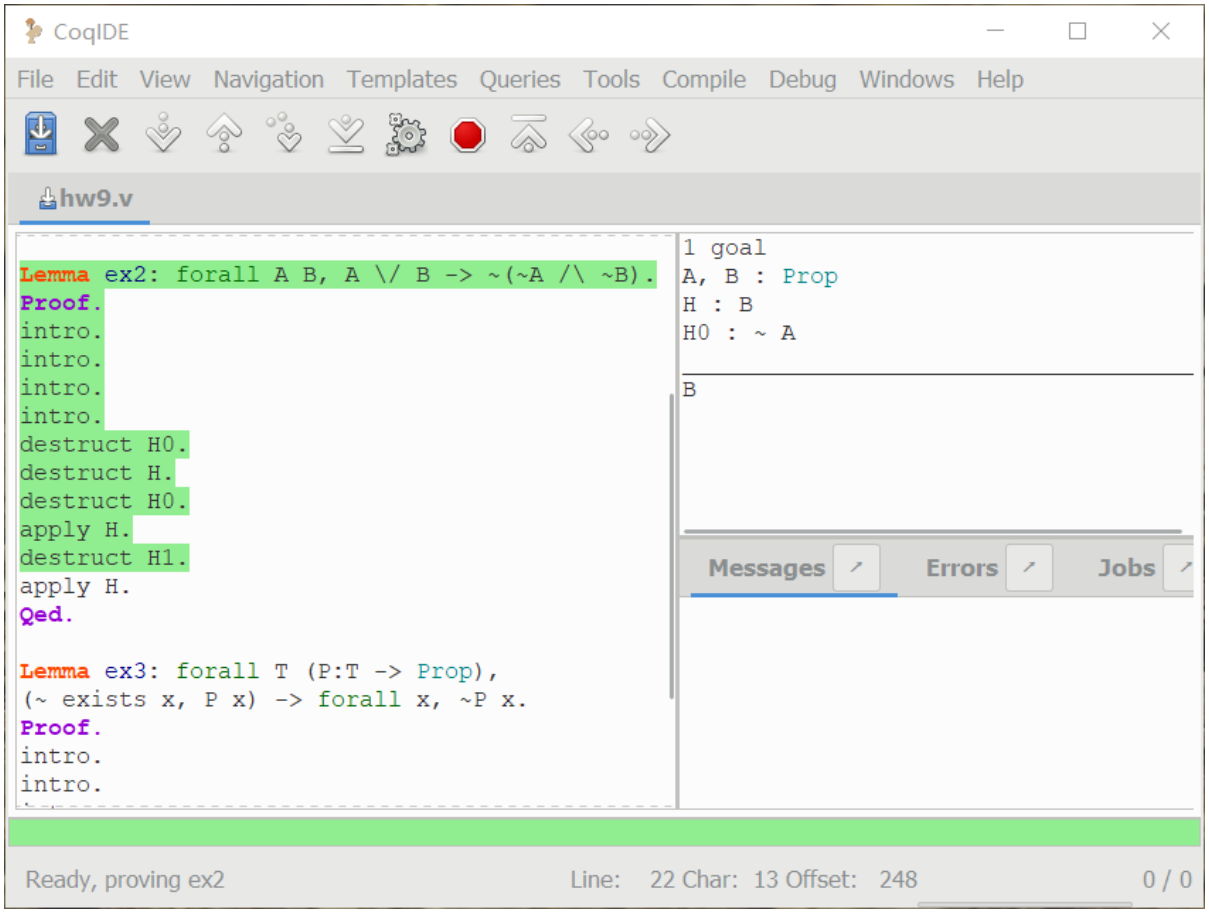
hw9.v
Qed.
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
1 goal
A, B : Prop
H : B
H0 : ~ A
H1 : ~ B
False
Messages
Errors
Jobs
Ready, proving ex2
Line: 21 Char: 9 Offset: 235
0 / 0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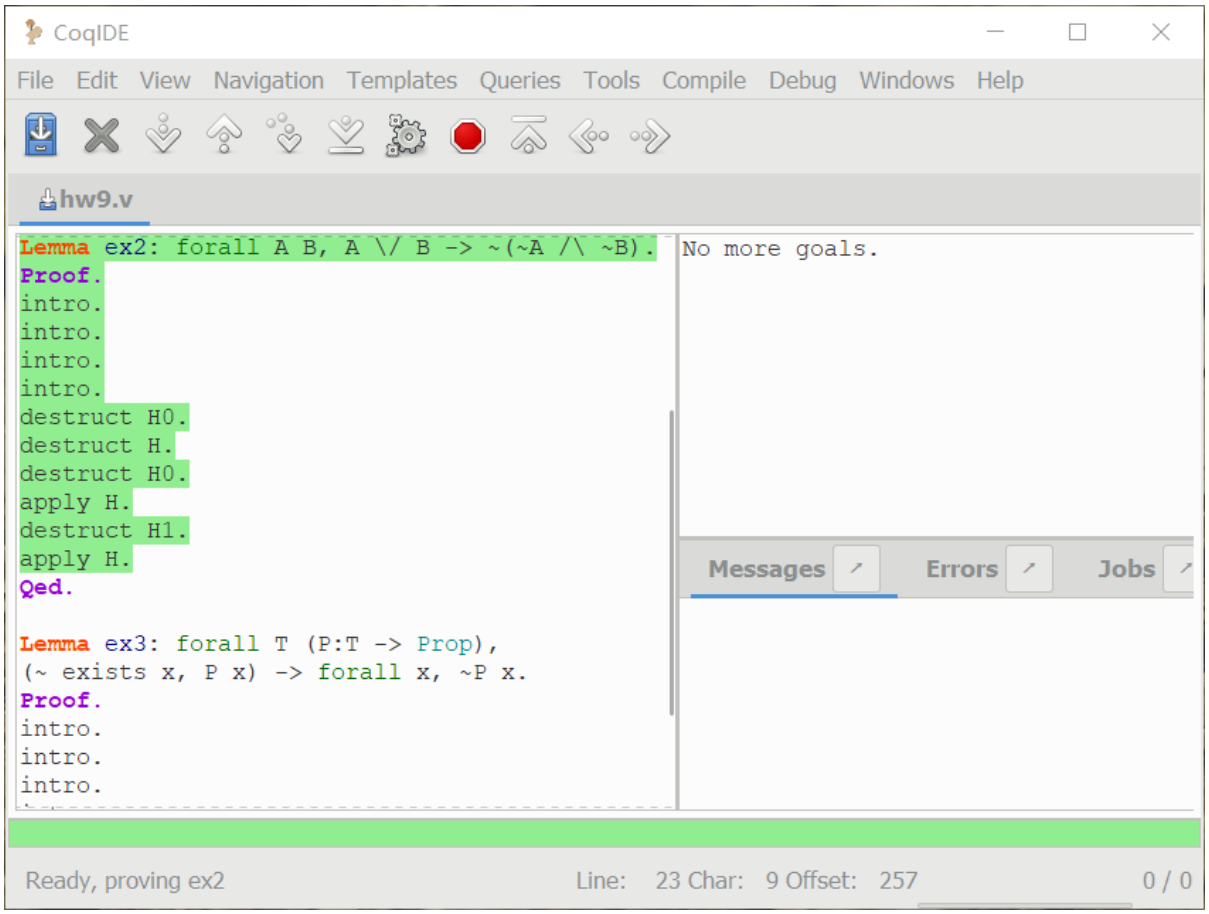
hw9.v
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
1 goal
A, B : Prop
H : B
H0 : ~ A
B
Messages
Errors
Jobs
Ready, proving ex2
Line: 22 Char: 13 Offset: 248
0 / 0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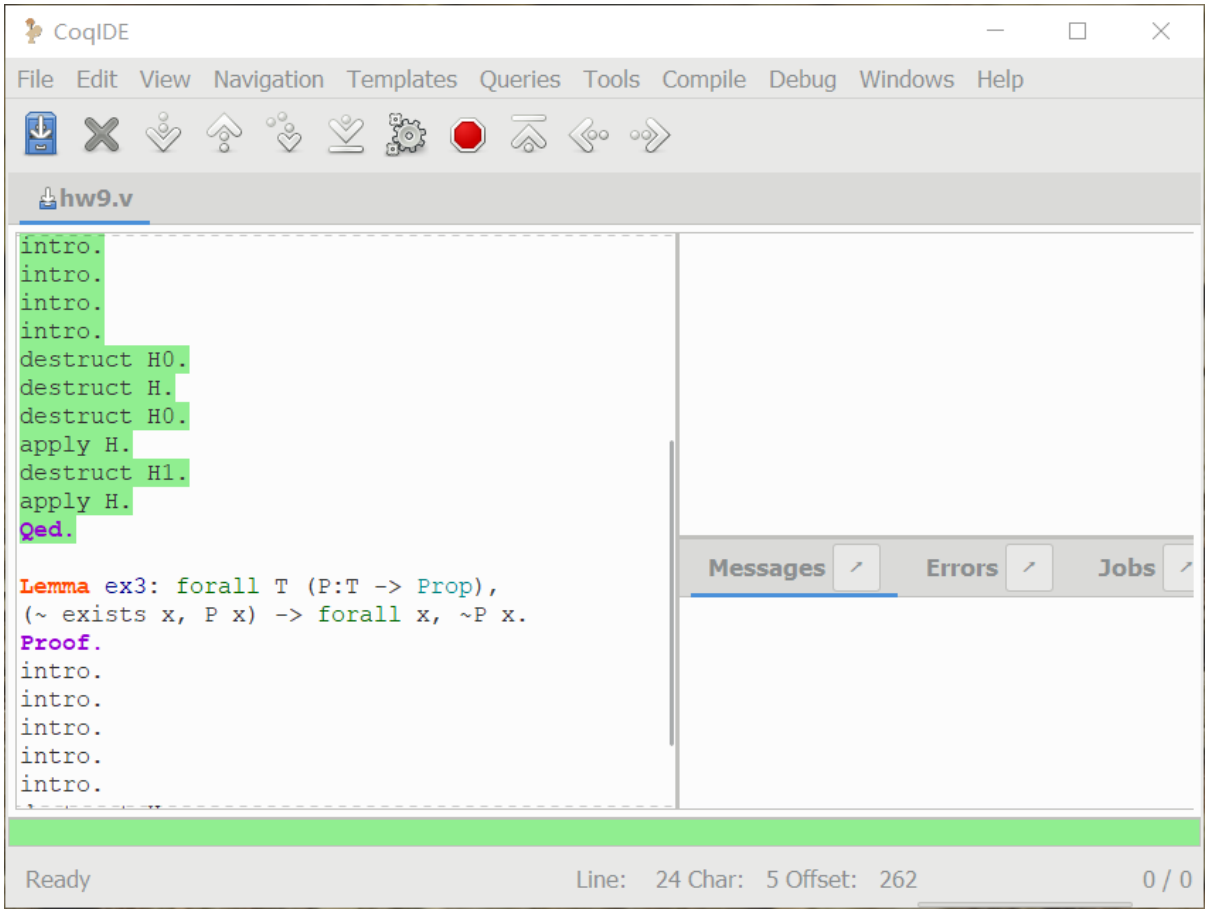
hw9.v
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
No more goals.
Messages
Errors
Jobs
Ready, proving ex2
Line: 23 Char: 9 Offset: 257
0 / 0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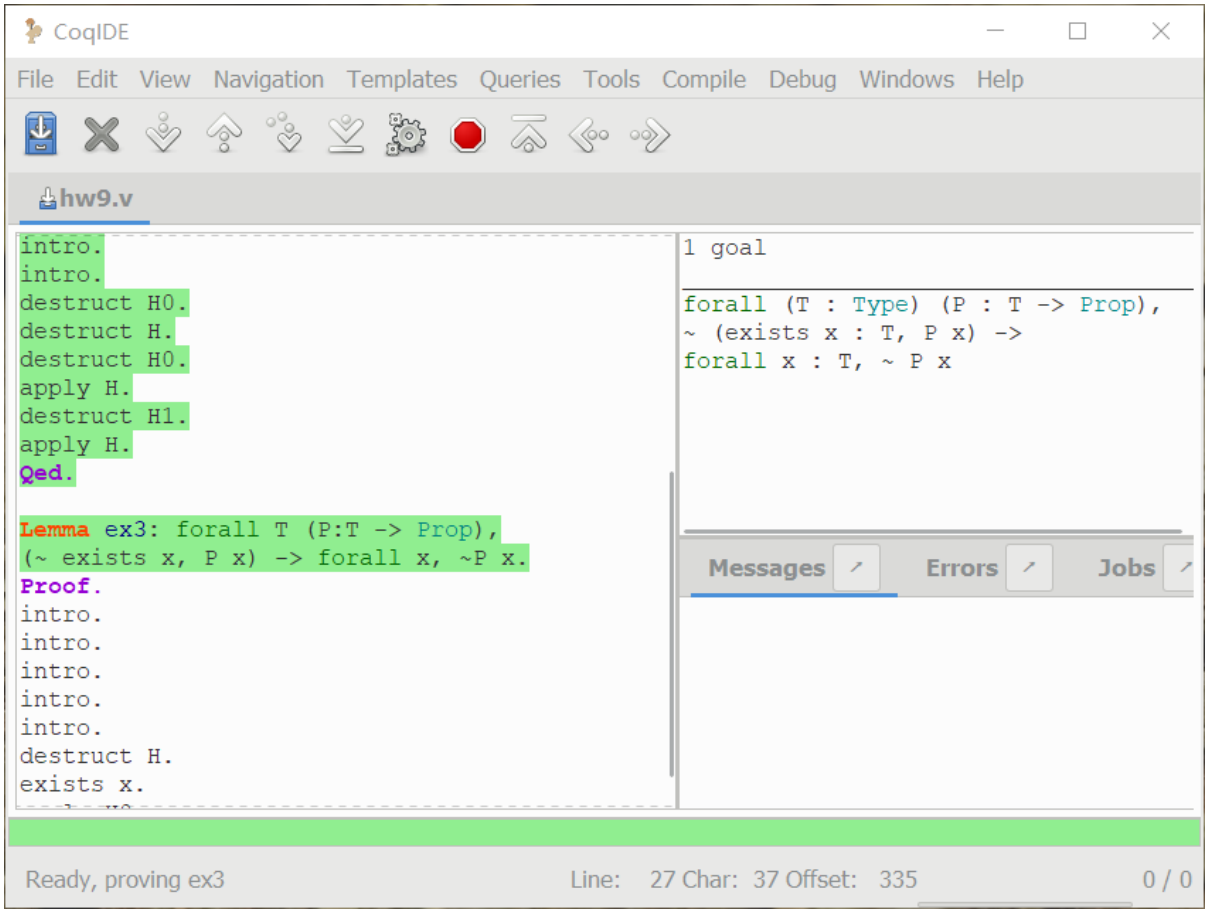
hw9.v
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
Messages
Errors
Jobs
Ready
Line: 24 Char: 5 Offset: 262
0 / 0

Q3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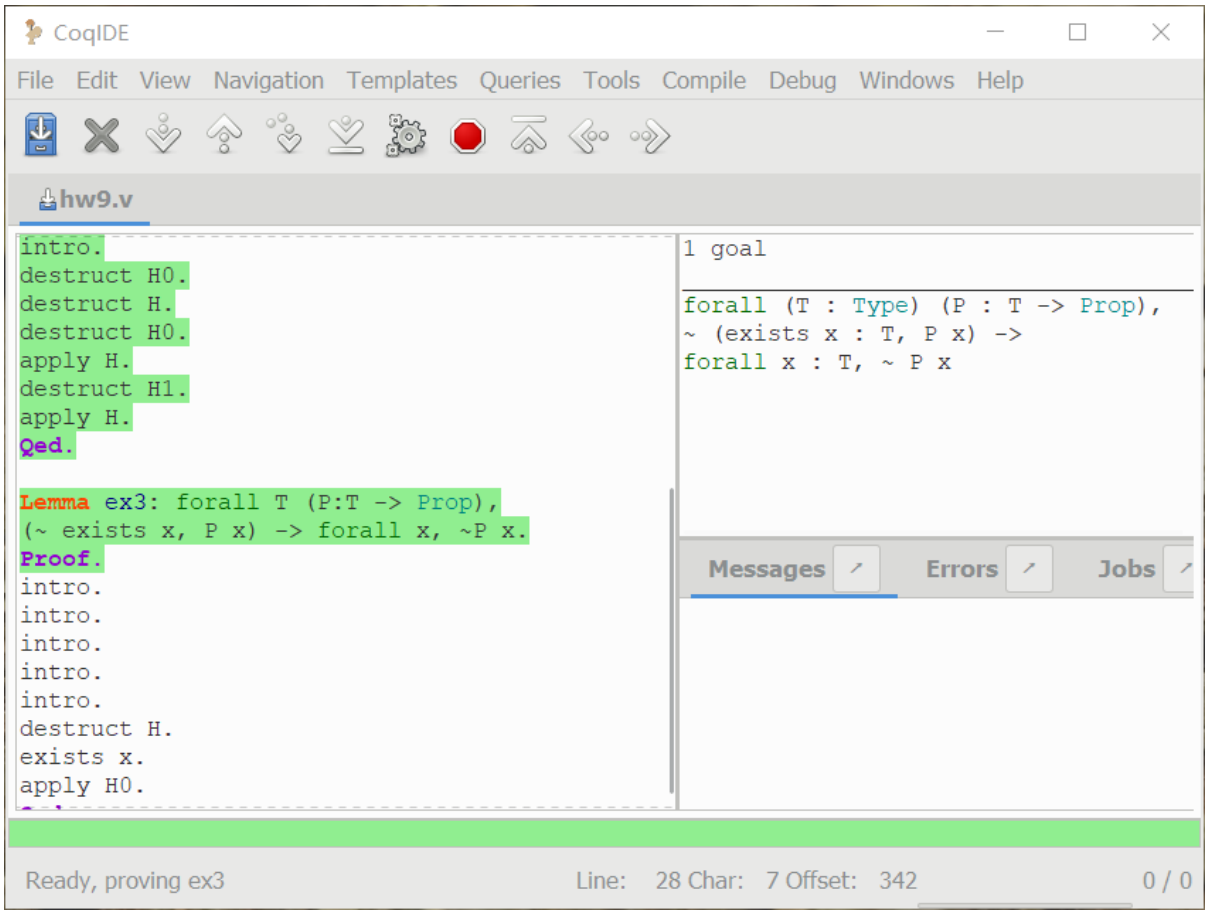
hw9.v
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
1 goal
forall (T : Type) (P : T -> Prop),
~ (exists x : T, P x) ->
forall x : T, ~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 27 Char: 37 Offset: 335
0 / 0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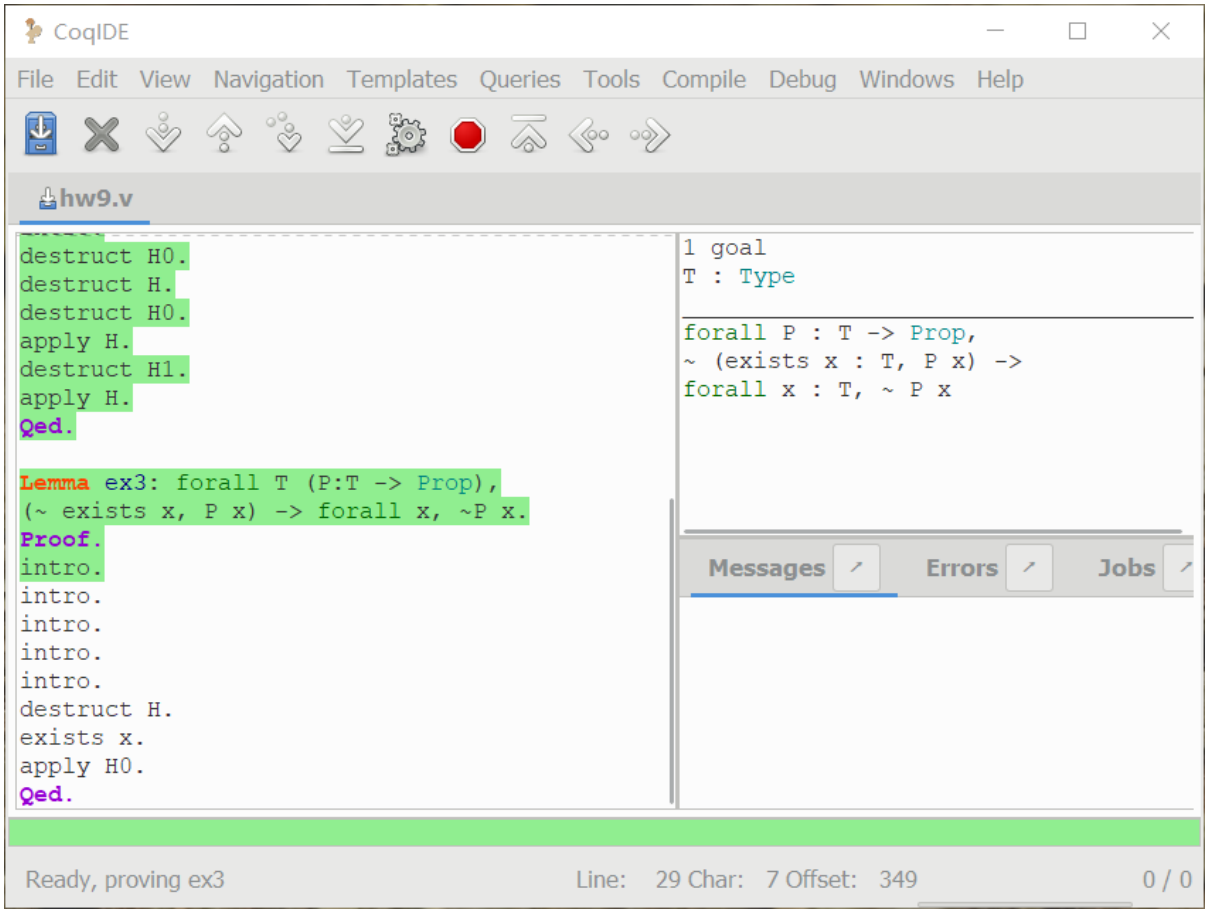
hw9.v
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
1 goal
forall (T : Type) (P : T -> Prop),
~ (exists x : T, P x) ->
forall x : T, ~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 28 Char: 7 Offset: 342
0 / 0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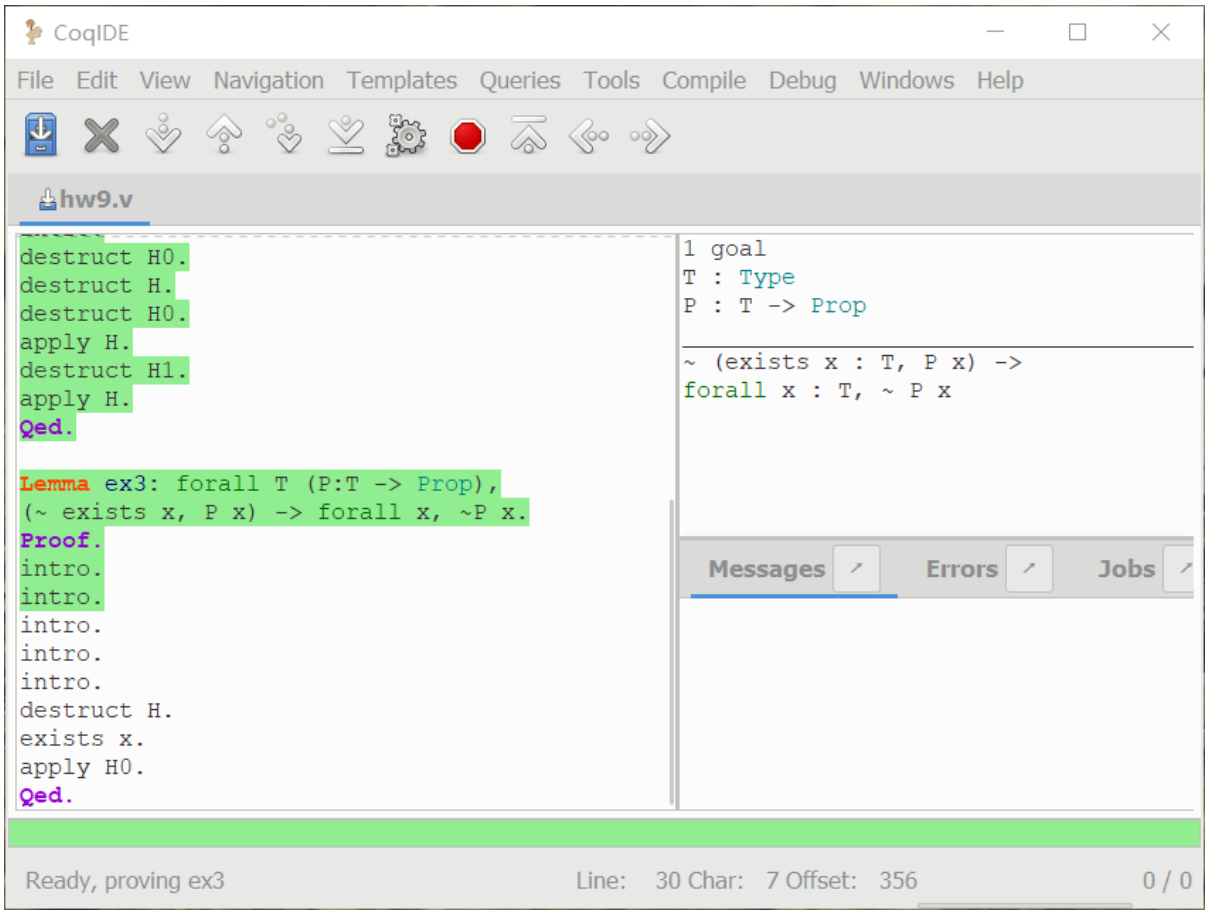
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
forall P : T -> Prop,
~ (exists x : T, P x) ->
forall x : T, ~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 29 Char: 7 Offset: 349
0 / 0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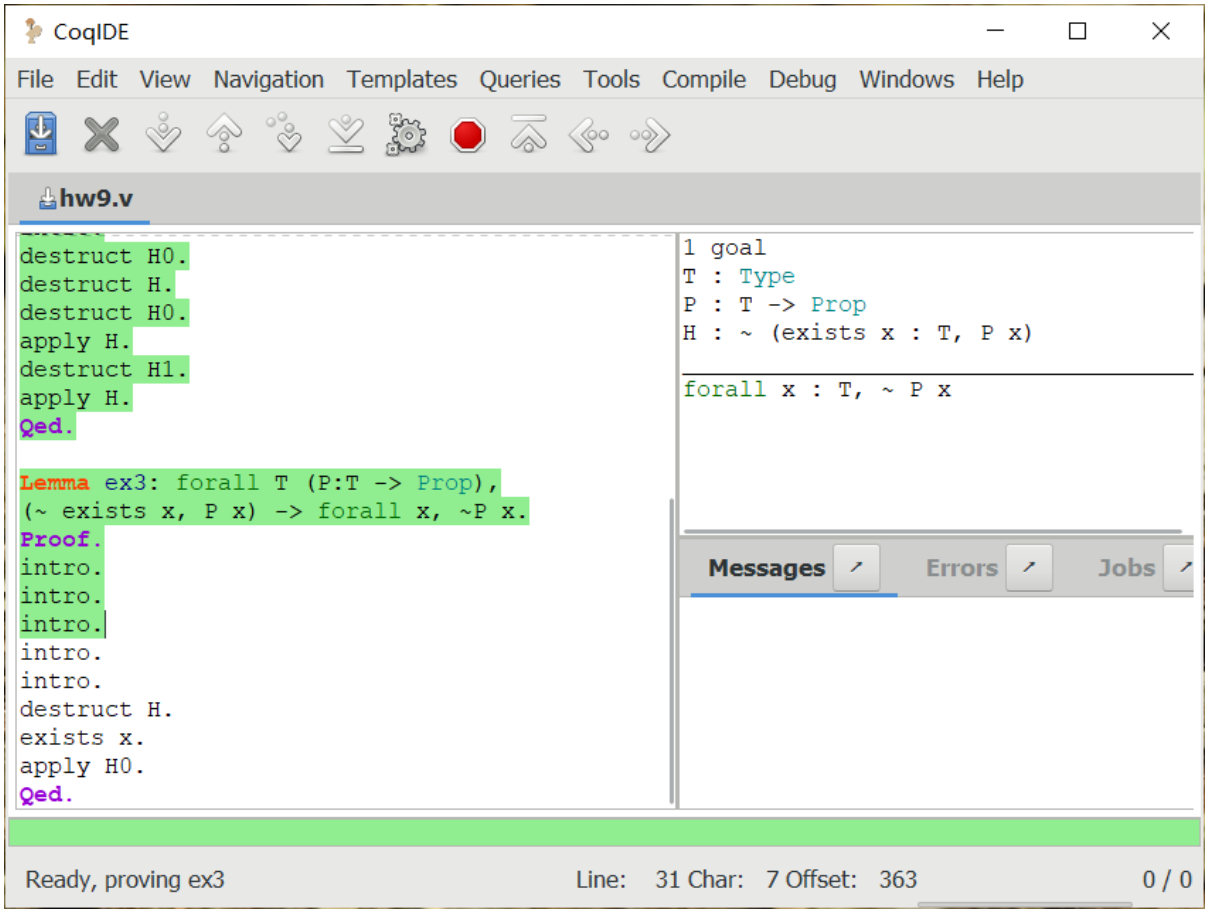
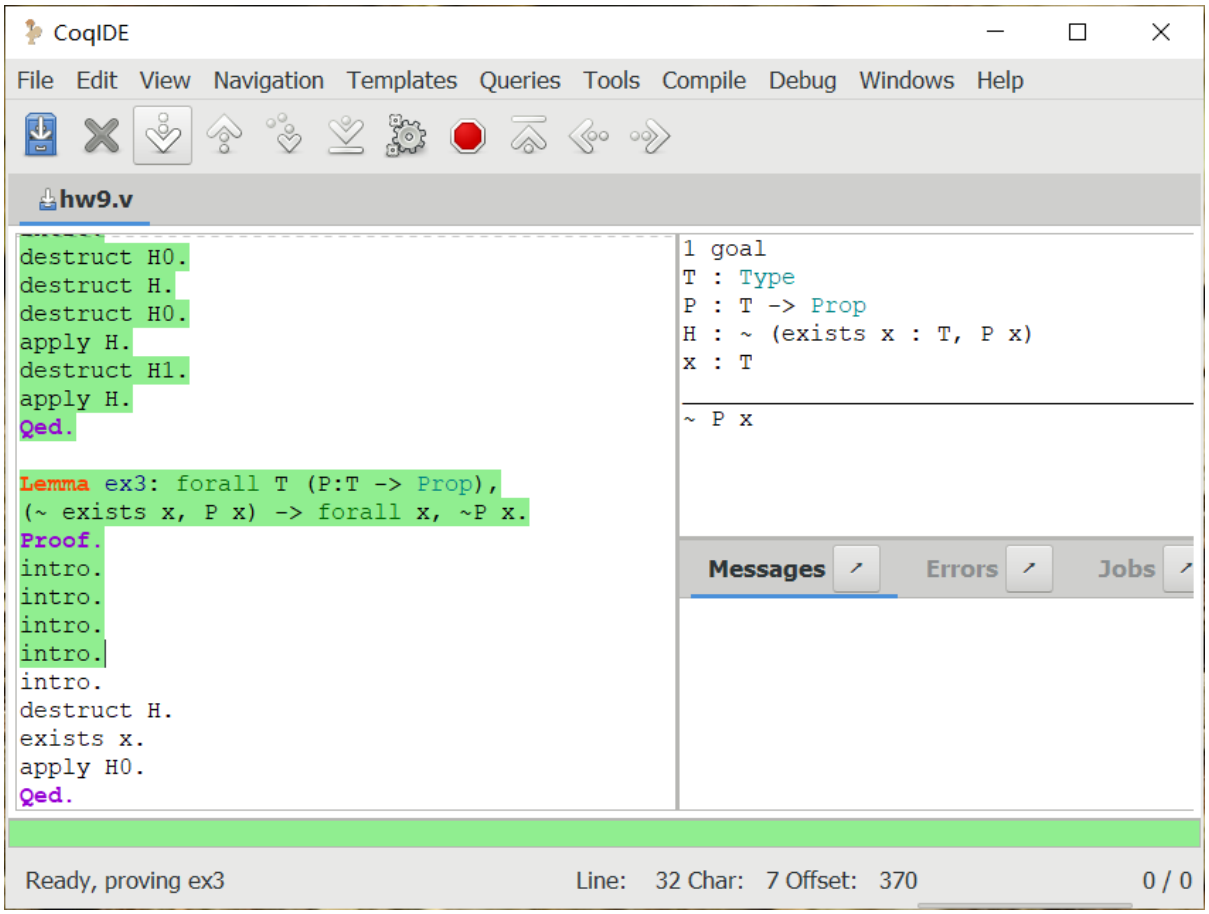
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
~ (exists x : T, P x) ->
forall x : T, ~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 30 Char: 7 Offset: 356
0 / 0


CoqIDE
File Edit View Navigation Templates Queries Tools Compile Debug Windows Help
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
H : ~ (exists x : T, P x)
forall x : T, ~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 31 Char: 7 Offset: 363
0 / 0


CoqIDE
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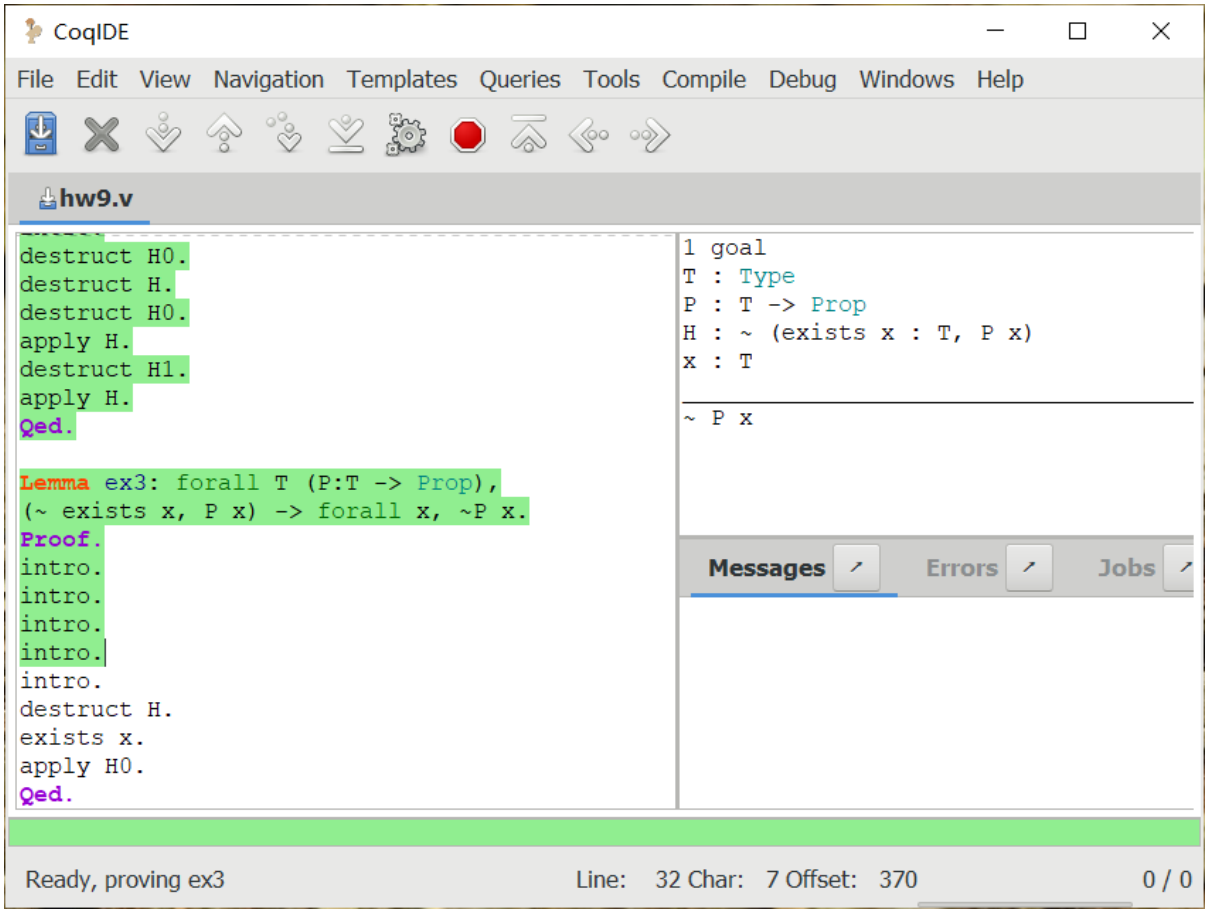
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
H : ~ (exists x : T, P x)
x : T
~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 32 Char: 7 Offset: 370
0 / 0


CoqIDE
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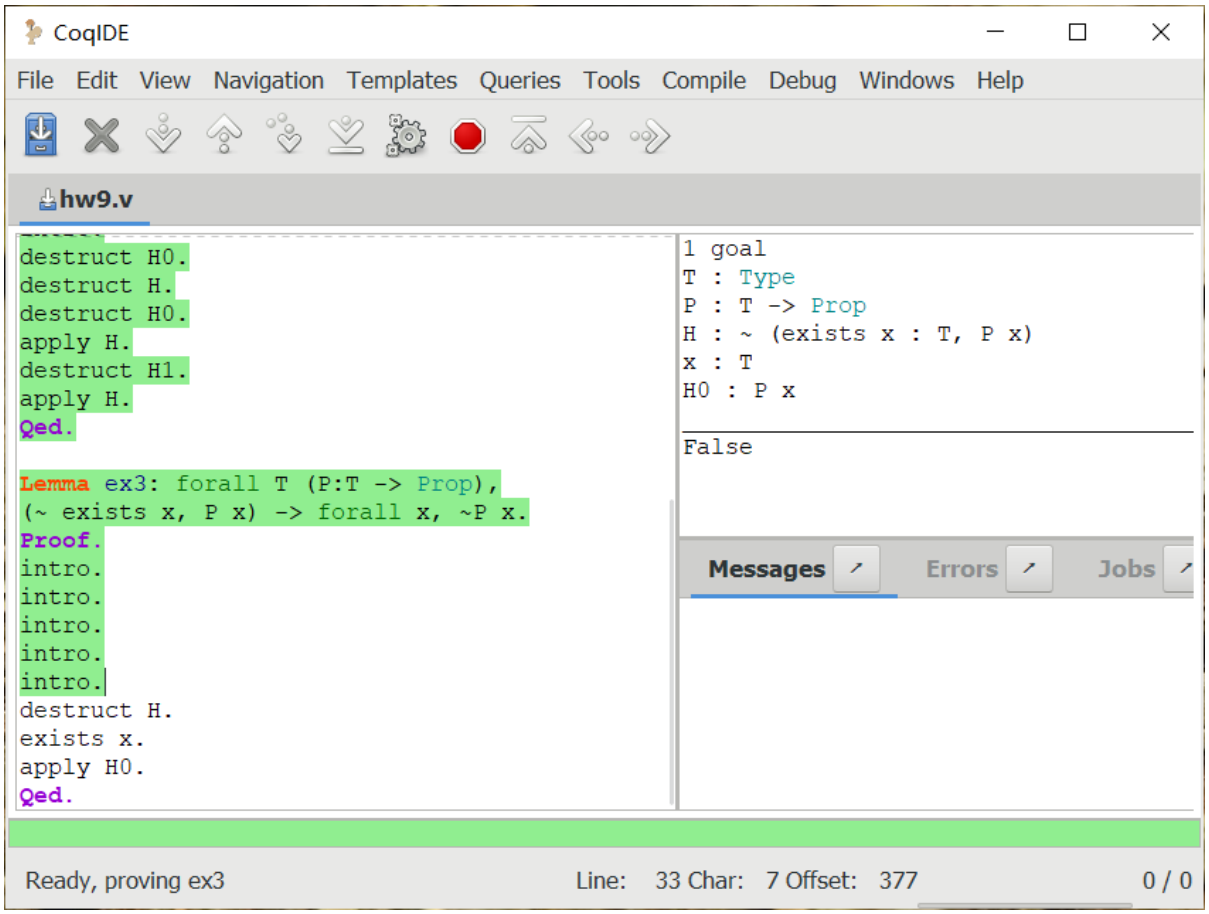
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
H : ~ (exists x : T, P x)
x : T
~ P x
Messages
Errors
Jobs
Ready, proving ex3
Line: 32 Char: 7 Offset: 370
0 / 0


CoqIDE
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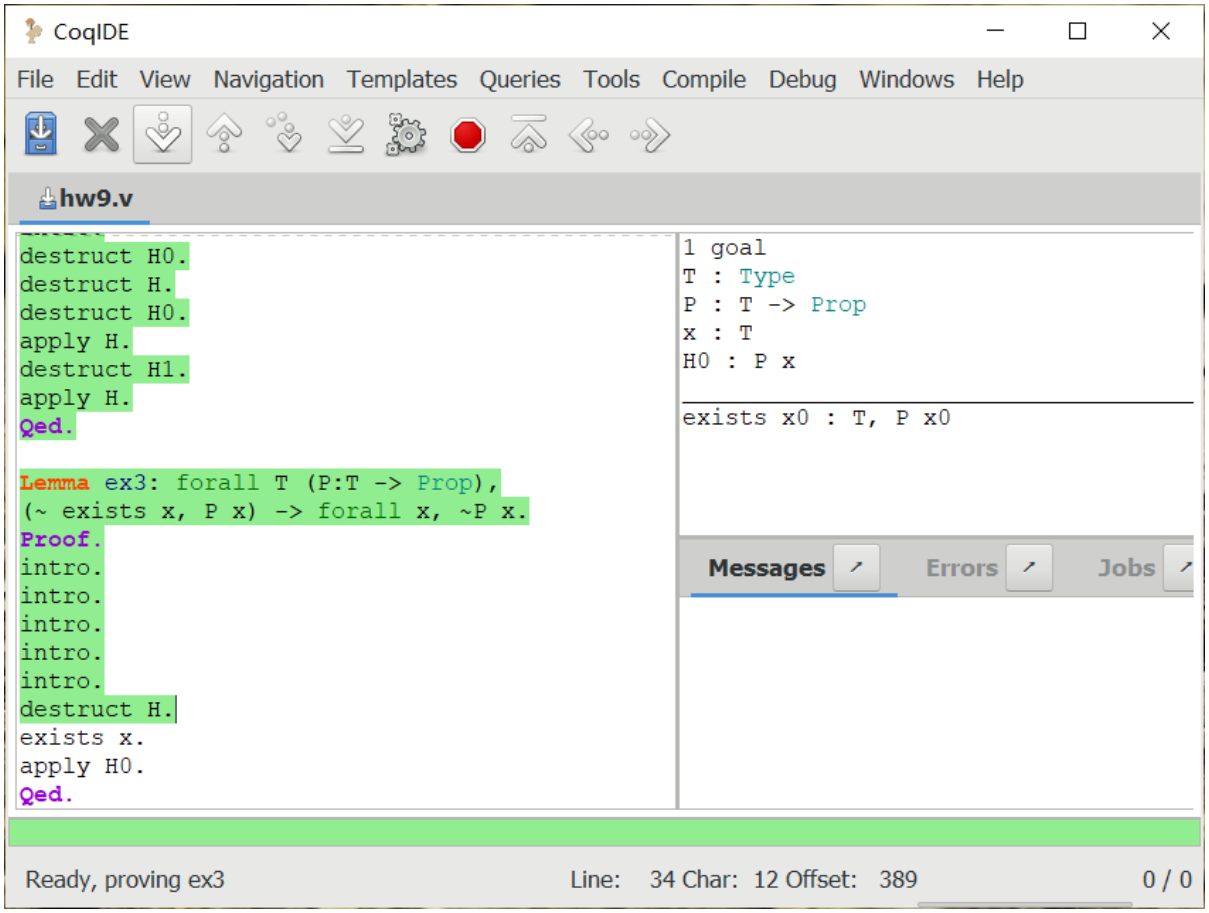
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
H : ~ (exists x : T, P x)
x : T
H0 : P x
False
Messages
Errors
Jobs
Ready, proving ex3
Line: 33 Char: 7 Offset: 377
0 / 0


CoqIDE
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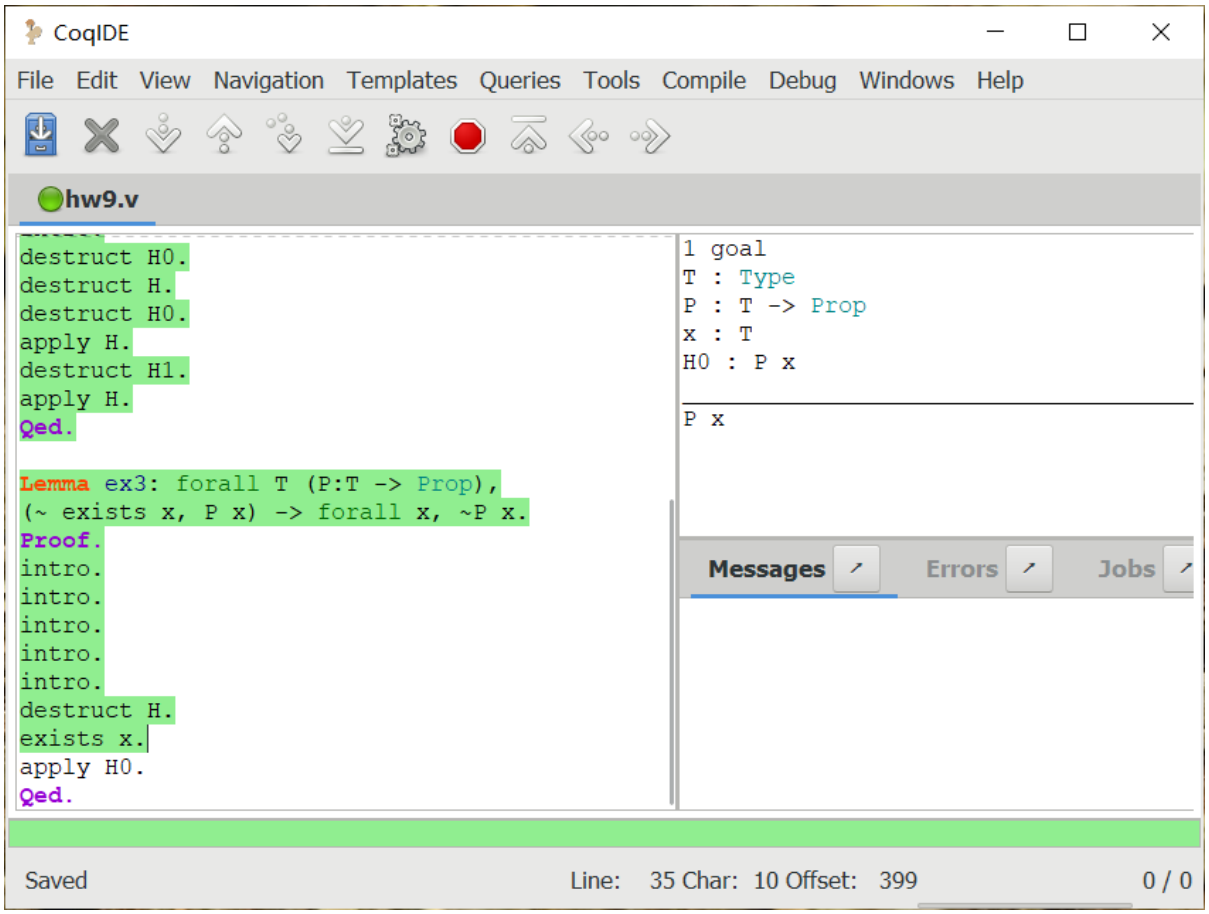
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
x : T
H0 : P x
exists x0 : T, P x0
Messages
Errors
Jobs
Ready, proving ex3
Line: 34 Char: 12 Offset: 389
0 / 0


CoqIDE
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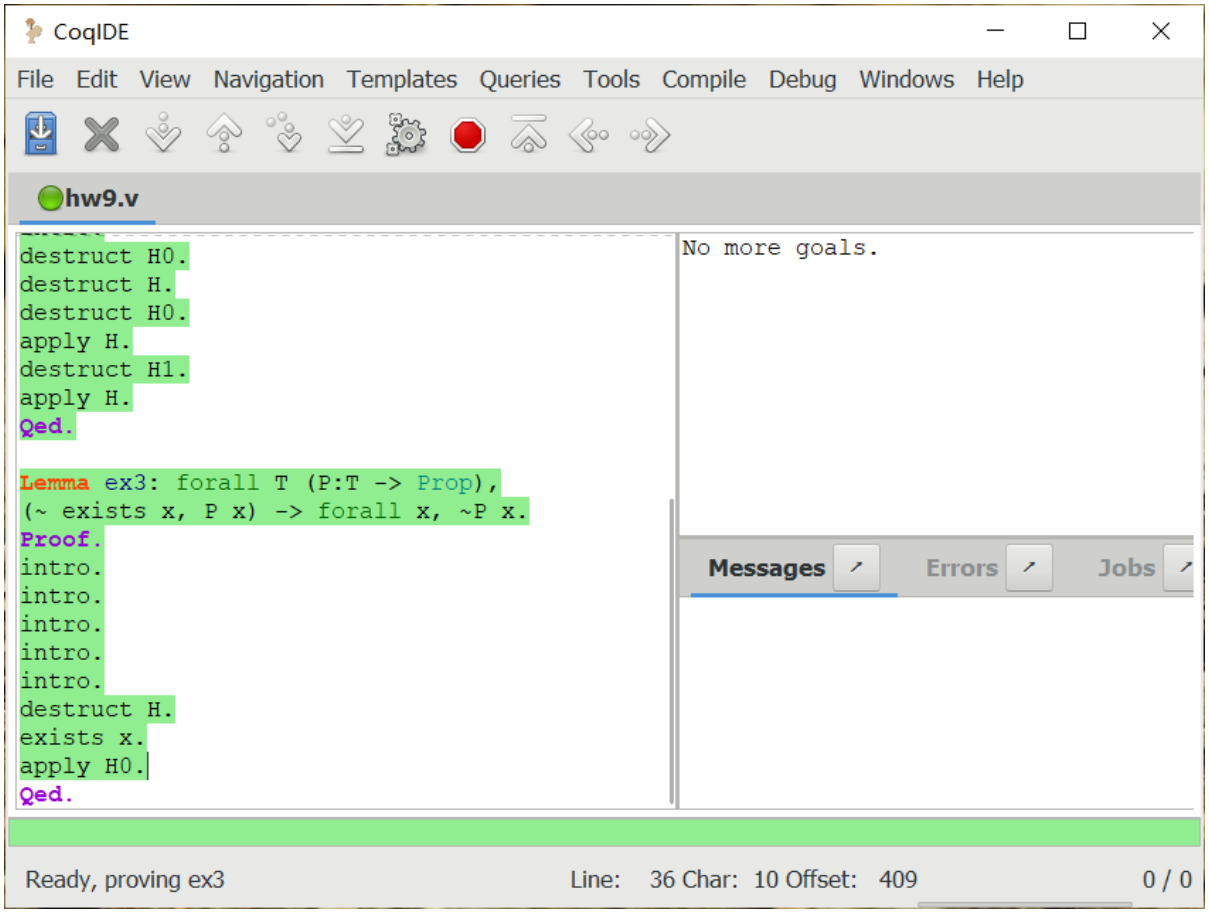
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
1 goal
T : Type
P : T -> Prop
x : T
H0 : P x
P x
Messages
Errors
Jobs
Saved
Line: 35 Char: 10 Offset: 399
0 / 0


CoqIDE
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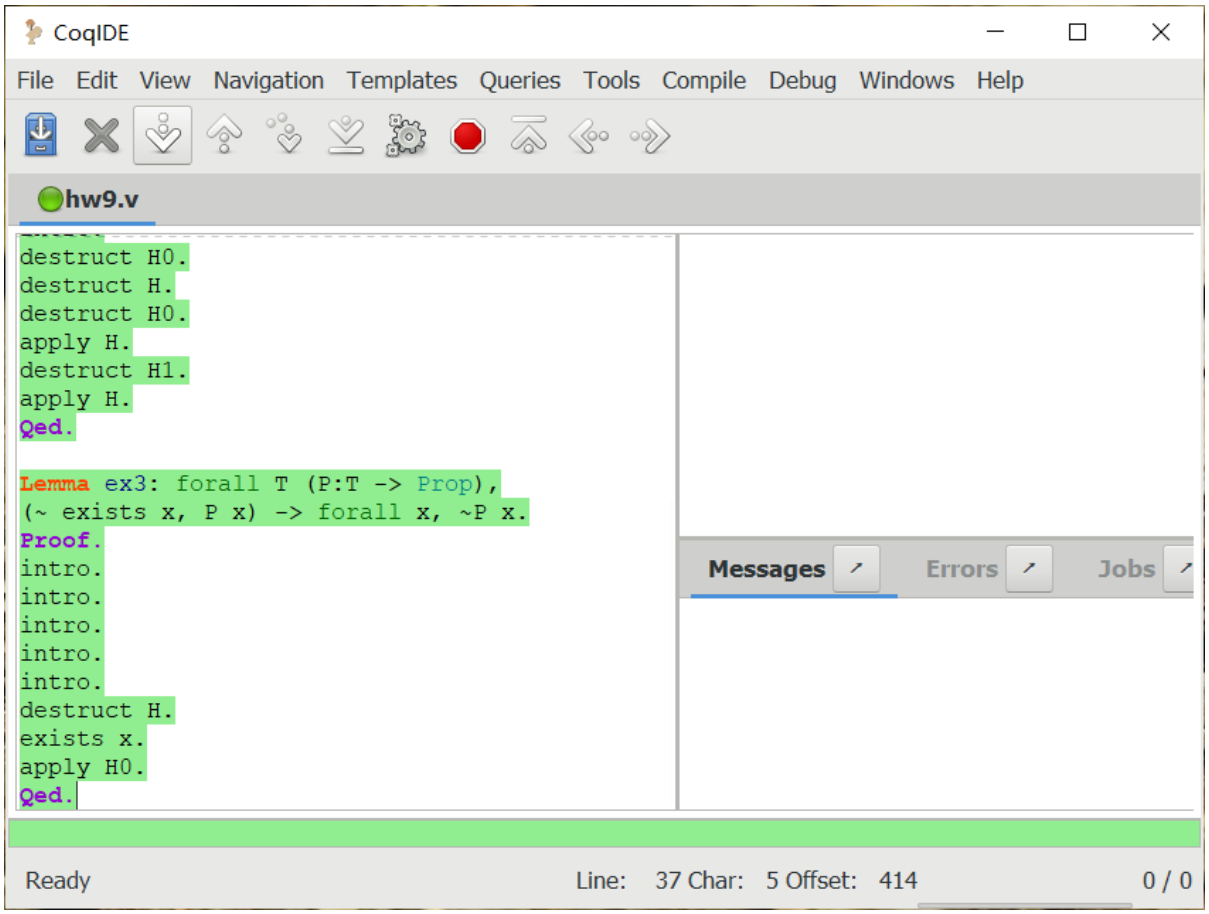
hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
No more goals.
Messages
Errors
Jobs
Ready, proving ex3
Line: 36 Char: 10 Offset: 409
0 / 0


CoqIDE
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hw9.v
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
destruct H.
exists x.
apply H0.
Qed.
Messages
Errors
Jobs
Ready
Line: 37 Char: 5 Offset: 414
0 / 0

Appendix-source code

Q1

```
Lemma ex1: forall A, ~~~A -> ~A.
Proof.
intro.
intro.
intro.
destruct H.
intro.
destruct H.
apply H0.
Qed.
```

Q2

```
Lemma ex2: forall A B, A \/ B -> ~(~A /\ ~B).
Proof.
intro.
intro.
intro.
intro.
destruct H0.
destruct H.
destruct H0.
apply H.
destruct H1.
apply H.
Qed.
```

Q3

```
Lemma ex3: forall T (P:T -> Prop),
(~ exists x, P x) -> forall x, ~P x.
Proof.
intro.
intro.
intro.
intro.
intro.
```

```
destruct H.
exists x.
apply H0.
Qed.
```