

# SWISH-Prolog

# SWISH

The screenshot shows the SWISH web interface at <https://swish.swi-prolog.org/p/myDistance.pl>. The interface includes a menu bar with File, Edit, Examples, and Help. The main editor displays a Prolog program named `myDistance` with the following code:

```

1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.

```

The right-hand pane shows the execution results. The first query is `distance(chevy, X).`, which returns `X = 2205`. The second query is `trace, (distance(chevy, X)).`, which shows a detailed trace of the execution:

```

Call: distance(chevy, _3984)
Call: speed(chevy, _4256)
Exit: speed(chevy, 105)
Call: time(chevy, _4256)
Exit: time(chevy, 21)
Call: _3984 is 105*21
Exit: 2205 is 105*21
Exit: distance(chevy, 2205)
X = 2205

```

The bottom of the interface includes buttons for Examples, History, Solutions, and a Run! button.

<https://swish.swi-prolog.org>

# Click “Program”

The screenshot shows the SWISH web interface in a browser. The address bar displays `https://swish.swi-prolog.org`. The navigation bar includes a SWISH logo, a menu with 'File', 'Edit', 'Examples', and 'Help', a search bar, and a notification for '269 users online'. Below the navigation bar, there's a section to 'Create a' with two buttons: 'Program' and 'Notebook', followed by the word 'here'. Below this, it says 'based on' with three buttons: 'Empty', 'Student', and 'CLP', followed by the word 'profile'. A search bar contains the text 'user:"me"' and has a 'Filter' dropdown and a 'Type' dropdown. Below the search bar, a red warning icon and text state 'No matching files'. Below this, a message says 'If you are a new user you may' followed by a bulleted list: 'Use the Examples menu from the navigation bar' and 'Use the Program or Notebook button above'. A link 'help on search' is also present. On the right side of the interface, there's a large owl illustration. At the bottom, there's a text input field with the placeholder 'your query goes here ...' and a 'Run!' button. Below the input field, there are three buttons: 'Examples', 'History', and 'Solutions', and a checkbox labeled 'table results'.

SWISH -- SWI-Prolog for SHaring

https://swish.swi-prolog.org

SWISH

File Edit Examples Help

269 users online

Search

New tab

Create a **Program** **Notebook** here

based on Empty Student CLP profile

user:"me" Filter Type

**No matching files**

If you are a new user you may

- Use the Examples menu from the navigation bar
- Use the Program or Notebook button above

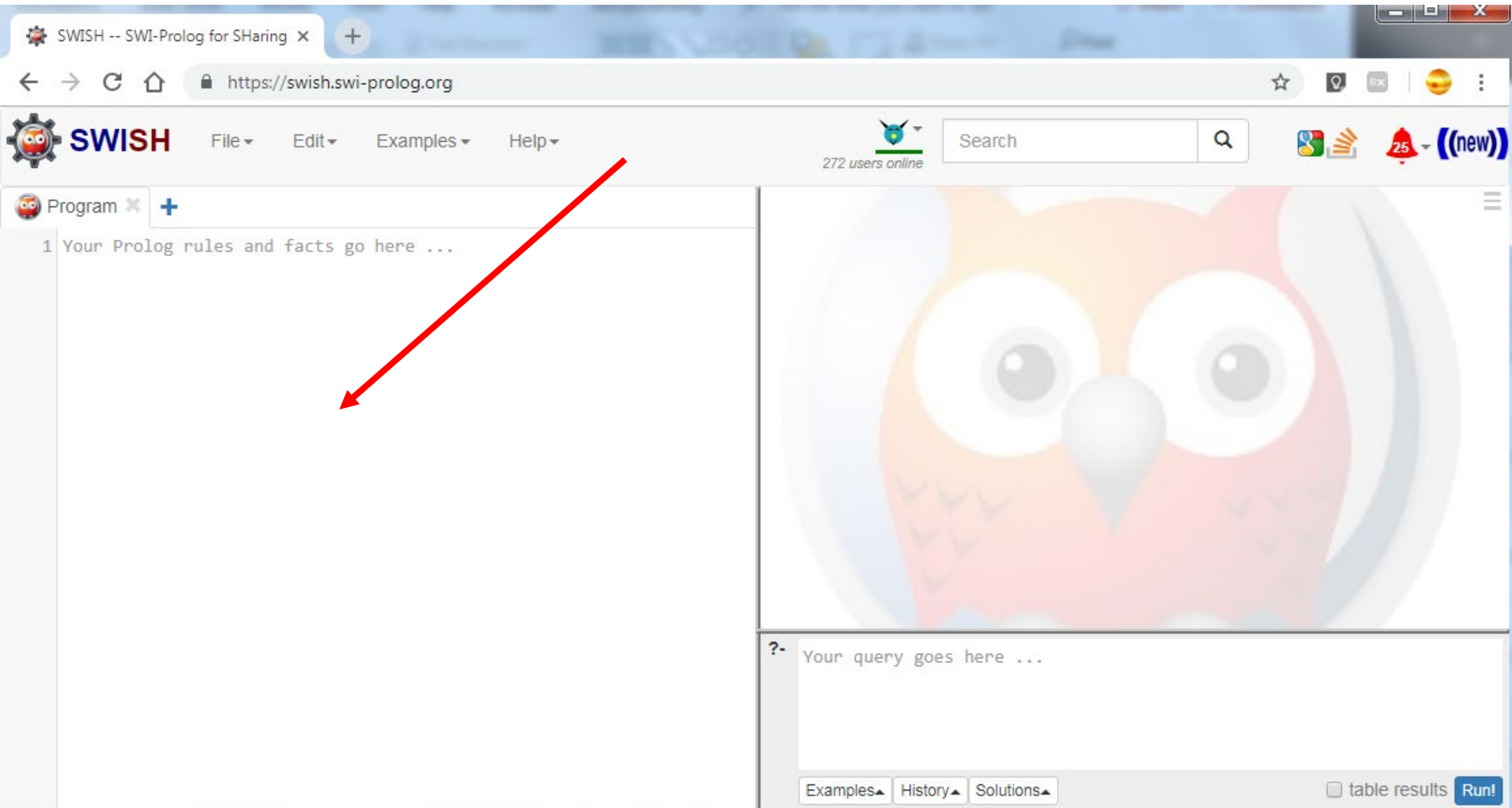
help on search

your query goes here ...

Examples History Solutions

table results Run!

# Start Coding here



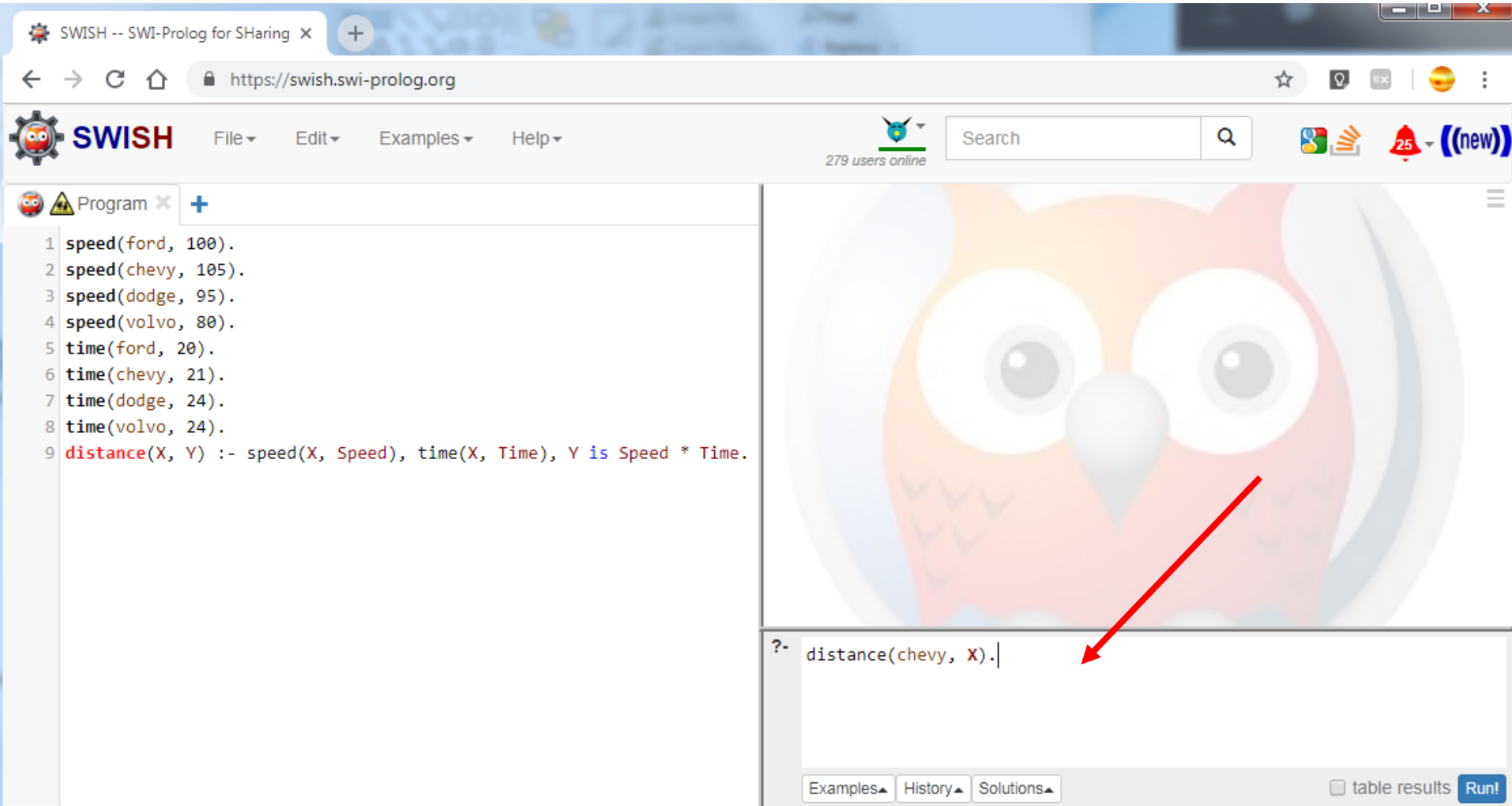
# Your Prolog code

The screenshot shows the SWISH web interface for Prolog programming. The browser address bar displays `https://swish.swi-prolog.org`. The interface includes a top navigation bar with the SWISH logo, a search bar, and a status indicator showing "271 users online". Below the navigation bar, the main workspace is divided into two panels. The left panel, titled "Program", contains the following Prolog code:

```
1 speed(ford, 100).  
2 speed(chevy, 105).  
3 speed(dodge, 95).  
4 speed(volvo, 80).  
5 time(ford, 20).  
6 time(chevy, 21).  
7 time(dodge, 24).  
8 time(volvo, 24).  
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.
```

The right panel displays a large, stylized owl graphic. Below the owl, there is a query input field labeled "?- Your query goes here ...". At the bottom of the interface, there are buttons for "Examples", "History", and "Solutions", along with a checkbox for "table results" and a "Run!" button.

# Write your Query here



The screenshot shows the SWISH web interface for Prolog programming. The browser address bar displays `https://swish.swi-prolog.org`. The interface includes a menu bar with `File`, `Edit`, `Examples`, and `Help`. A search bar is located in the top right, and a status bar indicates `279 users online`. The main editor area is divided into two panes. The left pane, titled `Program`, contains the following Prolog code:

```
1 speed(ford, 100).  
2 speed(chevy, 105).  
3 speed(dodge, 95).  
4 speed(volvo, 80).  
5 time(ford, 20).  
6 time(chevy, 21).  
7 time(dodge, 24).  
8 time(volvo, 24).  
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.
```

The right pane displays a large, stylized owl illustration. Below the owl, a query input field contains the text `?- distance(chevy, X).`, with a red arrow pointing to it. At the bottom of the interface, there are buttons for `Examples`, `History`, and `Solutions`, along with a checkbox for `table results` and a `Run!` button.

# Click “Run!”

The screenshot shows the SWISH web interface for Prolog programming. The browser address bar displays `https://swish.swi-prolog.org`. The SWISH logo is in the top left, and a search bar is in the top right. The main area is divided into three sections:

- Program Editor (Left):** Contains a list of Prolog facts and a rule:

```
1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.
```
- Visualization (Center):** A large, stylized owl graphic.
- Results Pane (Right):** Shows the execution of the query `distance(chevy, X).` with the result `X = 2205`. Below this, a query window shows `?- distance(chevy, X).` and a button labeled **Run!**.

A red arrow points from the owl graphic to the **Run!** button.

# Solutions > Debug (trace)

The screenshot shows the SWISH web interface for SWI-Prolog. The browser address bar displays `https://swish.swi-prolog.org`. The interface includes a search bar, a user count of 281 users online, and a menu with options like File, Edit, Examples, and Help.

The main editor area contains the following Prolog code:

```

1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.

```

The execution results pane on the right shows the query `distance(chevy, X).` with the result `X = 2205`. A context menu is open over the results, listing various options: Aggregate (count all), Projection, Order by, Distinct, Limit, Time, and Debug (trace). The "Debug (trace)" option is highlighted.

At the bottom of the interface, there are tabs for Examples, History, and Solutions, along with a checkbox for "table results" and a "Run!" button.



# Click “Run!”

SWISH -- SWI-Prolog for SHaring

https://swish.swi-prolog.org

SWISH File Edit Examples Help

278 users online Search

Program

```
1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.
```

distance(chevy, X).

X = 2205

?- trace, (distance(chevy, X)).

Examples History Solutions

☐ table results **Run!**

# Click “Step into” button

The screenshot shows the SWISH web interface. The browser address bar displays `https://swish.swi-prolog.org`. The SWISH logo and navigation menu (File, Edit, Examples, Help) are at the top. A search bar and a notification for 276 users online are also present. The main editor shows a Prolog program with the following code:

```
1 speed(ford, 100).  
2 speed(chevy, 105).  
3 speed(dodge, 95).  
4 speed(volvo, 80).  
5 time(ford, 20).  
6 time(chevy, 21).  
7 time(dodge, 24).  
8 time(volvo, 24).  
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.
```

A red arrow points from the text "Click 'Step into' button" to the "Step into" button (represented by a blue arrow icon) in the execution control bar. The execution control bar shows the current state of the program:

- The first window displays `distance(chevy, X).` with the value `X = 2205`.
- The second window displays `trace, (distance(chevy, X)).`
- The third window displays `Call: distance(chevy, _3990)`.

Below the execution control bar, there is a section for the current goal, showing `?- trace, (distance(chevy, X)).` and buttons for Examples, History, and Solutions. A checkbox for "table results" and a "Run!" button are also visible.

# Trace result

The screenshot shows the SWISH web interface for Prolog programming. The browser address bar displays `https://swish.swi-prolog.org`. The SWISH logo and navigation menu (File, Edit, Examples, Help) are visible. The program editor on the left contains the following code:

```

1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.

```

The execution trace on the right shows the following steps:

```

distance(chevy, X).
X = 2205

trace, (distance(chevy, X)).

Call: distance(chevy, _3990)
Call: speed(chevy, _4262)
Exit: speed(chevy, 105)
Call: time(chevy, _4262)
Exit: time(chevy, 21)
Call: _3990 is 105*21
Exit: 2205 is 105*21
Exit: distance(chevy, 2205)
X = 2205

```

At the bottom, there is a query input field with `?- trace, (distance(chevy, X)).` and buttons for Examples, History, Solutions, table results, and a Run! button.

# Saving your file

The screenshot shows the SWISH web interface in a browser. The address bar displays `https://swish.swi-prolog.org/p/myDistance.pl`. The SWISH logo and navigation tabs (File, Edit, Examples, Help) are at the top. A 'File' menu is open, showing options: Save ..., Info & history ..., Reload, Open recent, Follow ..., Start TogetherJS ..., Download, and Print ....

The code editor on the left contains the following Prolog code:

```

1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 100).
4 speed(volvo, 100).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 20).
8 time(volvo, 20).
9 distance(X, Y) :- time(X, Time), Y is Speed * Time.

```

The right panel shows the execution results. The first query is `distance(chevy, X).` with the result `X = 2205`. The second query is `trace, (distance(chevy, X)).` showing the execution trace:

```

Call: distance(chevy, _3984)
Call: speed(chevy, _4256)
Exit: speed(chevy, 105)
Call: time(chevy, _4256)
Exit: time(chevy, 21)
Call: _3984 is 105*21
Exit: 2205 is 105*21
Exit: distance(chevy, 2205)
X = 2205

```

At the bottom right, there are buttons for 'Examples', 'History', 'Solutions', 'table results', and a 'Run!' button.

# Saving your file

## Save new version

---

Public   name	<input checked="" type="checkbox"/> myDistance.pl	Fork
Title	<input type="text" value="Descriptive title"/>	
Author	<input type="text" value="Your name"/>	
Changes	<input type="text" value="Describe your changes here"/>	
Tags	<input type="text" value="Tags help finding this code"/>	

Can save new version ☒ Anyone ☒ Logged in users ☒ Only me

☐ Follow this document

# Download your file

The screenshot shows the SWISH web interface at <https://swish.swi-prolog.org/p/myDistance.pl>. The interface includes a menu bar with 'File', 'Edit', 'Examples', and 'Help'. The 'File' menu is open, showing options like 'Save ...', 'Info & history ...', 'Reload', 'Open recent', 'Follow ...', 'Start TogetherJS ...', 'Download', and 'Print ...'. The 'Download' option is highlighted.

The main editor displays the following Prolog code:

```

1 speed(ford, 105).
2 speed(chevy, 105).
3 speed(dodge, 105).
4 speed(volvo, 105).
5 time(ford, 20).
6 time(chevy, 20).
7 time(dodge, 20).
8 time(volvo, 20).
9 distance(X, Y) :- time(X, Time), Y is Speed * Time.

```

The execution results are shown in the right-hand pane. The first query is `distance(chevy, X).`, which returns `X = 2205`. The second query is `trace, (distance(chevy, X)).`, which shows the following execution trace:

```

Call: distance(chevy, _3984)
Call: speed(chevy, _4256)
Exit: speed(chevy, 105)
Call: time(chevy, _4256)
Exit: time(chevy, 21)
Call: _3984 is 105*21
Exit: 2205 is 105*21
Exit: distance(chevy, 2205)
X = 2205

```

The bottom of the interface includes tabs for 'Examples', 'History', and 'Solutions', a checkbox for 'table results', and a 'Run!' button.

# Open a New Tab

The screenshot shows the SWISH web interface. The browser address bar displays `https://swish.swi-prolog.org/p/myDistance.pl`. The SWISH logo and navigation menu (File, Edit, Examples, Help) are at the top. The main editor shows a Prolog program with the following code:

```

1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.

```

A red arrow points to the '+' icon in the tab bar, which is labeled "myDistance" and "Open a new tab".

The right-hand pane shows the execution trace for the query `distance(chevy, X).`. The trace displays the following steps:

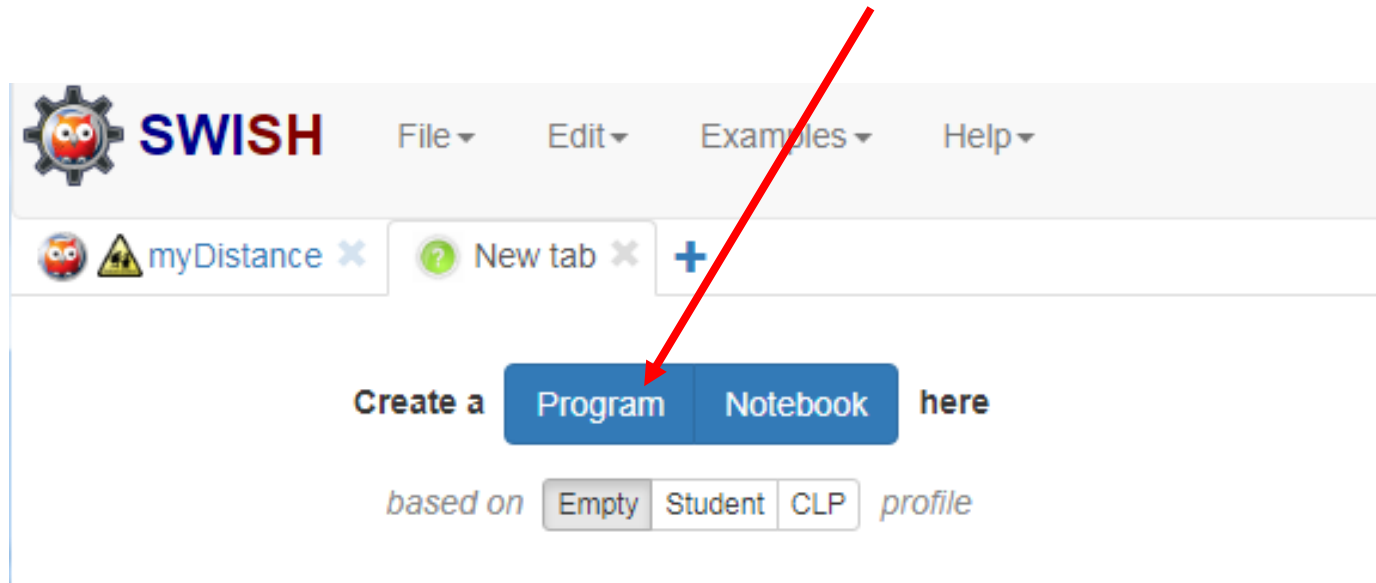
```

X = 2205
trace, (distance(chevy, X)).
Call: distance(chevy, _3984)
Call: speed(chevy, _4256)
Exit: speed(chevy, 105)
Call: time(chevy, _4256)
Exit: time(chevy, 21)
Call: _3984 is 105*21
Exit: 2205 is 105*21
Exit: distance(chevy, 2205)
X = 2205

```

At the bottom of the right pane, there is a query input field with `?- trace, (distance(chevy, X)).` and buttons for "Examples", "History", "Solutions", "table results", and a "Run!" button.

## Click “Program”





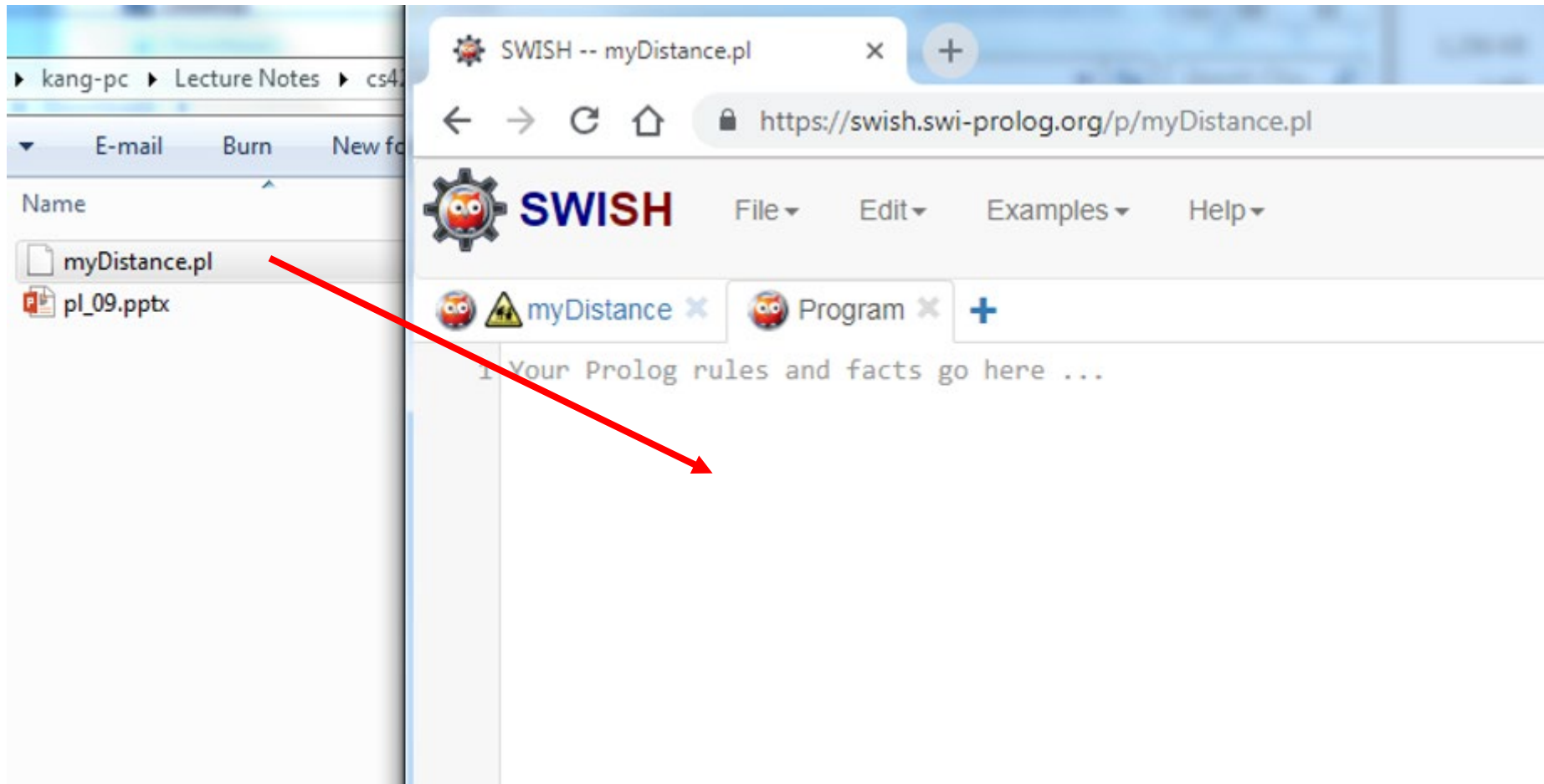
# New Tab Opened

The screenshot shows the SWISH web interface in a browser. The address bar displays the URL `https://swish.swi-prolog.org/p/myDistance.pl`. The SWISH logo and navigation menu (File, Edit, Examples, Help) are visible. A search bar and a '240 users online' indicator are also present. The main workspace is divided into two panes. The left pane, titled 'myDistance.pl', contains the text '1 Your Prolog rules and facts go here ...'. The right pane, titled 'Program', shows the execution of a Prolog query. The query is `distance(chevy, X).`, which has been executed, resulting in `X = 2205`. Below this, a trace of the execution is shown, detailing the calls and exits of the `distance`, `speed`, and `time` predicates. The trace shows the following sequence of events:

- Call: `distance(chevy, _3984)`
- Call: `speed(chevy, _4256)`
- Exit: `speed(chevy, 105)`
- Call: `time(chevy, _4256)`
- Exit: `time(chevy, 21)`
- Call: `_3984 is 105*21`
- Exit: `2205 is 105*21`
- Exit: `distance(chevy, 2205)`

The final result is `X = 2205`. At the bottom of the right pane, there is a prompt `?- trace, (distance(chevy, X)).` and buttons for 'Examples', 'History', 'Solutions', 'table results', and 'Run!'.

## Drag and Drop .pl file



# Program loaded

The screenshot shows the SWISH web interface for Prolog. The browser address bar displays the URL `https://swish.swi-prolog.org/p/myDistance.pl`. The SWISH logo and navigation menu (File, Edit, Examples, Help) are visible at the top. The main editor area contains the following Prolog code:

```

1 speed(ford, 100).
2 speed(chevy, 105).
3 speed(dodge, 95).
4 speed(volvo, 80).
5 time(ford, 20).
6 time(chevy, 21).
7 time(dodge, 24).
8 time(volvo, 24).
9 distance(X, Y) :- speed(X, Speed), time(X, Time), Y is Speed * Time.

```

On the right side, the execution results are displayed. The first query is `distance(chevy, X).`, which returns `X = 2205`. The second query is `trace, (distance(chevy, X)).`, which shows the following trace:

```

Call: distance(chevy, _3984)
Call: speed(chevy, _4256)
Exit: speed(chevy, 105)
Call: time(chevy, _4256)
Exit: time(chevy, 21)
Call: _3984 is 105*21
Exit: 2205 is 105*21
Exit: distance(chevy, 2205)
X = 2205

```

At the bottom, the prompt `?- trace, (distance(chevy, X)).` is visible.