COMP 524-PROGRAMMING LANGUAGES
ECLIPSE DIFFICULTY/HELPER PLUGIN

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**Motivation: Why Detect Programmer Difficulty**

- **Introspection:** review your pain points and solutions.
- **Collaboration:** Manual or automated help on difficulty detection.
- **Inspection/testing:** Correlation between difficulty and bugs?
- **Task and document adaptation**
- ...
DETECTION OF PROGRAMMING DIFFICULTY (SLOW PROGRESS)
STATUS INFERENCE ➔ STATUS COMMUNICATION
STATUS INFERENCE ➔ COLLABORATIVE DIFFICULTY RESOLUTION
DATA FOR DIFFICULTY DETECTION

- Program
- Test case data
- Programming Environment Commands
- Web Accesses
DATA FOR DIFFICULTY DETECTION

- > PL_Prolog [PLTeaching master]
  - > bin
  - Log
    - Eclipse
      - Log2019-08-13-12-28-01-019.xml
      - Log2019-08-15-20-48-51-046.xml
      - Log2019-08-16-10-30-24-574.xml
      - Log2019-08-18-13-48-25-796.xml
      - Log2019-08-22-07-43-42-694.xml
    - Metrics
      - Metrics2019-08-13-12-28-01-019.csv
      - Metrics2019-08-15-20-48-51-046.csv
      - Metrics2019-08-16-10-30-24-574.csv
  - src
    - pass.pl
Welcome to SWI-Prolog (threaded, 64 bits, version 8.0.2)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run `-license` for legal details.

For online help and background, visit http://www.swi-prolog.org
For built-in help, use `-help(Topic).` or `-apropos(Word).`
# METRICS

| Id | Prediction | Date     | File            | StartTime | ElapsedTime | BusyTime | Command | search | debug | Perc | focus | Perc | edit | Perc | remove | Perc | insert | Perc | COMMON | NAVIGATI | DEBUG | FOCUS | EDIT | RATE | R |
|----|------------|----------|-----------------|-----------|-------------|----------|---------|--------|-------|------|-------|------|------|------|-------|--------|------|--------|------|-------|------|-------|-----|------|-----|------|-----|
| 1  | NO         | Sun Oct 2 | Test2.java     | 1.57E+12  | 24763       | 0        | E I ) | 4     | 0     | 0    | 0    | 0    | 1    | 0    | 0    | 0.166667 | 0    | 0      | 0    | 0.166667 | 0   |
| 2  | NO         | Sun Oct 2 | Test2.java     | 1.57E+12  | 461404      | 0        | E R  | 1(R) | 1    | 0    | 0    | 50   | 50   | 0    | 0.25  | 0.008677 | 0    | 0      | 0.004338 | 0    | 0.004338 | 0  |
| 3  | YES        | Sun Oct 2 | Test2.java     | 1.57E+12  | 76811       | 0        | F    | 2    | 0    | 0    | 0    | 100  | 0    | 0    | 0    | 0.026316 | 0    | 0      | 0.026316 | 0    | 0      |    |
| 4  | NO         | Sun Oct 2 | Metrics20      | 1.57E+12  | 7823        | 7823     | F(E I)| 1    | 0    | 0    | 0    | 66.66667 | 33.3333 | 0    | 0.333333 | 0.428571 | 0    | 0      | 0.285714 | 0.142857 |    |
| 5  | NO         | Sun Oct 2 | Metrics20      | 1.57E+12  | 44040       | 0        | E I  | 1    | 0    | 0    | 0    | 100  | 0    | 1    | 0.022727 | 0    | 0      | 0.022727 |    |
| 6  | YES        | Sun Oct 2 | Metrics20      | 1.57E+12  | 161498      | 0        | F    | 4    | 0    | 0    | 0    | 100  | 0    | 0    | 0    | 0.024845 | 0    | 0      | 0.024845 |    |        |    |
# Chrome Accesses

<table>
<thead>
<tr>
<th>Rules</th>
<th>Goals and Queries</th>
<th>Log “safe” accesses (piazza, stackoverflow, edu sites – can disable some)</th>
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<tr>
<td><a href="#">15657146 15657146</a></td>
<td><a href="http://www.ablmcc.edu.hk/~scy/prolog/pro02">http://www.ablmcc.edu.hk/~scy/prolog/pro02</a></td>
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<tr>
<td><a href="#">15657146 15657146</a></td>
<td><a href="#">goals and</a> <a href="#">15657147 15657148 1565714800335</a> 1 User input in prolog - Stackoverflow</td>
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<td><a href="#">15657148 15657148 15657149</a></td>
<td><a href="#">1565714953554</a> 1 Comparison <a href="http://www.cse.unsw.edu.au/~bil">http://www.cse.unsw.edu.au/~bil</a></td>
<td></td>
</tr>
<tr>
<td><a href="#">15657150</a></td>
<td><a href="#">rules</a> <a href="#">goals and</a> <a href="#">1565715056303</a> 1 Rules in prolog - Google Search <a href="https://www.google.com">https://www.google.com</a></td>
<td></td>
</tr>
</tbody>
</table>
(Un) Installing Plug-in

A plug-in can possibly misbehave/slow you down

We show you both how to install it and uninstall it
HELP ➔ INSTALL NEW SOFTWARE
HERMES PLUG-IN SITE AND CHECK HERMES:

Enter: http://www.cs.unc.edu/~dewan/plugins/hermes in work with and hit return

Check HermesFeature

Next
CONFIRM

Install Details
Review the items to be installed.

Name: HermesFeature
Version: 1.0.0.201910211318
Id: HermesFeature.feature

Check HermesFeature

< Back  Next >  Finish  Cancel

Size: Unknown
Details:

15
Accept License

License is empty now, but may add text
Warning: You are installing software that contains unsigned content. The authenticity or validity of this software cannot be established. Do you want to continue with the installation?

- Install anyway
- Cancel
- Details >>
RESTART ECLIPSE

Software Updates

Would you like to restart Eclipse IDE to apply the changes?

Restart Now  No
GETTING TO VIEW TO RECORD DIFFICULTIES

Window ➔ Others
Open View

Hermes → DifficultyStatus
**Difficulty Status View**

When in Difficulty, press surmountable or insurmountable difficulty.

**Progress:** After having thought about it, you know exactly what to do (normal mode, no difficulty)

**Surmountable:** After having thought about it, you have some ideas on how the difficulty may be solved, but do not know the exact solution

**Insurmountable:** After having thought about it, you have no clue right now on how to solve the problem and are stopping to ask for help or think later
ELABORATE ON SURMOUNTABLE OR INSURMOUNTABLE DIFFICULTY
**CONFIGURING PLUG-IN BEFORE OR AFTER INSTALLING IT**

This is an optional step in case you want to receive difficult and non-difficulty notifications, called **slow progress** and **making progress** which you can correct.

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**Status Change Notification**

- **Activate Windows**
- **Goto Settings to activate Windows.**

**Status Change Notification**

- **Activate Windows**
- **Goto Settings to activate Windows.**

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Java(TM) Platform SE binary
**DOWNLOAD CONFIGURATION FILE**

Go to google drive: 
[https://drive.google.com/drive/u/1/folders/1AQrdEHvKSQZIAwEuezpkOhA8hiZBtMdj](https://drive.google.com/drive/u/1/folders/1AQrdEHvKSQZIAwEuezpkOhA8hiZBtMdj)

Right Click helper-config.properties and select download
NAVIGATE TO YOUR HOME DIRECTORY

Windows
Go to C:\Users\<user name>

Mac

Linux
Go to ~/<user name>

How to find your Home folder

To find your Home folder, open Finder and use the keyboard shortcut Command-Shift-H. You can use the Go pull-down menu from the menu bar to go to the Home folder. (Oddly, the home folder is called Home in this menu.)
Create Sub Directory in Home

Create helper-config in Home directory
Move Downloaded File to Subdirectory
USE TEXT EDITOR TO OPEN IT

```java
# Case Matters (at least by default)
# You can uncomment one more of the following parameters to change the behavior
# of the plugin.
# You will need to restart Eclipse to make the plugin read any changes you make.

# If you want to see difficulty predictions made by the current algorithm,
# uncomment the showStatusTransitions definition.
# You can help improve the algorithm by using the DifficultyStatus window to correct these predictions.
# Predictions, your commands, and web accesses to technical web pages are logged in the Logs folder.
# of each project, and you can explore the files using a text editor to understand what is logged.

#showStatusTransitions = true
```
UNCOMMENT showStatusTransitions

# Case Matters (at least by default)
# You can uncomment one more of the following parameters to change the behavior
# of the plugin.
# You will need to restart Eclipse to make the plugin read any changes you make.
# If you want to see difficulty predictions of the current algorithm,
# uncomment the showStatusTransitions definition.
# You can help improve the algorithm by using your feedback to correct these predictions.
# Predictions, your commands, and web accessed in the technical web part are logged in the Logs folder.
# of each project, and you can explore the files using a text editor to understand what is logged.

```java
showStatusTransitions = true
```

Line 12 to be uncommented
RESTART ECLIPSE

File is read when Eclipse Starts Up
Uninstalling Plugin
HELP ➔ INSTALL NEW SOFTWARE
Click on: Already Installed
HERMES Feature Uninstall
Click Finish
RESTART ECLIPSE