How to become a D contributor?

Sebastian Wilzbach
seb@wilzba.ch
dlang.rocks/contribute (slides)

@swilzbach
@wilzbach
State of D 2018

https://github.com/wilzbach/state-of-d-2018
The problem

How would you rate your experience learning D?
503 out of 540 people answered this question

⭐⭐⭐⭐⭐ 3.85 Average rating

How would you rate the quality of Phobos's (Standard Library) documentation?
492 out of 540 people answered this question

⭐⭐⭐⭐⭐ 3.64 Average rating

The problem

How would you rate the quality of D's specification?
271 out of 540 people answered this question

3.76 Average rating

Show detail

The problem

How happy are you with the language syntax?

487 out of 540 people answered this question

<table>
<thead>
<tr>
<th>Rank</th>
<th>Option</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It's awesome, but I miss a few features</td>
<td>199 / 41%</td>
</tr>
<tr>
<td>2</td>
<td>It's awesome - keep it as is</td>
<td>191 / 39%</td>
</tr>
<tr>
<td>3</td>
<td>It's ok</td>
<td>80 / 16%</td>
</tr>
<tr>
<td>4</td>
<td>It needs serious work</td>
<td>10 / 2%</td>
</tr>
<tr>
<td>5</td>
<td>I have a very hard time with D's syntax</td>
<td>7 / 1%</td>
</tr>
</tbody>
</table>

The problem

Are any of these tooling issues discouraging you from actively using D?

457 out of 540 people answered this question

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor debugging</td>
<td>178 / 39%</td>
</tr>
<tr>
<td>2</td>
<td>Nothing</td>
<td>119 / 26%</td>
</tr>
<tr>
<td>3</td>
<td>DLL support on Windows</td>
<td>90 / 20%</td>
</tr>
<tr>
<td>4</td>
<td>D's dependence on a large and bulky runtime</td>
<td>82 / 18%</td>
</tr>
<tr>
<td>5</td>
<td>dub</td>
<td>71 / 16%</td>
</tr>
<tr>
<td></td>
<td>Show more (3)</td>
<td>68 / 15%</td>
</tr>
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</table>

Can we fix this?

Have you contributed to dlang on GitHub?

474 out of 540 people answered this question

<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Yes</th>
<th>No, but I want to</th>
<th>No, and I don’t plan to</th>
<th>No, but to other D repositories</th>
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<td></td>
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<td>2</td>
<td>Yes</td>
<td></td>
<td></td>
<td>129</td>
<td>27%</td>
</tr>
<tr>
<td>3</td>
<td>No, and I don’t plan to</td>
<td></td>
<td></td>
<td>116</td>
<td>24%</td>
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<tr>
<td>4</td>
<td>No, but to other D repositories</td>
<td></td>
<td></td>
<td></td>
<td>88</td>
</tr>
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</table>

The D contribution experience

How would you rate your experience?
129 out of 540 people answered this question

3.67 Average rating

Contribution

- Blog post
- Tutorial
- Documentation improvement
- HackerNews / reddit involvement
- Mention D at XYZ
- Answering questions on StackOverflow || NG.learn
- Reporting an issue
- Donation
- etc.
Bugzilla

How satisfied are you with D's Bugzilla?

218 out of 540 people answered this question

3.27 Average rating

Bugzilla

- Triage
  - INVALID?
  - WONTFIX?
  - WORKSFORME?
  - DUPLICATE?
  - REGRESSION?

- Tag (e.g. bootcamp)
## Bugzilla Bootcamp

### Bugzilla Query

#### URL

https://issues.dlang.org/buglist.cgi?component=phobos&keywords=bootcamp%2C%20preapproved&keywords_type=anywords&list_id=225005&product=D&query_format=advanced&resolution=---

<table>
<thead>
<tr>
<th>ID</th>
<th>Product</th>
<th>Component</th>
<th>Assignee</th>
<th>Status</th>
<th>Resolution</th>
<th>Summary</th>
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</thead>
<tbody>
<tr>
<td>18290</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:nobody@puremagic.com">nobody@puremagic.com</a></td>
<td>NEW</td>
<td>---</td>
<td>std.conv.parse throws ConvOverflowException for negative values in hex</td>
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<tr>
<td>4391</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:nobody@puremagic.com">nobody@puremagic.com</a></td>
<td>NEW</td>
<td>---</td>
<td>std.functional.curry is not a real curry</td>
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<tr>
<td>19727</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:nobody@puremagic.com">nobody@puremagic.com</a></td>
<td>NEW</td>
<td>---</td>
<td>std.algorithm.endsWith fails to compile while startsWith succeeds</td>
</tr>
<tr>
<td>19525</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:nobody@puremagic.com">nobody@puremagic.com</a></td>
<td>NEW</td>
<td>---</td>
<td>Duration is not usable with zero-arg std.algorithm.sum</td>
</tr>
<tr>
<td>18333</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:nobody@puremagic.com">nobody@puremagic.com</a></td>
<td>NEW</td>
<td>---</td>
<td>binaryHeap documentation inadequately describes slice store invalidation</td>
</tr>
<tr>
<td>18446</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:nobody@puremagic.com">nobody@puremagic.com</a></td>
<td>NEW</td>
<td>---</td>
<td>Wrong curl onProgress examples</td>
</tr>
<tr>
<td>13825</td>
<td>D</td>
<td>phobos</td>
<td><a href="mailto:dechcaudron+issues.dlang@pm.me">dechcaudron+issues.dlang@pm.me</a></td>
<td>ASSI</td>
<td>---</td>
<td>relativePath not handling &quot;.&quot; and &quot;.&quot; correctly</td>
</tr>
</tbody>
</table>
Bugzilla

- Triage
  - INVALID?
  - WONTFIX?
  - WORKSFORME?
  - DUPLICATE?
  - REGRESSION?
- Tag (e.g bootcamp)
- Minimize

Workshop: CyberShadow vs Bugzilla S01
Bugzilla Anti-Patterns

shove 2018-06-11 16:07:50 UTC

Description [tag][reply] [-]

Excuse me, what's the reason for this phenomenon?

I have a project that can be compiled in the debug mode with the latest DMD 2.080-1, but I report errors in release mode.

// release:

$ dub -b release
...
Linking...
Undefined symbols for architecture x86_64:
"_D3std4conv__T7toCharsVii10TaVEQBd5asci10LetterCasei1TmZQBrFNanNbNiNfmZSQCsQCr__TQCpVii10TaVQCkii1TmZQBrFNanNbNiNfmZSQCsQCr" referenced from:

https://issues.dlang.org/show_bug.cgi?id=18971
Bugzilla - minimization with DustMite

- Bundled with the official releases
- Superb at reducing your code example
- Error message

dustmite . “dmd -c foo.d 2>&1 | grep -qF “<error msg>”

- Specific Segfault in DMD


Full doc: https://github.com/CyberShadow/DustMite/wiki
Fork & clone

1) Find issue/bug (-> issues.dlang.org)
2) Fork repositories on GitHub (-> github.com/dlang)
3) Clone locally

```bash
git clone git@github.com:<user>/dmd
git clone git@github.com:<user>/druntime
git clone git@github.com:<user>/phobos
```
Fixing your first issue: part II

4) Work on issue and (re)-build:
   DMD: ./src/build.d
   Druntime/Phobos: make -f {win32,win64,posix}.mak -j8

5) Run test(s)
   DMD: ./test/run.d compilable
   DRuntime/Phobos: dmd(dev) -unittest -main -run std/<mod.d>

6) Submit PR
# Hall of Frame on dlang.org

## Contributors (621)

A list of all the awesome people that made D possible.

The list of contributors is sorted alphabetically and automatically generated from commits to the dmd, druntime, phobos, dlang.org, installer, tools repositories. The list is updated daily.

<table>
<thead>
<tr>
<th>0xEAB</th>
<th>Dmitry</th>
<th>justanotheranonymoussuser</th>
<th>qchikara</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100110</td>
<td>Dmitry Atamanov</td>
<td>Justin C Calvarese</td>
<td>Quirin F. Schroll</td>
</tr>
<tr>
<td>Aaron Zeng</td>
<td>Dmitry Ds</td>
<td>Justin Holewinski</td>
<td>Radoslaw Rusiniak</td>
</tr>
<tr>
<td>abagal29</td>
<td>Dmitry Olshansky</td>
<td>Justin Whear</td>
<td>Radu Racaru</td>
</tr>
<tr>
<td>aceawan</td>
<td>Doado</td>
<td>k-hara</td>
<td>Rainer Schuetze</td>
</tr>
<tr>
<td>Adam D. Ruppe</td>
<td>Domingo Alvarez Duarte</td>
<td>Kai Nacke</td>
<td>ralphtandetzky</td>
</tr>
</tbody>
</table>

[https://dlang.org/foundation/contributors.html](https://dlang.org/foundation/contributors.html)
The wider D core ecosystem

- `dlang/tools`: bundled tools (e.g. rdmd)
- `dlang/dlang.org`: dlang.org website
- `dlang/dub`: package manager
- `dlang/dub-registry`: package registry (code.dlang.org)
- `dlang/dub-docs`: dub documentation (dub.pm)
- `dlang/dconf.org`: dconf.org website
- `dlang/ci`: CI scripts + project tester (buildkite.com/dlang)
- `dlang/dlang-bot`: D bot (e.g. issue references, auto-merge)
- `dlang/installer`: release scripts + install.sh
Continuous integrations (CIs)

- Auto-tester (by Brad Roberts) auto-tester.puremagic.com
- DAutoTest (by CyberShadow) dtest.dlang.io
- Buildkite: buildkite.com/dlang
- Other
  - Azure Pipelines (more Windows builds)
  - SemaphoreCI (bootstrapping tests)
  - CircleCI (static code analysis + code coverage)
  - Travis (unit tests)
  - Netlify (doc preview)
  - Heroku Pipelines (registry preview)
Commonly made mistakes

- Targeting the wrong branch (bugs -> stable)
- Trailing whitespace
- Not adhering to the D style (dlang.org/dstyle)
- No issue reference nor changelog entry
- Mixing refactoring with bug fixes
- Big pull requests
- Not fully covered code
git-tools

- pr_checkout: checkout PRs
- pr_send : PR submission
- merge_stable: stable -> master merge script
- pr_split: split up large PRs automatically
- pr_push (maintainers only): push to other PRs

https://github.com/wilzbach/git-tools

More advanced: https://github.com/CyberShadow/digger
My simple advices for newcomers

- Subscribe via GitHub notifications
- Join Slack or IRC
- Talk. Talk. Talk
- Don’t give up
Thanks!

More questions?

Slides: dlang.rocks/contribute
GSoC 2019

- 6 slots this year
- 12 mentors
- ~ 6,000$ (three months)
- More updates after DConf
- “Hot” coding period
  - 27 May - 26 August
GSoC 2019 projects

- Dataframes for D (Prateek Nayak)
- Header generation for C/C++ (Eduard Staniloiu)
- Independency of D from the C Standard Library (Stefanos Baziotis)
- Language Server Protocol in D (Manish Khurana)
- Persistent Data Structures for D (lesderid)
- Replace Runtime Hooks with Templates (Dan Printzell)
Other $$$ options

- Symmetry Autumn of Code (SAoC)
- Sponsored development (e.g. Mir)
- Open Source programs at work
- D Language Foundation student (Bucharest only)
- D Language community-sponsored projects (e.g. vscode-d)
- D Language Foundation “jobs”
- Bugfix bounty
- Official D blog post
Backup - GH fun I

https://github.com/dlang/phobos/commit/52110d98db4a3fe4087bc183b5e0b0883f846a28
What’s the most upvoted PR in the D ecosystem?
The winner is ...

https://github.com/dlang/dmd/pull/6680

---

Yes, this is for real!
What's #2?
Added interpolated strings. Syntax is to prefix any kind of string literal with the letter `i`, i.e.

```d
int a = 100;
writeln("a is \$\$(a)\$");
writeln("a + 56 = \$\$(a + 56)\$");
writeln("\$\$(a) \times \$\$(a) = \$\$(a* a)\$\$);
```

https://github.com/dlang/dmd/pull/7988
# Backup III

<table>
<thead>
<tr>
<th>Choice</th>
<th>Votes</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spaces</td>
<td>253</td>
<td>54%</td>
</tr>
<tr>
<td>Tabs</td>
<td>116</td>
<td>25%</td>
</tr>
<tr>
<td>Meh, I don't care</td>
<td>98</td>
<td>21%</td>
</tr>
</tbody>
</table>

467 out of 540 people answered this question
