What is reverse engineering?

*Reverse engineering is the process of extracting the knowledge or design blueprints from anything man-made.*

Reversing: Secrets of Reverse Engineering
Eldad Eilam

► In this course: Targeting (probably *obfuscated*) software
Process

- Phase I: Select a **topic**
- Phase II: Find **literature**
- Phase III: Do your **reading / experiments / programming**
- Phase IV: **Writing** phase I
- Phase V: **Peer review**
- Phase VI: **Writing** phase II
- Phase VII: Final **talks**

Exact schedule will be published once list of participants is known.
1. We will provide you with a list of our topics of interest
2. You will choose your own topic and:
   - Build a little tool (which the reverse engineering world has always needed)
   - Reproduce the results of an existing conference paper
   - Create your own Systematization of Knowledge (SoK) paper
3. In all cases, you will put your work into context of existing literature
   - e.g. at Usenix Security Symposium, S&P, ACM CCS, NDSS
Our Topics of Interest

- Advances in **Symbolic Execution**
- (Debugging) **Anti-Debugging Techniques**
- Obfuscation / Deobfuscation
- Virtual Machine Introspection (VMI)
- Techniques for **Decompiling** (Signature Generation / Reconstruction of Data Structures)
Process

- **Phase I**: Select a *topic*
- **Phase II**: Find *literature*
- **Phase III**: Do your *reading / experiments / programming*
- **Phase IV**: *Writing* phase I
- **Phase V**: *Peer review*
- **Phase VI**: *Writing* phase II
- **Phase VII**: Final *talks*

Exact schedule will be published once list of participants is known.
Registration

- Registration using the **matching system**
- **No** letter of motivation
- Solve a bunch of reverse engineering challenges instead (details on the course website). Submit your solution via e-mail no later than **12 February 2020, 23:59**.
- The flag format is `re20{...} this year.`
- Mail to: `re20-quals@sec.in.tum.de`
- **8 slots** (**FCFS** if I really have to, i.e. `solvecount > 8`)
Time and Place

When?  Monday (bi-weekly), 14:00 - 16:00
01.08.033
Talks at the end of the semester

Where?
Time and Place

When? Monday (bi-weekly), 14:00 - 16:00
01.08.033
Talks at the end of the semester

Where? Seminartagungsstätte Frauenchiemsee
Disclaimer: Only if participants show interest!
Fallback: Room 01.08.033
Grading

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 %</td>
<td>Final Paper (Content, Style, Language, Scope, ...)</td>
</tr>
<tr>
<td>15 %</td>
<td>Experiments / Work on your tool</td>
</tr>
<tr>
<td>10 %</td>
<td>Review</td>
</tr>
<tr>
<td>30 %</td>
<td>Presentation (Content, Style, Timeliness, each 10%)</td>
</tr>
<tr>
<td>5 %</td>
<td>Discussion</td>
</tr>
</tbody>
</table>

Σ 100 % Total
Questions?

re20-quals@sec.in.tum.de

Qualification task download (online today, 4pm):

https://www.sec.in.tum.de/i20/teaching/ss2020/reverse-engineering