Informal education in SE among the Sarajevo IT business community

Novica Nosović, ETF, Sarajevo

15th DAAD Workshop “Software Engineering Education and Reverse Engineering”
Bohinj, Slovenia, 23th – 30th August 2015
Problem statement

- Foreign IT businesses want to outsource
- Need for startup IT companies with 100+ software engineers (!!!)
- Traditional BH education system in IT can not produce enough SEs...
IT Experts at Work
BIT Camp

BIT Alliance

- Atlantbh,
- Authority Partners,
- DevLogic,
- GreenRiverMedia,
- PING
- ZIRA
BIT Camp Sponsors

- EBRD
- Swiss government
- IUS
- MarketMakers
Summer 2014

- 800 candidates applied
- On-line evaluation (IQ-test) => 100
- CV/Motivation/Interview (Oct.) => final 25
- One group - 6 month of intensive education:
  - Focus on SW engineering
  - Specially Java/Android programming skills
Ocupation of candidates

From all walks of life:

- Former painter
- Economist
- Polithologist
- Mathematician
- Receptionist
- Mechanical engineer
- ...

[144x458]
The cache coherence problem

- Intuitive behavior for memory system: reading value at address X should return the last value written at address X by any processor.

- Coherence problem exists because there is both global storage (main memory) and per-processor local storage (processor caches) implementing the abstraction of a single shared address space.
The image shows a comparison of the distribution of 'Fag Hags' and 'Homophobic' across Europe in 2015 and 2016.

- In 2015 (left side), countries are colored in red, indicating 'Fag Hags' and dark gray for 'Homophobic'.
- In 2016 (right side), countries are colored in yellow for 'Old Europe' and orange for 'New Europe'.
17 People who work 21 days per year
People who live 21 days per year

18 People who need a plumber
People who can fix their own sink
Spring 2015

- Another 1400 candidates applied
- On-line evaluation (IQ-test) => 200
- CV/Motivation/Interview => final 50
- Two groups focusing on
  - Microsoft .NET and
  - Java/Android
2015 Coding Bootcamp Survey

*Coding Bootcamps Expected to Graduate 16,056 Students and Grow by 138% in 2015, Based on Responses from 94% of US & Canadian Schools*

By Liz Eggleston
June 8, 2015

Key Findings

Coding bootcamps continue to flourish as an industry that will graduate over 16,000 students in 2015. Course Report found:

- In 2015, the bootcamp market will grow by 2.4x, to an estimated 16,056 graduates in 2015, up from 6,740 in 2014.
- As a point of comparison, we estimate that there were 48,700 undergraduate computer science graduates from accredited US universities in 2014.
- Our [2014 Market Sizing Study](#) projected the 2014 market size to be 5,987 graduates. Our 2015 study finds that the actual market size in 2014 was 6,740 graduates. Thus our 2014 report underestimated year-over-year growth by 11%.
- Average tuition price of qualifying courses is $11,063, with an average program length of 10.8 weeks.
- We estimate that tuition revenue from qualifying US schools will be $172M in 2015 (up from $52M in 2014), excluding scholarships.
- Ruby is the most common teaching language, used in 35% of courses. Bootcamps will graduate 9,748 Ruby developers in 2015. While Ruby remains popular, JavaScript has gained popularity in the past year, now accounting for 21% of courses.
# US Market Growth Rate

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 graduates, self-reported</td>
<td>6,740</td>
</tr>
<tr>
<td>2015 graduates, self-reported</td>
<td>16,056</td>
</tr>
<tr>
<td>Estimated growth rate</td>
<td>138%</td>
</tr>
</tbody>
</table>
Tuition

- ranges from free to $21,000
- average tuition of $11,063
- courses range from 4 to 28 weeks
- most courses are in the 9-12 week range
- average of 10.8 weeks
# Tuition Range

<table>
<thead>
<tr>
<th>Tuition</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $5,000</td>
<td>6.35%</td>
</tr>
<tr>
<td>$5,000 - $10,000</td>
<td>55.56%</td>
</tr>
<tr>
<td>Greater than $10,000</td>
<td>38.10%</td>
</tr>
</tbody>
</table>
Top Teaching Language

- Ruby: 34.9%
- JavaScript: 20.9%
- Python: 14%
- PHP: 10.5%
- Java: 9.3%
- .NET: 8.1%
- Android: 8.1%
- iOS: 8.1%
US Cities with Most Bootcamps

<table>
<thead>
<tr>
<th>city</th>
<th># bootcamps</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>12</td>
</tr>
<tr>
<td>New York</td>
<td>9</td>
</tr>
<tr>
<td>Seattle</td>
<td>8</td>
</tr>
<tr>
<td>Portland</td>
<td>6</td>
</tr>
<tr>
<td>Chicago</td>
<td>6</td>
</tr>
</tbody>
</table>
The Hackathon

The Lesbians Who Tech Hackathon follows the Lesbians Who Tech Summit, and is the place for tech women to connect and work together.

Most hackathons are mostly male. The Lesbians Who Tech Hackathon is the first lesbian-focused
Conclusions

- all the “campers” got a job in the alliance companies!
- first feedback is yet to be seen