Cloud Based IT Lab

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Issues with building labs

Space

- Inefficient use of lab space

Cost

- Hardware investment
- Software license

Management

- Lab Technician
- Hardware lost
- Maintenance
- Depreciation

Any encounter this problem...

- I need more machines
- I need more storage
- I need software on my machines quickly
- I need software licenses to educate students
- I need a way to **effective way** to evaluate students

Why stay at the problems?

Let's go Cloud-based ....
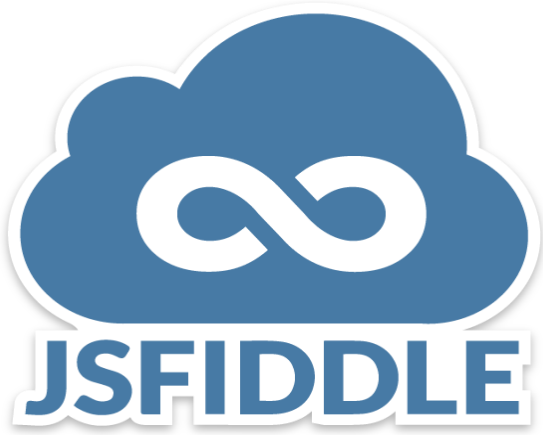
Cloud-based computer labs

- Organizations around the world start replacing conventional labs.

- Reduce training expenses.

- Allow instructors to remotely monitor the progress of all students.

- Enable students to use the facilities 24/7.

Outline

- Online IDE
- Online Collaboration
- Cloud based Lab with Openshift
- Cloud based Lab from Microsoft
- Cloud based Lab from Google
- Implementation Process
- Other possibilities

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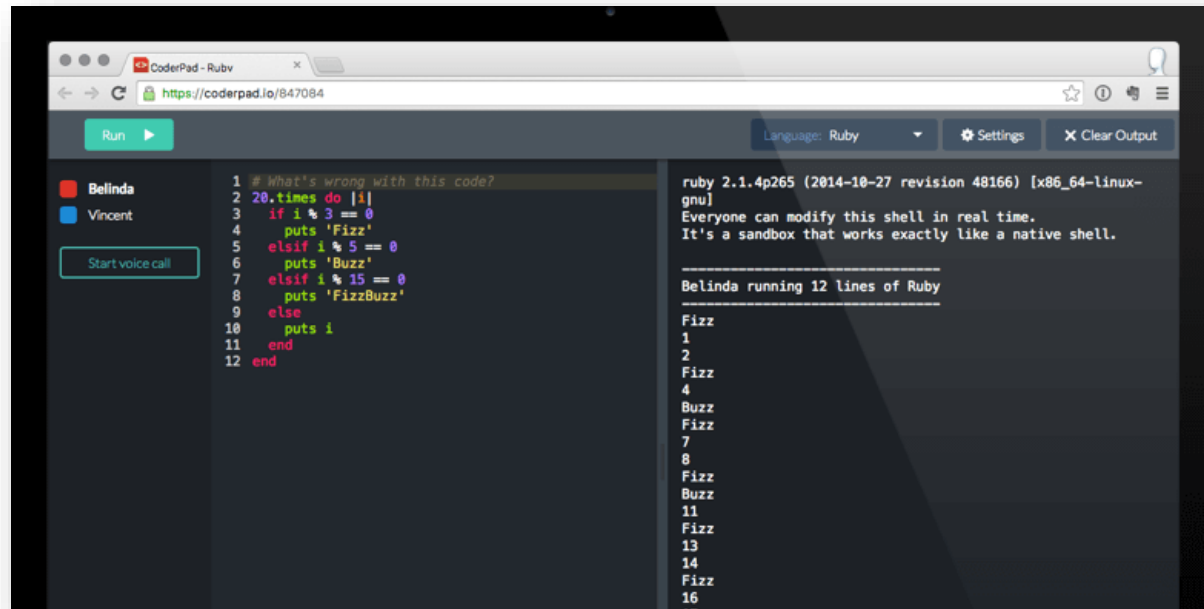
JSFIDDLE

- Online programming IDE and experiment ground for coding
- Encourage interactivity among students and teacher
- Submitting link of the work

Website
- https://jsfiddle.net
- https://ideone.com/
- https://coderpad.io/

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- Group project
- Agile Process
- Teacher grades students
  on individual effort
- Able to monitor progress
  anytime
- Project extensibility

Website :
https://github.com
https://trello.com

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OPENSHIFT®
by Red Hat®

- Platform-as-a-Service (PaaS) from Redhat
  - Many ready-to-use software suites
- Remote shell access : ssh, rsync
- Git repository
- Case: LAMP stack + phpmyadmin
- Deploy WordPress in a few clicks

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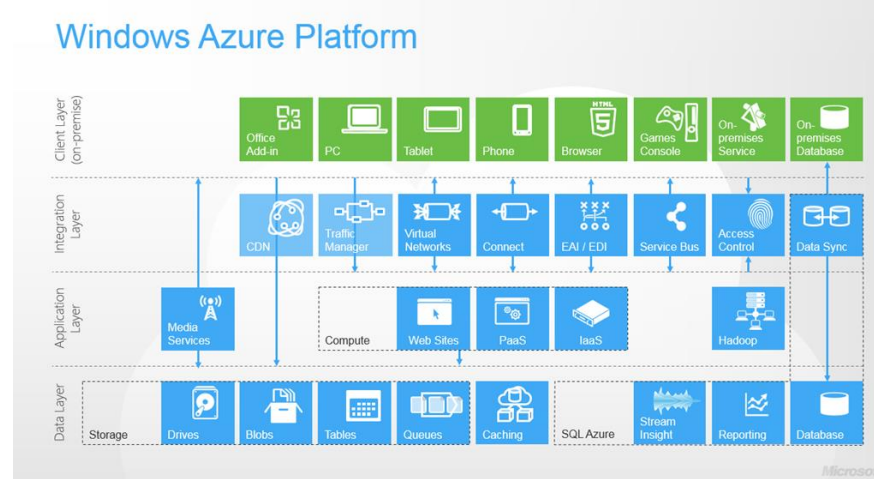- Other possibilities

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- Infra as-service, platform as-service and application as service

- Window Server, Ubuntu, etc.

- Web services

- BizSpark

Website:
> https://portal.azure.com
> Data Minging Experiment

- Microsoft Educator Grant Program :

  Azure (Currently discontinue as of Aug 2016)

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Google Cloud Platform

Hosting + Compute | Storage | Big Data | Services

- Allow free tier using Platform as-service and Application as-service

- Individual free account requires credit card registration

- Academic grant is available

Website:
https://cloud.google.com/products/
https://developers.google.com/apps-script/

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Process

- Student works locally if possible
  - Via emulator / IDE
- Post online for help from teacher and classmates
- Rework for final submission
- Submit link for evaluation
- Evaluated and graded

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Other possibilities

- Cloud based network labs

- Virtual class based collaboration

- Research
  - Intensive computation application
  - Large storage processing

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Thank You