COMP-308 Winter 2018

Instructor:

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IDC Research top ten 2018 predictions

❑ By 2021, at least 50 percent of global GDP will be **digitized**

❑ By 2020, 60 percent of all enterprises will have fully articulated an **organization-wide digital transformation strategy**.

❑ By 2021, spend on **cloud services and cloud enabling hardware, software and services** doubles to over $530 billion, leveraging the diversifying cloud environment that is 20 percent at the edge, over 15 percent specialized compute, and over 90 percent multi-cloud.

❑ By 2019, **40 percent of digital transformation initiatives will use AI services**; by 2021, 75 percent of commercial enterprise apps will use AI, over 90 percent consumers interact with customer support **bots**, and over 50 percent of new industrial robots will leverage AI.

❑ By 2021, enterprise apps will shift toward **hyper-agile architectures**, with 80 percent of application development on cloud platforms using **microservices** and **functions**, and over 95 percent of new microservices deployed in **containers**.

http://www.digitalistmag.com/digital-economy/2017/11/17/idc-2018-predictions-if-youre-not-in-cloud-youre-isolated-from-innovation-05487509

IDC Research top ten 2018 predictions

- ❑ By 2020, **human-digital (HD) interfaces** will diversify, as 25 percent of field-service techs and over 25 percent of info-workers use AR, nearly 50 percent of new mobile apps use voice as a primary interface, and 50 percent of consumer-facing Global 2000 companies use biometric sensors to personalize experiences.

- ❑ By 2021, at least 25 percent of Global 2000 companies will use **blockchain services as a foundation for digital trust at scale**; by 2020, 25 percent of top global transaction banks, nearly 30 percent manufacturers and retailers, and 20 percent of healthcare organizations will use blockchain networks in production.

- ❑ By 2020, 90 percent of large enterprises will generate **revenue from data-as-a-service**, selling raw data, derived metrics, insights, and recommendations — up from nearly 50 percent in 2017.

- ❑ Improvements in **simple ("low-/no-code") development tools** will dramatically expand the number of non-tech developers over the next 36 months; by 2021, these non-traditional tech developers will build 20 percent of business applications and 30 percent new application features (60 percent by 2027).

- ❑ By 2021, more than half of Global 2000 companies will see an average one-third of their **digital services interactions come through their open API ecosystems**, up from virtually zero percent in 2017, amplifying their digital reach far beyond own customer interactions.

http://www.digitalistmag.com/digital-economy/2017/11/17/idc-2018-predictions-if-youre-not-in-cloud-youre-isolated-from-innovation-05487509

ICTC 2021 Outlook

Five Key Transformational Technologies:

1. AI
2. Virtual and Augmented Reality
3. 5G Mobile
4. 3D Printing
5. Blockchain

https://www.ictc-ctic.ca/wp-content/uploads/2017/04/ICTC_Outlook-2021.pdf

State of new technologies

❑ Front-end JavaScript frameworks

  ➢ React, Angular, Vue

❑ Back-end JavaScript frameworks

  ➢ Express, Koa, Meteor

❑ Mobile/desktop frameworks

  ➢ Native apps, progressive web apps

  ➢ Electron

  ➢ React Native

❑ JavaScript build tools

  ➢ NPM, Webpack, Gulp

❑ JavaScript testing tools

  ➢ Mocha, Jasmine

❑ State management tools

  ➢ REST, Redux, Firebase, GraphQL

❑ Microservices and Serverless computing

10 most in-demand tech skills, based on Indeed job postings

1. Java (appears in 30% of tech job postings)
2. Agile (27%)
3. Javascript (26%)
4. .NET (19%)
5. Python (15%)
6. Microsoft SQL Server (12%)
7. Oracle (12%)
8. C or C++ (12%)
9. Git (11%)
10. AWS (11%)

https://www.forbes.com/sites/jeffkauflin/2017/12/08/the-top-10-tech-skills-employers-are-hiring-for/#11eb5b2130a7

Emerging Technologies – Important Topics

1. Modern Server-side technologies

2. Modern Client-side technologies

3. Modern Data Technologies

4. Emerging Cloud Technologies

Refer to Course Outline

Evaluation

❑ **5 Lab Assignments……………………………45%**

❑ **Hands-on test……………………………25%**

❑ **Project…………………………………20%**

❑ **In-Class Interactive Exercises……………..10%**

Evaluation

❑ Submit Assignments **on time**

❑ **Most Assignments will be finished in scheduled lab session**

❑ **No second chance** if you copy the assignment from other people

The textbook and other materials

❑ Amos Haviv, MEAN Web Development, Second Edition, Pact Publishing, 2016, ISBN: 978-1783983285

❑ **Online Resource(s):**

➢ https://nodejs.org/en/docs/

➢ https://docs.mongodb.org/getting-started/shell/

➢ http://expressjs.com/en/4x/api.html

➢ https://angular.io/docs

➢ https://www.visualstudio.com/vs/node-js/

➢ https://reactjs.org/

➢ https://azure.microsoft.com/en-ca/free/

➢ https://cloud.google.com/docs/

➢ https://aws.amazon.com/free/

➢ Weekly links on eCentennial

❑ Lecture Slides

❑ Class Examples

❑ Textbook examples

Rules

❑ **MUST be in class on time**

❑ **Have <u>VS 2017 latest updates </u>ready**

❑ **Have Lectures slides ready**

❑ **Have class examples downloaded from eCentennial ready for use**

❑ **Cell phones in silent mode**

Honesty Code

❑ **No Cheating**

❑ **No Lying**

❑ **No plagiarism**

❑ **Otherwise: very serious consequences**

Collaboration

❑ **Assignment discussions: encouraged**
  ➢ **However:**
    ▪ **Implement your own solutions and understand it fully – I will ask you to explain the code.**

❑ **Can use book(s), Lecture slides, Internet)**
  ➢ **However:**
    ▪ **The use of the above items is just for consultation – NEVER COPY from them.**

❑ **NEVER lend/borrow solutions of assignments**

Assignments

❑ **Justify your solutions during demonstration**

❑ **Unless announced otherwise:**
 ➢ **24 hours late – 80%**

Group Project requirements

❑ The purpose of this project is to:

  ➢ Design and code **web apps using emerging Web Frameworks**

  ➢ Build a **Rest API** using an emerging web framework

  ➢ Build an **MVC front end** that utilizes the Rest API

    ▪ Some choices for front end frameworks include:

      • **Angular**

      • **React.js**

      • **Vue.js**

  ➢ Apply **responsive design principles**

❑ **Project requirements** will be provided in Week 6
❑ **Project Presentation** in Week 13

Questions

References

❑ COMP-308 Course Outline