Managed Runtime Systems

Course Introduction

Foivos Zakkak

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Who am I?

My name is Foivos Zakkak

I am a Post Doctoral Research Associate
at the University of Manchester

I am working on managed runtime systems

Who are You?

Name

CS Interests

Undergrad or Postgrad?

Hints!

Feel free to interrupt if you don't understand something

Please ask. There are no stupid questions!

The slides are already online

What Is This Course About?

Course Goal

To introduce you to the world of managed runtime systems!

Execution of Managed Programming Languages

Java	Scala	Ruby
JavaScript	Python	Groovy

...

Just in Time (JIT) Compilation

The process of generating machine code by compiling code during execution

Automatic Memory Management

The art of cleaning up
other people's messes

Exhaustive and Historical Coverage

We will mostly focus on the
state-of-the-art

System Virtual Machines

We will only talk about language Virtual Machines
(a.k.a. Managed Runtime Systems)

Compilers

We will only talk about JIT compilation

We won't cover compiler theory exhaustively

The Course's Workload

4 hours of lectures per week

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7 reading assignments + summary

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1 project + presentation

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Work solo or in pairs of two

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Project proposal should answer the following:

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1. What do you find interesting in the project?

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Project proposal should answer the following:

1. What do you find interesting in the project?
2. What do you expect to learn through this project implementation?

Project

Work solo or in pairs of two

Focus on JIT compilation or Garbage Collection on the Maxine VM (alternative interesting topics are also welcome)

Project proposal should answer the following:

1. What do you find interesting in the project?
2. What do you expect to learn through this project implementation?
3. How are you going to demonstrate the success of your project?

Grading

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Class Participation 15%

Grading

Class Participation	15%
Reading assignments	35%

Grading

Class Participation	15%
Reading assignments	35%
Project	50%

Grading

Class Participation	15%
Reading assignments	35%
Project	50%
Total	100%

Acknowledgments

I would like to thank Mario Wolczko for sharing his material of a relevant course presented in UC Berkeley.

Note that you can also watch Mario's lectures on