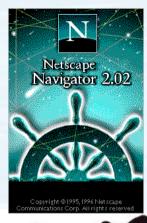# *Introduction to Python & Django*

Udi h Bauman, Tikal Knowledge

Personal background

1994 -

1997 -

1999 -

2002 -

2004 -

2005 -

Also in 2004

- Didn't listen to smart people :(
  - Chief architect of a large innovative company told me to dump Java & switch to Python
    - Citing Paul Graham saying that Java is a dead leaf in the evolutionary tree of programming languages

2006 - python & django

- Smiling ever since

- "People who've made the switch to dynamic languages such as Python seem much, much happier."

> – Bruce Eckel, Author of "Thinking in Java" & "Thinking in Python"

Python, WTF?

- Isn't this some scripting language for system administrators & the like?

What does it have to do with us – serious Java & .Net programmers???

Python, WTF?

- Python is a modern programming language.
  - Pure OOP (Object Oriented Programming)
  - Pure AOP (Aspect Oriented Programming)
  - Pure FP (Functional Programming)

Python, WTF?

- Some companies & organization attract the best programmers in the world

- E.g.

Python, WTF?

- Turns out that the programming language of choice in most of these places is Python

- E.g.

Quotes

- "Python has been an important part of Google since the beginning, and remains so as the system grows and evolves"

  – Peter Norvig, Director of Research, Google

Quotes

- "Python is fast enough for our site and allows us to produce maintainable features in record times, with a minimum of developers"

    – Cuong Do, Engineering Manager, YouTube
    (Watch the video: http://bit.ly/youtube_scalability)

The reason, IMHO

- Python offers the optimal combination of Power & Simplicity
    - perfect for coding Business Logic
    - perfect for any software at any size & complexity

Python demo

- Arithmetic's & Strings
- Introspection
- Formatting
- Lists, Tuples & Dictionaries
- Blocks, If & loops

- Functions
- Doctest
- Classes
- List comprehension
- I/O

Demo screenshots

Demo screenshots

Python libraries

- Real wealth of libraries
- The Python Package Index (PyPi) lists 7.7K
- Cover almost any functionality & need
- Very easy to install
- Very intuitive
    - Work just as you expect them to work

Python summary

- Python has many advantages, but the bottom line is:
    - Happy management
    - Happy staff
    - Happy customers

    - Don't take my word – Google what people say about their experience with Python & tell me if you find any counter-example

Python summary

- What's in it for us?

  - Need implement a new complex system or service?

  - Prototype it in Python

  - Then realize that it's ready for usage

Introduction to Django

- Leading Python Web Framework
- Good for any service, no just Web apps

Django slogan

- The Web framework for Perfectionists with deadlines

Perfectionists?

- Emphasizing clean MVC design
- Django apps are reusable by design
- Based on Best-Practices
- Extremely easy to unit-test

Deadlines?

- Growned in the Online Newspapers industry

    - Designed to make development fast

        - E.g., automatic admin interface

- Automates repetitive tasks

- Leading technology in new US Startups, according to recent polls

Quotes

- "After an extensive trade study, we selected Django as the first and primary application environment for the Nebula Cloud. "

  – NASA,
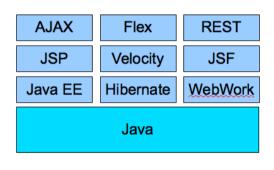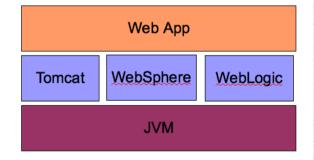   http://nebula.nasa.gov/services/framework

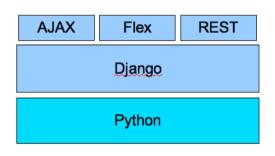# Model & basis of

Main features

- ORM
- Admin
- URL's design
- Auth
- Template engine
- Integrated GIS

- Reusable apps
- Unit testing
- Middleware
- Caching
- I18N

Comparison with Java stacks
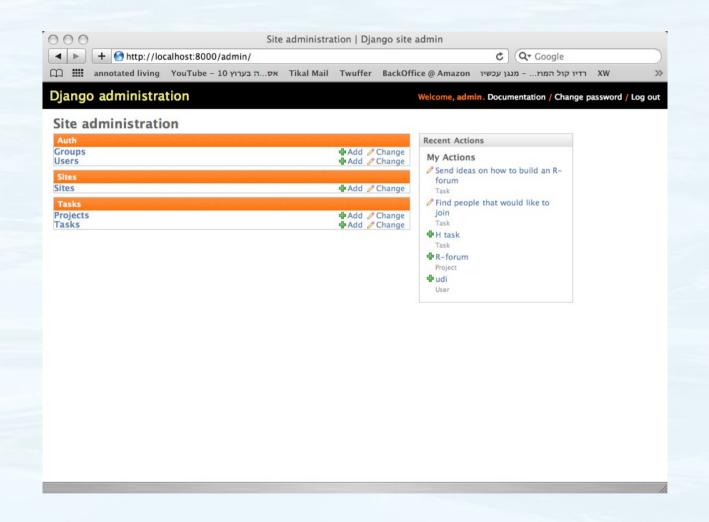
Lots of reusable apps

- Hundreds of pluggable apps exist, for almost any purpose

- Very easy to plug into your project

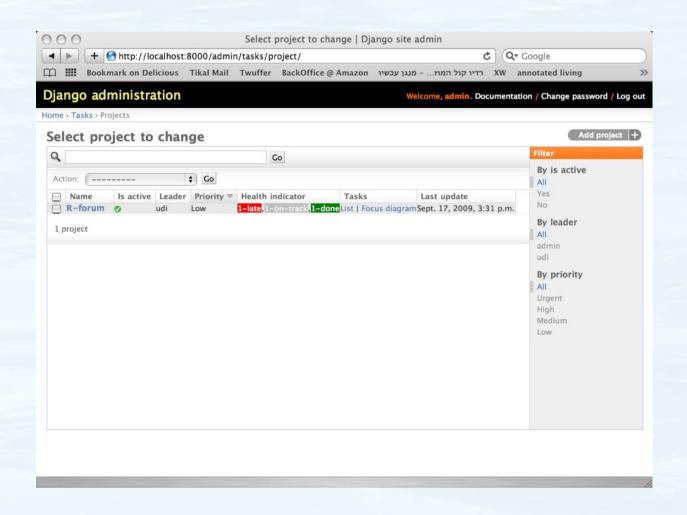   - Adds complete functionality, integrated with your application

How do you develop/run?

- I use the Eclipse-based Aptana IDE

- I run Django on LAMP (Linux, Apache, MySQL/Postgres, Python) or AppEngine

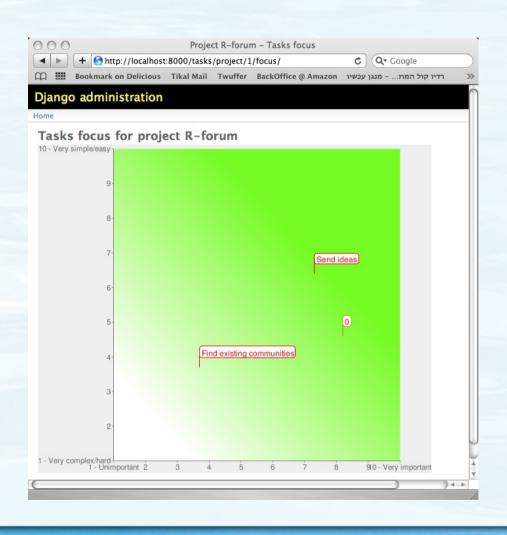 - You can also deploy Django as .war on any Java Application Server

Django demo

- Let's write a small Django app for project management

    - Manage projects & tasks

    - Manage users & roles

    - Rich UI (search, filters, recent actions list)

    - Project health indicators

    - Tasks focus chart

Demo screenshots

Demo screenshots

Demo screenshots

Demo screenshots

Java/.Net vs. Django

- Think how much code it would take in Java or .Net
    - Common
    - BI
    - DAL
    - Basic
    - Logic
    - API

Java/.Net vs. Django

- Damn, Django does the same thing without all the complexity & verbosity

- How much time & cognitive effort it takes to learn, understand & modify it?

Django summary

- ## What's in it for us?
  - ### Nothing
    - you can afford developing systems using 10 developers for several weeks
    - instead of 1-2 developers for several days :)

Django summary

- Seriously:
  - Need implement a new system?
  - Prototype it in Django in a few hours
  - Then realize that it's ready for production