Course Web Site

http://www.eli.sdsu.edu/index.html

on-line courses

CS 580 Spring 06
Lectures with Ink

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In class notations
Input from students on-line
Languages

Java
Smalltalk
Ruby
C#
Knowing a Language

Basic syntax of the language

Core API
    No one knows the entire API of either language
    You should have good grasp of the common or core API
    Collections, Files, Exceptions, Streams

Language culture - Ways of doing things in each language

    Java Doc
    Searching the API
    Compiling/running code
    Using Smalltalk browsers
    Naming conventions

Object-oriented programming
Client

Application that initiates peer-to-peer communication
Translate user requests into requests for data from server via protocol
GUI often used to interact with user

Server

Any program that waits for incoming communication requests from a client
Extracts requested information from data and return to client

Common Issues

• Authentication
• Authorization
• Data Security
• Privacy
• Protection
• Concurrency
What Client-Server Requires of a Programmer

Designing robust protocols
Network programming
Designing usable computer-human interfaces
Good documentation skills
Good debugging skills
Understand the information flow of the company/customer
Mastery of concurrency
Multi-platform development
Database programming
Security
## Names

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<table>
<thead>
<tr>
<th>Item</th>
<th>Java</th>
<th>Smalltalk</th>
<th>C#</th>
<th>Ruby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>PascalCase</td>
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<td>PascalCase</td>
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<tr>
<td>Method</td>
<td>camelCase</td>
<td>camelCase</td>
<td>PascalCase</td>
<td>foo_bar</td>
</tr>
<tr>
<td>Field</td>
<td>camelCase</td>
<td>camelCase</td>
<td>CamelCase</td>
<td>@foo_bar</td>
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<td>Parameter</td>
<td>camelCase</td>
<td>camelCase</td>
<td>camelCase</td>
<td>foo_bar</td>
</tr>
<tr>
<td>Local Variable</td>
<td>camelCase</td>
<td>camelCase</td>
<td>camelCase</td>
<td>foo_bar</td>
</tr>
</tbody>
</table>
Comments in Code

\[ x = x + 1 \quad \text{//Add one to } x \]
for i := 1 to Num do
    MeetsCriteria[ i ] := True;
for  i := 1 to Num / 2  do begin
    j := i + i;
    while ( j <= Num ) do begin
        MeetsCriteria[ j ] := False;
        j := j + i;
    end;
for i := 1 to Mun do
    if MeetsCriteria[ i ] then
        writeln( i, ' meets criteria ' );
What does this do?

for PrimeCandidate:= 1 to Num do
  IsPrime[ PrimeCandidate] := True;

for  Factor:= 1 to Num / 2  do begin
  FactorableNumber := Factor + Factor ;
  while ( FactorableNumber <= Num ) do begin
    IsPrime[ FactorableNumber ] := False;
    FactorableNumber := FactorableNumber + Factor ;
  end;
end;

for PrimeCandidate:= 1 to Num do
  if IsPrime[ PrimeCandidate] then
    writeln( PrimeCandidate, ' is Prime ' );
CVS

Concurrent Versions System

 Allows multiple users to work on code

 Allows access from multiple machines

References

http://www.cvshome.org/
http://www.cvshome.org/docs/manual/
http://www.tortoisecvs.org/
  Windows client

http://www-rohan.sdsu.edu/~stremler/CS530/AS1/remote_cvs.html
  Stremler’s remote CVS on Rohan page

http://www.eli.sdsu.edu/courses/spring05/cs580/notes/cvs/cvs.html