



Ho Chi Minh City University of Technology
Faculty of Computer Science and Engineering

Introduction

to Computer Programming

Undergraduate Course

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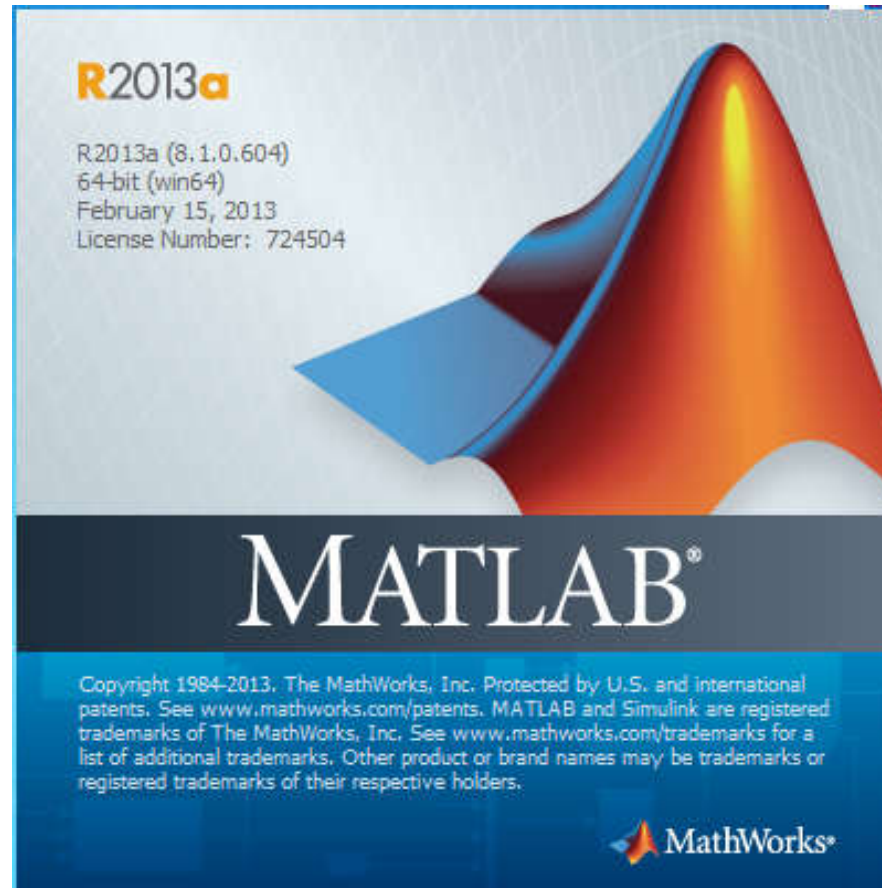
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Introduction

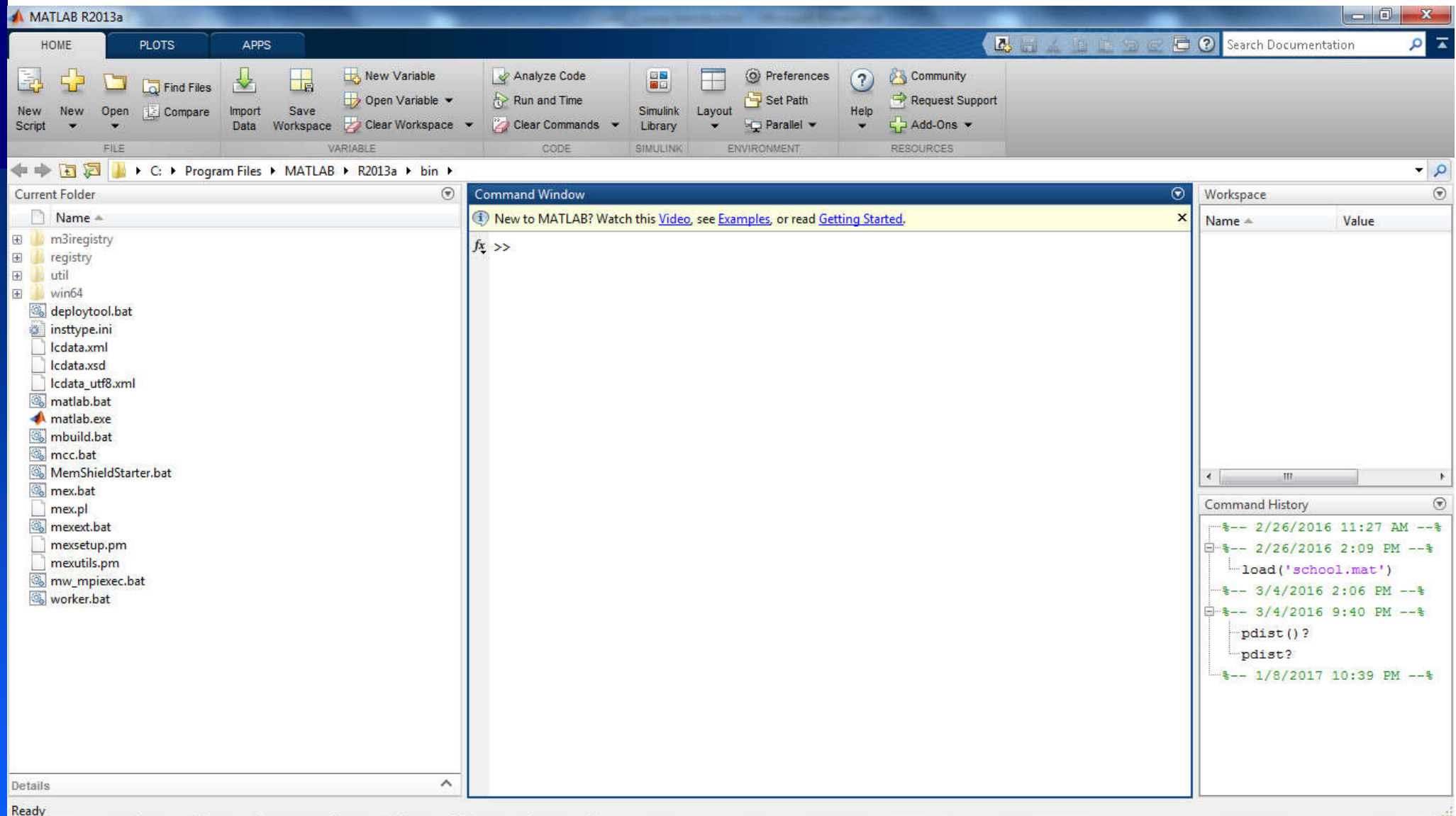
- Course ID = CO1003
- Introduction to Computer Programming
 - Programming language: C
- Nhập môn Lập trình
 - Ngôn ngữ lập trình: C

Introduction



MatLab (www.mathworks.com)

Introduction



Introduction

The screenshot shows the Oracle Database 11g Release 2 (11.2) Documentation Library website. The page is titled "Oracle Database Documentation Library" and shows various sections for DBA Essentials, Developer Essentials, New to Oracle Database 11g, Supporting Documentation, Upgrade Information, Tips, Mobile Formats Available, and Online Resources.

Oracle Database Documentation Library
11g Release 2 (11.2)

DBA Essentials
Manage all aspects of your Oracle databases with the Enterprise Manager GUI.

2 Day + Data Replication and Integration Guide	HTML	PDF
2 Day + Data Warehousing Guide	HTML	PDF
2 Day + Performance Tuning Guide	HTML	PDF
2 Day + Real Application Clusters Guide	HTML	PDF
2 Day + Security Guide	HTML	PDF
2 Day DBA	HTML	PDF

New to Oracle Database 11g
Information you need for the latest release.

Master Glossary	HTML	
New Features Guide	HTML	PDF

Supporting Documentation
Supporting documentation provides in-depth conceptual, task-based and reference material beyond the scope of the *2 Day DBA*, *2 Day Developer* and *2 Day +* Guides.

Administrator's Guide	HTML	PDF
Concepts	HTML	PDF
Error Messages	HTML	
Performance Tuning Guide	HTML	PDF
Reference	HTML	PDF
SQL Language Reference	HTML	PDF
Readme	HTML	PDF

Upgrade Information
If you are familiar with earlier Oracle releases and are moving to Oracle Database 11g, these books describe the new features, and explain how to upgrade your database.

Upgrade Guide	HTML	PDF
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Developer Essentials
Build applications around Oracle databases using the languages and platforms of your choice.

2 Day Developer's Guide	HTML	PDF
2 Day + .NET Developer's Guide for Microsoft Windows	HTML	PDF
Data Provider for .NET Developer's Guide	HTML	PDF
2 Day + Application Express Developer's Guide	HTML	PDF
2 Day + Java Developer's Guide	HTML	PDF
2 Day + PHP Developer's Guide	HTML	PDF

Tips
Each page in the library lists the essential books in a specific topic area first. The *2 Day* and *2 Day +* guides cover the most essential tasks and concepts in a specific topic area. The remainder of the page lists books that contain more detailed or advanced information.

Mobile Formats Available
Several documents are available in Mobipocket and ePub formats for convenient mobile viewing. Links to these formats are available from the upper-right corner of associated HTML pages.

Online Resources
[Oracle Technology Network](#)

- [Getting Started with Oracle Database](#)
- [Getting Started for Database Administrators](#)
- [Getting Started for Developers](#)

Oracle Database (www.oracle.com). Oracle Version 3, released in 1983, was the first relational database to run on mainframes, minicomputers, and PCs. The database was written in C, enabling the database to be ported to multiple platforms.

Introduction

NetBeans IDE 8.0

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Search (Ctrl+I)

Source

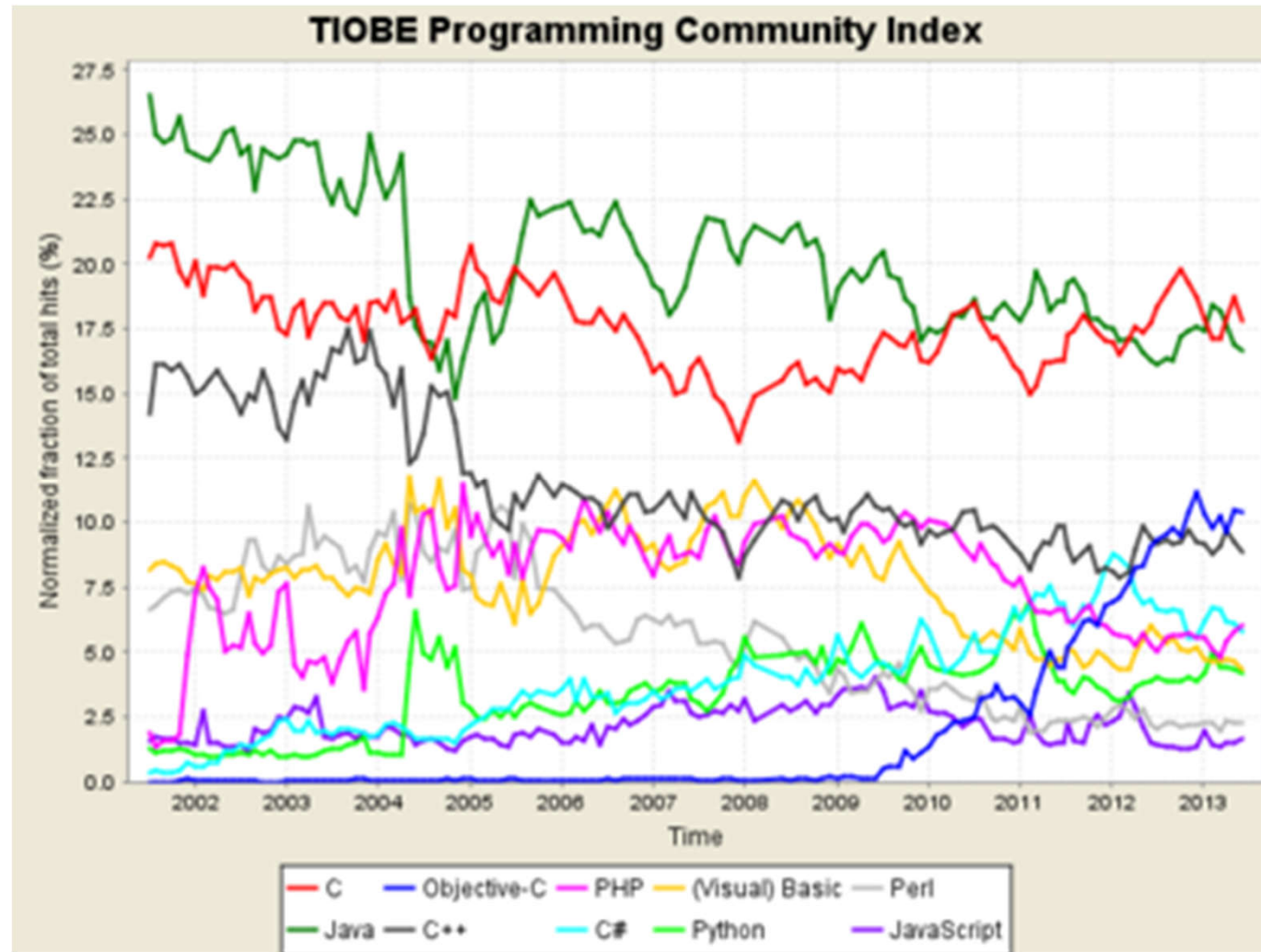
```
1 // Copyright 2013 Google Inc. All Rights Reserved.
2 //
3 // Licensed under the Apache License, Version 2.0 (the "License");
4 // you may not use this file except in compliance with the License.
5 // You may obtain a copy of the License at
6 //
7 // http://www.apache.org/licenses/LICENSE-2.0
8 //
9 // Unless required by applicable law or agreed to in writing, software
10 // distributed under the License is distributed on an "AS IS" BASIS,
11 // WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
12 // See the License for the specific language governing permissions and
13 // limitations under
14
15 #include <stdio.h>
16 #include <stdlib.h>
17 #include <string.h>
18 #include <math.h>
19 #include <pthread.h>
20
21 #define MAX_STRING 10
22 #define EXP_TABLE_SIZE 1000000
23 #define MAX_EXP 6
24 #define MAX_SENTENCE_SIZE 1000000
25 #define MAX_CODE_LENGTH 40
26
27 const int vocab_hash = 1000000;
28
29 typedef float real;
30
31 struct vocab_word {
32     long long cn;
33     int *point;
```

Handwritten Table:

	King	Queen	Woman	Princess	...
Royalty	0.99	0.99	0.02	0.98	
Masculinity	0.99	0.05	0.01	0.02	
Femininity	0.05	0.93	0.999	0.94	
Age	0.7	0.6	0.5	0.1	
...					

Tools for computing distributed representation of words
(<https://code.google.com/p/word2vec/>)

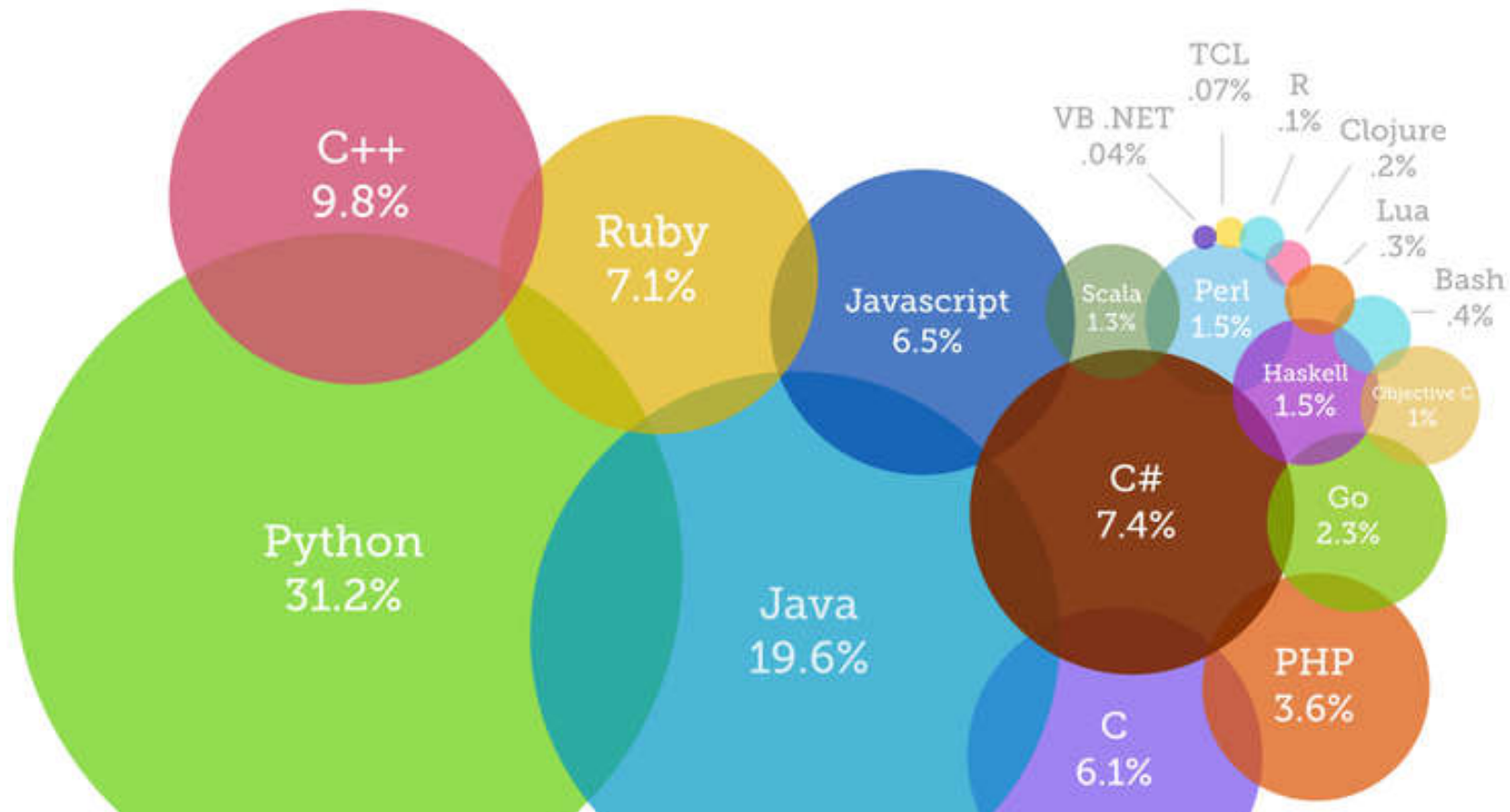
Introduction



The TIOBE index graph from 2002 to 2015, showing a comparison of the popularity of various programming languages

Introduction

Most Popular Coding Languages of 2015



"You can increase your knowledge by learning about C this year that is unique programming language. Being the oldest, it should be learnt firstly when you start up, and it is mainly applied in forming different softwares." - 10 Best Programming Languages of 2015 You Should Know – www.devsaran.com

Introduction

- ❑ Compilers, libraries and interpreters of other programming languages are often implemented in C.
 - The primary implementations of Python, Perl 5 and PHP
- ❑ The GNU Multiple Precision Arithmetic Library, the GNU Scientific Library, Mathematica, and MATLAB are completely or partially written in C.
- ❑ And the others such as operating systems, embedded system applications, ...

Can we create wonderful programs
using the C language? Why not?!

YES

Course Objectives

- ▣ A comprehensive introductory course for the students who have no background in computer programming

and thus, the course ...

- ▣ Provides the students with basic knowledge on computer and computer programming with C
- ▣ Helps the students practice programming skills for using C language

Course Learning Outcomes

Upon completing the course successfully, the student is able to:

- ❑ Have comprehensive understanding about computer, computer programming, programming's tasks, and a typical C program
- ❑ Use data types supported in C
- ❑ Describe and implement algorithms
- ❑ Organize large problems written in C
- ❑ Use array data type
- ❑ Use pointer data type
- ❑ Use file data type and other combination skills

Course Content

- ❑ C.1. Introduction to Computers and Programming
- ❑ C.2. C Program Structure and its Components
- ❑ C.3. Variables and Basic Data Types
- ❑ C.4. Selection Statements
- ❑ C.5. Repetition Statements
- ❑ C.6. Functions
- ❑ C.7. Arrays
- ❑ C.8. Pointers
- ❑ C.9. File Processing

Course Content – Timetable

- ❑ C.1. Introduction to Computers and Programming (p. 1)
- ❑ C.2. C Program Structure and its Components (p. 2-3)
- ❑ C.3. Variables and Basic Data Types (p. 4-8)
- ❑ C.4. Selection Statements (p. 9-10)
- ❑ C.5. Repetition Statements (p. 11-14)
- ❑ C.6. Functions (p. 15-18)
- ❑ C.7. Arrays (p. 19-22)
- ❑ C.8. Pointers (p. 23-28)
- ❑ C.9. File Processing (p. 29-30)

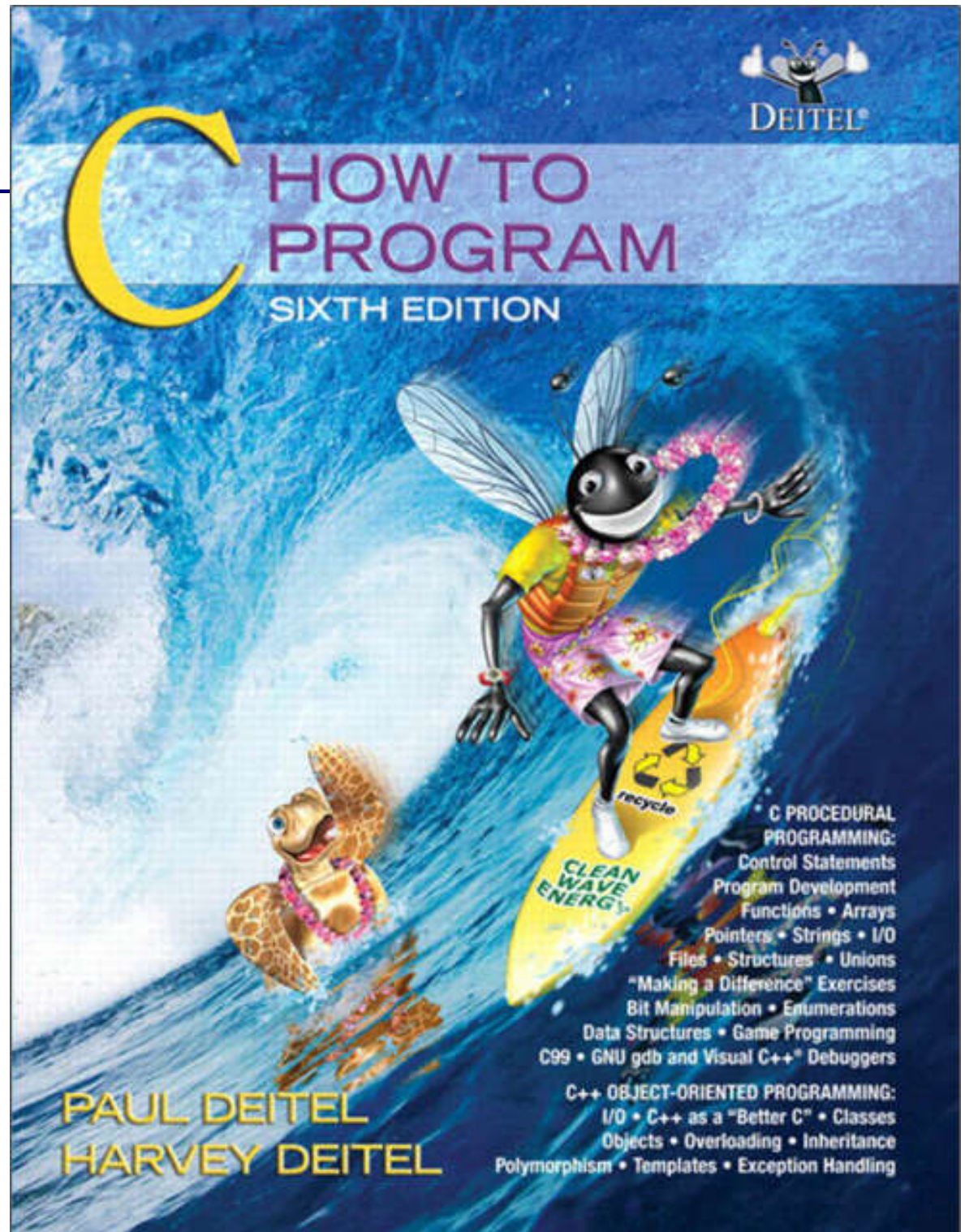
References



- ❑ [1] "*C: How to Program*", 7th Ed. – Paul Deitel and Harvey Deitel, Prentice Hall, 2012.
- ❑ [2] "*The C Programming Language*", 2nd Ed. – Brian W. Kernighan and Dennis M. Ritchie, Prentice Hall, 1988
- ❑ and others, especially those on the Internet

References

"C: How to Program", 6th Ed. –
Paul Deitel and
Harvey Deitel,
Prentice Hall, 2010.



Grading

- Practice: 30%
- Assignment: 30%
- Final Exam: 40%

→ **Pass** if

$$\text{Practice} * 0.3 + \text{Assignment} * 0.3 + \text{Final Exam} * 0.4 \geq 5.0$$

→ **NOTE**: if one component has a grade of less than 3 ($\text{grade} < 3$), the final grade will be that grade regardless of the others.

Grading

- Practice: 30%
 - Home Practices
 - Final In-class Practice
- Assignment: 30%
 - Group of 3-4 Students
 - Informed in Practice Class
- Final Exam: 40%

Grading

- ▣ Never copy from the others
- ▣ Never let the others copy from you
- ▣ Never be absent from class if not necessary
- ▣ Never be absent from practice

Contact

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 - By appointment

CO1003: Introduction to Computer Programming

