


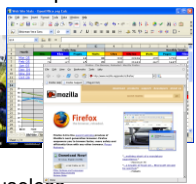
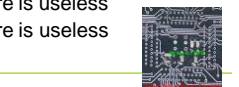

The Context of Software Development

Chapter 1

1

What is a Computer Program?

- The instructions that make a computer do the things we want it to do
 - Game
 - Spreadsheet
 - Browser
- A program is software
- Software controls hardware
 - Hardware without software is useless
 - Software without hardware is useless

2

Anyone Play the Piano?



3

Piano Music



4

How Does a Piano Work?



5

Old-time Player Piano



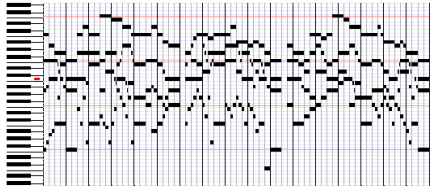
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Player Piano Roll



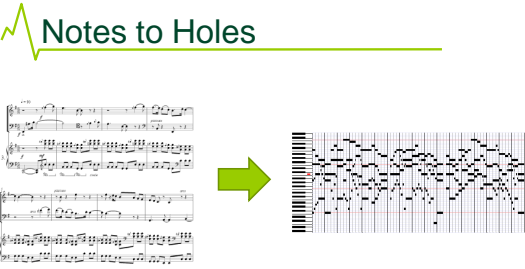
SOUTHERN ADVENTIST UNIVERSITY
School of Computer

Roll Encodes Music



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Notes to Holes



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Computer software

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Computer Software

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Computer Software

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 Computer Software

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 Computer Software

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 Computer Software

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 Computer Software

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 Computer Software

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Computer Software

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Computer Software

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Computer Software

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Instruction Register

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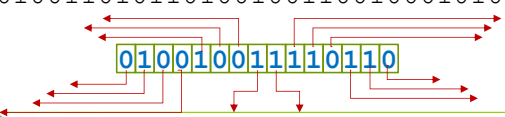

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Decoding



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The good news

- We write software more like sheet music than player piano rolls

Do I Need to Know about Hardware?

- Applications programming vs. systems programming
- We do not need to know anything about the hardware!
- Our programming language insulates us from the platform:
 - Processor
 - Operating system



The C++ Programming Language

- Mature
- Evolving
- Object oriented
- Vendor neutral
- Used in both applications and systems programming

C++

Visual Studio 2008

- A professional software development tool

Next . . .

Writing our first C++ program