**CSC263 Database Systems**

**Laboratory Assignment #1**

**Goals:** To develop an understanding of the need for databases

**Objectives:** After successfully completing the lab, one should be able to

* understand the differences between flat files and databases,
* understand why databases are necessary, and
* provide examples to explain your understanding

**Requirements:**

Given the following table stored in an Excel spreadsheet file ([books.xls](file:///C:\Users\Bo\Documents\Bo%20SSU%20Documents\BoHomePage\teaching\courses\csc263\contents\labs\sp2017\Lab1\Books.xlsx))

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Year** | **Edition** | **ISBN** | **Authors** |
| Visual Basic 2005 How to Program | 2006 | 3rd | 0131869000 | Harvey Deitel; Paul Deitel; |
| Visual C# 2005 How to Program | 2006 | 2nd | 0131525239 | Harvey Deitel; Paul Deitel; |
| Java How to Program | 2007 | 7th | 0132222205 | Harvey Deitel; Paul Deitel; |
| C++ How to Program | 2005 | 5th | 0131857576 | Harvey Deitel; Paul Deitel; |
| C How to Program | 2007 | 5th | 0132404168 | Harvey Deitel; Paul Deitel; |
| Internet & World Wide Web How to Program | 2004 | 3rd | 0131450913 | Harvey Deitel; Paul Deitel; Andrew Goldberg |
| Operating Systems | 2004 | 3rd | 0131828274 | Harvey Deitel; Paul Deitel; David Choffnes |
| Android How to Program | 2017 | 3rd | 0134444302 | Harvey Deitel; Paul Deitel; |
| Foundations of Modern Networking: SDN, NFV, QoE, IoT, and Cloud | 2016 | 1st | 0134175395 | William Stallings |
| Wireless Communication Networks and Systems | 2016 | 1st | 0133594173 | Cory Beard; William Stallings |
| Computer Organization and Architecture | 2016 | 10th | 0134101618 | Williams Stallings |
| Operating Systems | 2012 | 7th | 013230998X | Williams Stallings |
| Data and Computer Communications | 2014 | 10th | 0133506487 | Williams Stallings |
| Cryptography and Network Security | 2014 | 6th | 0133354695 | Williams Stallings |
| Network Security Essentials | 2014 | 5th | 0133370437 | Williams Stallings |
| Cryptography and Network Security | 2017 | 7th | 0134444280 | Williams Stallings |
| Database Systems: Design, Implementation, & Management | 2014 | 11th | 1285196147 | Carlos Coronel, Steven Morris |
| Database Systems: Design, Implementation, & Management | 2002 | 7th | 1418835935 | Peter Rob, Carlos Coronel |
| Fundamentals of Database Systems | 2017 | 7th | 0133970779 | Ramez Elmasri, Sham Navathe |
| Fundamentals of Database Systems | 2006 | 5th | 0321369572 | Ramez Elmasri, Sham Navathe |
| Fundamentals of Database Systems | 2003 | 4th | 0321122267 | Ramez Elmasri, Sham Navathe |

**Work in Excel application to accomplish the following tasks and show your work in a lab report. For each task, please explain in detail how you reached your answer, i.e., provide step by step instructions of how to accomplish each task.**

1. List all author information in the file (names only here)

**I applied a “Sort and filter” command to the table by performing the following “home 🡪 Editing 🡪 Sort & Filter” then selected the dropdown button next to “Authors” and selected “A to Z”**

|  |
| --- |
| Carlos Coronel, Steven Morris |
| Cory Beard; William Stallings |
| Harvey Deitel; Paul Deitel; |
| Harvey Deitel; Paul Deitel; |
| Harvey Deitel; Paul Deitel; |
| Harvey Deitel; Paul Deitel; |
| Harvey Deitel; Paul Deitel; |
| Harvey Deitel; Paul Deitel; |
| Harvey Deitel; Paul Deitel; Andrew Goldberg |
| Harvey Deitel; Paul Deitel; David Choffnes |
| Peter Rob, Carlos Coronel |
| Ramez Elmasri, Sham Navathe |
| Ramez Elmasri, Sham Navathe |
| Ramez Elmasri, Sham Navathe |
| William Stallings |
| William Stallings |
| William Stallings |
| William Stallings |
| William Stallings |
| William Stallings |
| William Stallings |

1. List all books in the file.

**Same as above, I applied a “Sort and filter” command to the table by performing the following “home 🡪 Editing 🡪 Sort & Filter” then selected the dropdown button next to “Title” and selected “A to Z”.**

|  |
| --- |
| Android How to Program |
| C How to Program |
| C++ How to Program |
| Computer Organization and Architecture |
| Cryptography and Network Security |
| Cryptography and Network Security |
| Data and Computer Communications |
| Database Systems: Design, Implementation, & Management |
| Database Systems: Design, Implementation, & Management |
| Foundations of Modern Networking: SDN, NFV, QoE, IoT, and Cloud |
| Fundamentals of Database Systems |
| Fundamentals of Database Systems |
| Fundamentals of Database Systems |
| Internet & World Wide Web How to Program |
| Java How to Program |
| Network Security Essentials |
| Operating Systems |
| Operating Systems |
| Visual Basic 2005 How to Program |
| Visual C# 2005 How to Program |
| Wireless Communication Networks and Systems |

1. List all authors in the file whose last name is Deitel.

**Same as above, I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter” then selected the dropdown button next to “Title”, selected “Text Filter”, then selected “Contains” and typed “Deitel”. This showed me that the two authors whose last name is Deitel is Harvey Deitel and Paul Deitel.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Year** | **Edition** | **ISBN** | **Authors** |
| Visual Basic 2005 How to Program | 2006 | 3rd | 0131869000 | Harvey Deitel; Paul Deitel; |
| C++ How to Program | 2005 | 5th | 0131857576 | Harvey Deitel; Paul Deitel; |
| Visual C# 2005 How to Program | 2006 | 2nd | 0131525239 | Harvey Deitel; Paul Deitel; |
| C How to Program | 2007 | 5th | 0132404168 | Harvey Deitel; Paul Deitel; |
| Java How to Program | 2007 | 7th | 0132222205 | Harvey Deitel; Paul Deitel; |
| Internet & World Wide Web How to Program | 2004 | 3rd | 0131450913 | Harvey Deitel; Paul Deitel; Andrew Goldberg |
| Operating Systems | 2004 | 3rd | 0131828274 | Harvey Deitel; Paul Deitel; David Choffnes |
| Android How to Program | 2017 | 3rd | 0134444302 | Harvey Deitel; Paul Deitel; |

1. List all books in the file that were published since 2006.

**Same as above, I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter”, then selected the dropdown button next to “Year”, selected “Number Filter”, then selected “Greater than or Equal to” and typed “2006” as the parameter. Then I selected the dropdown button next to “Year” and sorted by “Smallest to Largest”.**

|  |  |
| --- | --- |
| **Title** | **Year** |
| Fundamentals of Database Systems | 2006 |
| Visual Basic 2005 How to Program | 2006 |
| Visual C# 2005 How to Program | 2006 |
| C How to Program | 2007 |
| Java How to Program | 2007 |
| Operating Systems | 2012 |
| Cryptography and Network Security | 2014 |
| Data and Computer Communications | 2014 |
| Database Systems: Design, Implementation, & Management | 2014 |
| Network Security Essentials | 2014 |
| Computer Organization and Architecture | 2016 |
| Foundations of Modern Networking: SDN, NFV, QoE, IoT, and Cloud | 2016 |
| Wireless Communication Networks and Systems | 2016 |
| Android How to Program | 2017 |
| Cryptography and Network Security | 2017 |
| Fundamentals of Database Systems | 2017 |

1. List all books in the file in the form of each book title, year, edition and its authors' names.

**I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter”, then I navigated to the column which contained the “ISBN” portion, right clicked and selected “Hide”.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Title** | **Year** | **Edition** | **Authors** |
| Fundamentals of Database Systems | 2006 | 5th | Ramez Elmasri, Sham Navathe |
| Visual Basic 2005 How to Program | 2006 | 3rd | Harvey Deitel; Paul Deitel; |
| C++ How to Program | 2005 | 5th | Harvey Deitel; Paul Deitel; |
| Visual C# 2005 How to Program | 2006 | 2nd | Harvey Deitel; Paul Deitel; |
| C How to Program | 2007 | 5th | Harvey Deitel; Paul Deitel; |
| Java How to Program | 2007 | 7th | Harvey Deitel; Paul Deitel; |
| Operating Systems | 2012 | 7th | William Stallings |
| Cryptography and Network Security | 2014 | 6th | William Stallings |
| Database Systems: Design, Implementation, & Management | 2002 | 7th | Peter Rob, Carlos Coronel |
| Data and Computer Communications | 2014 | 10th | William Stallings |
| Database Systems: Design, Implementation, & Management | 2014 | 11th | Carlos Coronel, Steven Morris |
| Network Security Essentials | 2014 | 5th | William Stallings |
| Fundamentals of Database Systems | 2003 | 4th | Ramez Elmasri, Sham Navathe |
| Internet & World Wide Web How to Program | 2004 | 3rd | Harvey Deitel; Paul Deitel; Andrew Goldberg |
| Computer Organization and Architecture | 2016 | 10th | William Stallings |
| Foundations of Modern Networking: SDN, NFV, QoE, IoT, and Cloud | 2016 | 1st | William Stallings |
| Operating Systems | 2004 | 3rd | Harvey Deitel; Paul Deitel; David Choffnes |
| Wireless Communication Networks and Systems | 2016 | 1st | Cory Beard; William Stallings |
| Android How to Program | 2017 | 3rd | Harvey Deitel; Paul Deitel; |
| Cryptography and Network Security | 2017 | 7th | William Stallings |
| Fundamentals of Database Systems | 2017 | 7th | Ramez Elmasri, Sham Navathe |

1. List all the books authored or co-authored by "Paul Deitel".

**I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter” then selected the dropdown button next to “Title”, selected “Text Filter”, then selected “Contains” and typed “Paul Deitel”. Then I selected the columns containing “Year”, “Edition”, and “ISBN” and selected “Hide” for each of them.**

|  |  |
| --- | --- |
| **Title** | **Authors** |
| Visual Basic 2005 How to Program | Harvey Deitel; Paul Deitel; |
| C++ How to Program | Harvey Deitel; Paul Deitel; |
| Visual C# 2005 How to Program | Harvey Deitel; Paul Deitel; |
| C How to Program | Harvey Deitel; Paul Deitel; |
| Java How to Program | Harvey Deitel; Paul Deitel; |
| Internet & World Wide Web How to Program | Harvey Deitel; Paul Deitel; Andrew Goldberg |
| Operating Systems | Harvey Deitel; Paul Deitel; David Choffnes |
| Android How to Program | Harvey Deitel; Paul Deitel; |

1. List all the books authored or co-authored by "David Choffnes".

**I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter” then selected the dropdown button next to “Title”, selected “Text Filter”, then selected “Contains” and typed “David Choffnes”. Then I selected the columns containing “Year”, “Edition”, and “ISBN” and selected “Hide” for each of them.**

|  |  |
| --- | --- |
| **Title** | **Authors** |
| Operating Systems | Harvey Deitel; Paul Deitel; David Choffnes |

1. List all the books authored or co-authored by "Abbey Deitel".

**I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter” then selected the dropdown button next to “Title”, selected “Text Filter”, then selected “Contains” and typed “Abbey Deitel”. Then I selected the columns containing “Year”, “Edition”, and “ISBN” and selected “Hide” for each of them. There are none.**

1. List all the books published between 2012 and 2017.

**Same as above, I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter”, then selected the dropdown button next to “Year”, selected “Number Filter”, then selected “Between” and typed “2012” and “2017 as the parameters. Then I selected the dropdown button next to “Year” and sorted by “Smallest to Largest”.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Year** | **Edition** | **ISBN** | **Authors** |
| Operating Systems | 2012 | 7th | 013230998X | William Stallings |
| Cryptography and Network Security | 2014 | 6th | 0133354695 | William Stallings |
| Data and Computer Communications | 2014 | 10th | 0133506487 | William Stallings |
| Database Systems: Design, Implementation, & Management | 2014 | 11th | 1285196147 | Carlos Coronel, Steven Morris |
| Network Security Essentials | 2014 | 5th | 0133370437 | William Stallings |
| Computer Organization and Architecture | 2016 | 10th | 0134101618 | William Stallings |
| Foundations of Modern Networking: SDN, NFV, QoE, IoT, and Cloud | 2016 | 1st | 0134175395 | William Stallings |
| Wireless Communication Networks and Systems | 2016 | 1st | 0133594173 | Cory Beard; William Stallings |
| Android How to Program | 2017 | 3rd | 0134444302 | Harvey Deitel; Paul Deitel; |
| Cryptography and Network Security | 2017 | 7th | 0134444280 | William Stallings |
| Fundamentals of Database Systems | 2017 | 7th | 0133970779 | Ramez Elmasri, Sham Navathe |

1. List all the books published in year 2007 and authored or co-authored by "Harvey Deitel".

**I applied a “Sort and filter” command to the table by performing the following “home** 🡪 **Editing** 🡪 **Sort & Filter”, then selected the dropdown button next to “Year”, selected “Number Filter”, then selected “Equals” and typed “2007” as the parameter. Then selected the dropdown button next to “Authors”, selected “Text Filter”, then selected “Contains” and typed “Harvey Deitel” as the parameter.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Year** | **Edition** | **ISBN** | **Authors** |
| C How to Program | 2007 | 5th | 0132404168 | Harvey Deitel; Paul Deitel; |
| Java How to Program | 2007 | 7th | 0132222205 | Harvey Deitel; Paul Deitel; |

**Answer the following questions in your lab report:**

1. Specify what “would-be” problems and/or inconveniences using a single file like this one to managing the information.

**I can identify a few flaws here. The first is how tedious it is to “sort and Filter” through certain queries. In having to navigate through all of these it took considerable time. Second and more importantly, once you apply a filter, you can easily forget to clear it before performing another filter/query and could convey incorrect data as a result. The third is that we can only “hide” certain columns and cannot “remove” a column temporarily for better visuals.**

1. What would you recommend as a better way to manage the given information?

**I would say a program that could easily allow us to query these requirements, modify, remove, and add to the table as we see fit. A program that provides more “user friendly” options as to performing these filters and allows us to temporarily remove certain columns from our view.**

1. What did you learn from this lab?

**In this lab I learned a couple things. First, “Sort and Filter” is not as convenient as I once thought. Second, the “sort and Filter” option is not nearly as effective as I thought. Third, I had quite the refresher in excel.**