**Ethics in Data Mining**
*BIM 1*
*Business Management & Administration*

**Lesson Plan**

**Performance Objective**
The student understands and is able to recall information on data mining basics.

**Specific Objectives**
The student is able to discuss the importance of ethics in data mining.

**Terms**
- **Ethics**- The basic concepts and fundamental principles of decent human conduct.
- Morals- Private conduct based on strict adherence to a sanctioned or accepted code or dogma of what is right or wrong.
- Values- Important and lasting beliefs or ideals shared by the members of a culture about what is good or bad and desirable or undesirable.
- Ethical Behavior- Acting in ways consistent with what society and individuals typically think are good values.
- The Greatest Good Principle- The idea that if an action benefits the greatest number of people, then the action is ethical.
- Right- A moral or legal entitlement to have or obtain something or to act in a certain way.
- Duty- A moral or legal obligation; a responsibility.
- Fairness- Conformity with rules or standards.
- Virtue- Behavior showing high moral standards.
- The Common Good Approach- Regards all individuals as part of a larger community that needs to safeguard the sustainability of our community for the good of all, including our weakest and most vulnerable members.
- Compliance- The action or fact of complying with a wish or command.
- Exhortation- An address or communication emphatically urging someone to do something.

**Time**
When taught as written, this lesson should take approximately 100 minutes to teach.

**Preparation**

**TEKS Correlations**
This lesson, as published, correlates to the following TEKS. Any changes/alterations to the activities may result in the elimination of any or all of the TEKS listed.
130.114 (c) Knowledge and Skills
The student applies data mining methods to acquire pertinent information for business decision making. The student is expected to:
(c) discuss the importance of ethics in data mining.

Interdisciplinary Correlations

English-English IV
- 110.34(b)(1) Reading/Vocabulary Development. Students understand new vocabulary and use it when reading and writing.
- 110.34(b)(17) Students understand the function of and use the conventions of academic language when speaking and writing. Students will continue to apply earlier standards with greater complexity.
- 110.34(b)(18) Students will write legibly and use appropriate capitalization and punctuation conventions in their compositions. Students are expected to correctly and consistently use conventions of punctuation and capitalization.
- 110.34(b)(19) Students are expected to spell correctly, including using various resources to determine and check correct spellings.
- 110.34(b)(12) Students use comprehension skills to analyze how words, images, graphics, and sounds work together to impact meaning.
- 110.34(b)(22) Students clarify research questions and evaluate and synthesize collected information.
- 110.34(b)(23) Students organize and present their ideas and information according to the purpose and research and their audience.

Occupational Correlation (O*Net – www.onetonline.org/)
Job Title: Compliance Managers
O*Net Number: 11-9199.02
Reported Job Titles: Business Practices Supervisor, Compliance Coordinator, Compliance and Review Officer

Tasks
- Maintain documentation of compliance activities, such as complaints received or investigation outcomes.
- Conduct or direct the internal investigation of compliance issues.
- Disseminate written policies and procedures related to compliance activities.

Soft Skills: Critical Thinking, Social Perceptiveness, Reading Comprehension

Accommodations for Learning Differences
It is important that lessons accommodate the needs of every learner. These lessons may be modified to accommodate your students with learning differences by referring to the files found on the Special Populations page of this website.

Preparation
- Review and familiarize yourself with the terminology, all website links, and any resource materials required.
• Have materials and websites ready prior to the start of the lesson.

References
• http://ethics.csc.ncsu.edu/
• http://www.scu.edu/ethics/practicing/focusareas/business/
• http://www.educause.edu/ero/article/ethics-big-data-and-analytics-model-application

Instructional Aids
• Lesson 5.2 Presentation
• Instructor Computer/Projection Unit
• Online Websites listed in the References Section

Introduction

The main purpose of this lesson is to help students understand and discuss the importance of ethics in data mining.

Ask Have you ever been faced with an ethical dilemma?
Ask If you have, would you mind sharing with the class what it was and how you handled it?
Say Not every person has the same personal ethical standards.
Ask How would you handle the above situation? Note: Slide 4-Discovery Activity
Say Because every person has the potential of having a different set of ethical standards, businesses have to create codes of ethics.
Say In a day and age where every time you get on an electronic device and click “accept,” you are trusting the ethical standards of those who now have your information are the same standards you have.
Say In this lesson, we are going to look at ethics in general, identify your own ethical standards in certain cases, and then learn about and discuss the importance of being ethical in business/data mining.
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<td>I. Vocabulary/Personal Word Walls</td>
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<td>II. Introduction (Ask and Say)</td>
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<td>III. Discovery Activity</td>
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<tr>
<td>Agree/Disagree</td>
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<tr>
<td>IV. Instruction/Discussion</td>
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<tr>
<td>• What is Ethics?</td>
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<tr>
<td>• Five Ways to Think Ethically</td>
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<td>• Am I Responsible?</td>
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<td>V. Review and Evaluation</td>
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<td>VI. Extensions</td>
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During the 1\textsuperscript{st} week of school, students will have created personal, possibly electronic, Word Walls. The method and location will be established by the teacher.

Specifics are listed in both this document and in the presentation.

Have students determine whether or not they agree or disagree with each of these statements (Slide 5). Once they have had time to do this, then share with the answers with the class by dividing the class into two parts (an “agree” side and a “disagree” side). Once you have established which side is which, say these statements out loud and have students move to their respective side. Once there, require one student from the “agree” side to explain why he/she chose his/her answer. After the explanation, have a student from the opposite side explain his/her answer (but they have to restate what the person said before him/her before making their statement). If possible, have at least three students speak from each of the two sides before moving onto the next statement.

Share the information provided with students. There are several other options to share the same information via posted videos and/or posted research.

Review the main points from the lesson with students and then give them the provided assessment.

Two extensions are provided in the
**Multiple Intelligences Guide**

### Application

**Discovery Activity**
Using Slide 4 in the presentation file, give students a situation in which they need to decide how they would handle it based on their own ethics/beliefs.

**Discussion/Information**
This information is provided to help get your students ready to do some sort of application of the information in Lesson 3 of this unit. Share this with your students in the manner that works best for you and your classroom. There are three videos (all hyperlinked at the bottom of each slide [Slides 6-8]) to help with instruction. Slides 9-10 allow for student feedback.

**Review/Assessment**
Use the provided review (Slide 10) and assessment. Key is provided.

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**Review and Lesson Evaluation**
Review the lesson’s purpose and evaluate its effectiveness.

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**Evaluation**

**Informal Assessment**
- Discovery Activity Participation
- Agree/Disagree Participation
- Discussion-Ethics in Data Mining

**Formal Assessment**
- Ethics in Business and Data Mining

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**Enrichment**

**Extensions**
- TOS (Terms of Service)

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Do an Internet search for “terms of service.” Make a list of all websites whose purpose is to help companies create Terms of Service. Record their pricing and their policies (if posted).

- **TOS (Terms of Service)**
  Do an Internet search to find companies who post their terms of service policies online. Read through some of these policies and record the parts of the service that are most important to you. Determine whether or not you would agree or disagree to these terms. If you didn’t agree to the terms of service, and this was the only provider of a product/service you wanted, what would you do?
Lesson 5.2-Ethics in Data Mining
Formal Assessment

Objective: To determine your level of understanding of the nature of data mining and your ability to discuss the importance of ethics in data mining.

Please answer the following questions (be specific and detailed).

1. What is the definition of ethics?
2. Why is ethics important in data mining?
3. Of the five ways to think ethically that were discussed in the lesson, which (one or more) do you most identify with and why? Answers will vary. Choices below.
4. Of the tests for responsibility discussed in the lesson, which (one or more) do you most identify with and why? Answers will vary. Choices below.
5. If a person’s personal ethics do not match up with a business’ ethics (of which they are an employee), which should take precedent? Why? Each question will be worth 10 points.
Formal Assessment Key

Objective: To determine your level of understanding of the nature of data mining and your ability to discuss the importance of ethics in data mining.

Please answer the following questions (be specific and detailed).

6. What is the definition of ethics?
   a. The basic concepts and fundamental principles of decent human conduct.

7. Why is ethics important in data mining?
   - Personal information about consumers is being released to the public without the consent of knowledge of the person being exploited.
   - Web users are tracked and their actions are analyzed without their knowledge.
   - Web users are tracked, their actions are analyzed, and then marketing strategies are established without their knowledge.
   - If someone is not aware that the information is being collected or of how it will be used, she/he has not the opportunity to consent or withhold consent for its collection and use.

8. Of the five ways to think ethically that were discussed in the lesson, which (one or more) do you most identify with and why? Answers will vary. Choices below.
   - Analyze whether the proposed behavior or a standard of behavior promotes the greatest good or the greatest human welfare.
   - Identify the legitimate rights or human rights of individuals or groups affected, and the duties of the actors.
   - Analyze whether all parties are treated fairly...that is equally or differently only if there is a legitimate reason to do so.
   - Analyze whether the proposed behavior is consistent with recognized virtues.
   - Ask whether the common good is adequately served.

9. Of the tests for responsibility discussed in the lesson, which (one or more) do you most identify with and why? Answers will vary. Choices below.
   - Severity of the harm
   - Certainty of the harm
   - Degree of involvement
   - Cost of acting
   - Certainty of the solution

10. If a person’s personal ethics do not match up with a business’ ethics (of which they are an employee), which should take precedence? Why? Answers will vary.

Each question will be worth 20 points.
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<thead>
<tr>
<th></th>
<th>No Answer 0 pts</th>
<th>Needs Improvement 4 pts</th>
<th>Adequate 6 pts</th>
<th>Quality 8 pts</th>
<th>Exemplary 10 pts</th>
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</thead>
<tbody>
<tr>
<td><strong>Content 10 pts</strong></td>
<td>No Answer</td>
<td>Needs Improvement</td>
<td>Adequate</td>
<td>Quality</td>
<td>Exemplary</td>
</tr>
<tr>
<td></td>
<td>Did not answer</td>
<td>Answers are partial or incomplete, key points are not clear. Question not adequately addressed.</td>
<td>Answers are not comprehensive or completely stated. Key points are addressed, but not well supported.</td>
<td>Answers are accurate and complete. Key points are stated and supported.</td>
<td>Answers are comprehensive, accurate and complete. Key ideas are clearly stated, explained, and well supported.</td>
</tr>
<tr>
<td><strong>Organization 10 pts</strong></td>
<td>No Answer</td>
<td>Needs Improvement</td>
<td>Adequate</td>
<td>Quality</td>
<td>Exemplary</td>
</tr>
<tr>
<td>(Answers are clearly thought out and articulated.)</td>
<td>Did not answer question.</td>
<td>Answers are not comprehensive or completely stated. Key points are addressed, but not well supported.</td>
<td>Organization is mostly clear and easy to follow.</td>
<td>Organization is clearly stated, developed, and easy to follow.</td>
<td></td>
</tr>
<tr>
<td><strong>Writing Conventions 10 pts</strong></td>
<td>No Answer</td>
<td>Needs Improvement</td>
<td>Adequate</td>
<td>Quality</td>
<td>Exemplary</td>
</tr>
<tr>
<td>(Spelling, punctuation, grammar, and complete sentences.)</td>
<td>Did not answer question.</td>
<td>Displays three to five errors in spelling, punctuation, grammar, and sentence structure.</td>
<td>Displays one to three errors in spelling, punctuation, grammar, and sentence structure.</td>
<td>Displays no errors in spelling, punctuation, grammar, and sentence structure.</td>
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