  
**Unit 4**

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.1

---

---

---


---

---

---

---

---

 **Learning Objective**

- Data Mining Basics
- Major Data Mining Techniques and Benefits
- Data Mining Applications

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.1

---

---

---


---

---

---

---

---

 **Data Mining Basics**

- What is Data Mining
- Data Mining Defined
- The knowledge discovery process
- OLAP versus data mining
- Data mining and the data warehouse

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.1

---

---

---


---

---

---

---

---


**What is Data Mining**

---

- Data Mining is the process of extracting Knowledge hidden from large volumes of data.
- Data Mining automates the process of finding relationships and patterns in raw data and delivers results that can be either utilized in an automated decision support system.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1

---

---

---

---

---


---

---

---

---

---


**What is Data Mining cont..**

---

- What goods should be promoted to this customer?
- What is the probability that a certain customer will respond to a planned promotion?
- Can one predict the most profitable securities to buy/sell during the next trading session?
- What medical diagnose should be assigned to this patient?
- How large the peak loads of a telephone or energy network are going to be?

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1

---

---

---

---

---


---

---

---

---

---


**What is Data Mining cont..**

---

These are all the questions that can probably be answered if information hidden among megabytes of data in your database can be found explicitly and utilized. Modeling the investigated system, discovering relations that connect variables in a database are the subject of data mining.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1

---

---

---

---

---


---

---

---

---

---

	<b>Data Mining Defined</b>
<p>See an analogy, imagine a very wide and very deep pit (hole in the ground) densely packed with some important material. We use the set of sophisticated drilling tools to dig and unravel the contents. We do not know what exactly we hope to get from our effort. Nothing may turn up or there may be possibility to find real gold coins. We were not specifically looking for coins. We did not know they were there or if they ever existed.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Data Mining Defined cont..</b>
<p>As a change of scenario, replace the very wide and very deep pit with our data warehouse. Replace the material in the pit with the massive data content in our data warehouse and replace the drilling tools by data mining tools. The Gold coins are the important pieces of information. In fact, we had applied the data mining tools to find some thing worth while we did not know existed.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>The Knowledge Discovery Process</b>
<p>Various Steps in Knowledge Discovery Process are:-</p> <p><b>1: Define Business objectives:-</b> This Step is similar to any information system Project. First of all, determine whether we really need a data mining solution. State our objects for example Are you looking to improve our direct marketing Campaigns?</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>The Knowledge Discovery Process cont..</b>
<p><b>2: Prepare Data:-</b> This Step Consists of data selection, Preprocessing of data, and data transformation. Select the data to be extracted from the data ware house use the business objectives to determine What data has to be selected, Preprocessing in this step is done in order to improve the quality of selected data. Also, if the data for mining is selected from the data warehouse, it is again assumed that all the necessary data transformations have already been completed.</p>	
<p>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</p>	

---

---

---

---

---


---

---

---

---

---

	<b>The Knowledge Discovery Process cont..</b>
<p><b>3: Perform Data Mining:</b> This Step is a very crucial step. The Knowledge discovery engine applies the selected algorithm to prepare data. The output from this step is a set of relationship or patterns. However this step and next step of evaluation may be performed in an iterative manner.</p> <p><b>4: Evaluate Results:</b> In the selected data, there are potentially many patterns or relationship. In this step, you examine all the resulting patterns. We will apply a filtering mechanism and select only the promising pattern to be presented and applied.</p>	
<p>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</p>	

---

---

---

---

---


---

---

---

---

---

	<b>The Knowledge Discovery Process cont..</b>
<p><b>5: Present Discoveries:</b> Presentation of Knowledge discovery may be in the form of visual navigation, Charts, graphs etc.</p> <p><b>6: In corporate Usage of Discoveries:</b> The goal of any data mining operation is to understand the business, discover new patterns and Possibilities, and turn this understanding into actions. This step is for using the results to create actionable item in the business. We assemble the results of the discovery in the best way so that they can be exploited to improve the business.</p>	
<p>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</p>	

---

---

---

---

---

---

---

---

---

---

OLAP Versus Data Mining		
Features	OLAP	Data Mining
Motivation of information Request	What is happening in the enterprise?	Predict the future based on why this is happening
Number of Business Dimensions	Limited No. of Dimensions	Large Number of Dimensions
Size of Data Sets for the Dimensions	Not large for each dimension	Usually very large for each Dimension
Analysis approach	User Driven Interactive analysis	Data –Driven automatic knowledge Discovery
Analysis Techniques	Drill-Down & Slice-and –Dice	Prepare data, mining tool
State of Technology	Mature	Still emerging

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1

---

---

---

---

---

---

---

---

---

---

---

---

**Data Mining and Data Ware House**

The enterprise data ware house form a very useful source of data for data mining. It contains all the significant data you have extracted from the various source operational systems. Data mining fits well and plays a significant role in the data environment. The data warehouse enables data mining operations to take place.

Data from the data ware house is used for traditional analysis and data mining. When an analyst wants to perform an analysis, say with an OLAP tool, he or she begins with summary data at a high level, the continues through the lower level, the continues through the lower levels by means of drill-down techniques. On many occasions, the analyst not go down to the detail levels.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1

---

---

---

---

---

---

---

---

---

---

---

---

**Data Mining and Data Ware House cont..**

This is because he/she finds the suitable subsets for deriving conclusions at the higher levels. But data Mining is different. As the data mining algorithm is searching for trends & patterns, it deals with lots of detailed data. For example, if the data mining algorithm is looking for customer buying patterns, it certainly needs detailed data at the level of the individual customer.

The data ware house is a valuable and easily available data source for data mining operations.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1

---

---

---

---

---

---

---


---

---

---

---

---

	<b>Conclusion</b>
<ul style="list-style-type: none"> <li>• Decision support systems have progressed to data mining</li> <li>• Data mining, which is knowledge discovery, is data-driven, whereas other analysis techniques such as OLAP are user-driven.</li> <li>• The knowledge discovery process in data mining uncovers relationships and patterns not readily known to exit.</li> </ul>	
© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1	

---

---

---


---

---

---

---

---

	<b>Major Data Mining Techniques and Benefits</b>
<ul style="list-style-type: none"> <li>• Cluster detection</li> <li>• Decision trees</li> <li>• Memory-based reasoning</li> <li>• Link analysis</li> <li>• Neural networks</li> <li>• Genetic algorithms</li> <li>• Moving into data mining &amp; benefits</li> </ul>	
© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1	

---

---

---


---

---

---

---

---

	<b>Moving into Data Mining &amp; benefits</b>
<p>We have sufficient knowledge to look in the right direction and help your company get into data mining and reap the benefits. What are the initial steps? How should your company get started in this attractive technology? First of all, remember that our data ware house is going to feed the data mining processes. What ever our company plans to use data mining technology, for the data source is our data ware house. Before getting into data mining a sound and a solid data warehouse will put the data mining operation on a strong foundation. When we apply a data mining technique, it is nice to discover a few interesting patterns and relationships.</p>	
© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1	

---

---

---


---

---

---

---

---

	<b>Moving into Data Mining &amp; benefits cont..</b>
<p>Following is a list of criteria for evaluating data mining tools.</p> <ul style="list-style-type: none"> <li>• <b>Data Access:-</b> The data mining tool must be able to access data source such as the data warehouse and quickly bring over the required data sets to its environment.</li> <li>• <b>Data Selection:-</b> Selection abilities must include filtering out of unwanted data and deriving new data items from existing ones.</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Moving into Data Mining &amp; benefits cont..</b>
<ul style="list-style-type: none"> <li>• <b>Sensitivity to Data Quality:</b> The data mining tool must be sensitive to the quality of data it mines. The tool must be able to recognize missing or incomplete data and compensate for the problem. The tool must also be able to produce error reports.</li> <li>• <b>Data Visualization:</b> Select tools with good data visualization Capabilities.</li> <li>• <b>Extensibility:</b> The tool architecture must be able to integrate with the data warehouse administration and other functions such as data extraction and meta data management.</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Moving into Data Mining &amp; benefits cont..</b>
<ul style="list-style-type: none"> <li>• <b>Performance:</b> The tool must provide consistent performance irrespective of the amount of data to be mined.</li> <li>• <b>Scalability:</b> Data mining needs to work with large volumes of data to discover meaningful and useful patterns and relationships.</li> <li>• <b>Openness:</b> This is a desirable feature openness refers to being able to integrate with the environment and other types of tools</li> <li>• <b>Suite of Algorithms:</b> Select a tool that provides a few different algorithms rather than one that support only a single data mining algorithm.</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Benefits of Data Mining</b>
<p>With out data mining, useful knowledge lying buried in the mountains of data in many organizations would never be discovered and the benefits from using the discovered patterns and relation ships would not be realized.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---


---

---

---

---

---

	<b>Benefits of Data Mining cont..</b>
<p><b>Following is list of benefits provides by data mining:-</b></p> <ul style="list-style-type: none"> <li>• In a large company manufacturing consumer goods, the shipping department regularly short-ships orders and hides the variations between the purchase orders and the freight bills. Data mining detects the criminal behavior by uncovering patterns of orders and premature inventory reductions</li> <li>• A mail order company improves direct mail promotions to prospects through more targeted campaigns.</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---


---

---

---

---

---

	<b>Benefits of Data Mining cont..</b>
<ul style="list-style-type: none"> <li>• A Super market Chain improves earning by re arranging the shelves based on discovery of affinities of products that sell together.</li> <li>• An airlines company increases sales to business travelers by discovering traveling patterns of frequent flyers.</li> <li>• A national health insurance provider saves large amount of money by detecting fraudulent claims.</li> <li>• A manufacturer of diesel engines increases sales by forecasting sales of engines based on patterns discovered from historical data of truck registrations.</li> <li>• A catalog sales company doubles its holiday sales from the previous year by predicting which customers would use the holiday catalog.</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---

---


---

---

---

---



	<b>Conclusion</b>
<p>Data warehouse is the best source of data for a data mining operation. Major common data mining techniques are cluster detection, decision trees, memory-based reasoning, link analysis, neural networks, and genetic algorithms.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---

---

---

---

---

---

	<b>Data Mining Applications</b>
<p>As we already know Data Mining provides enormous amount of benefits due to such reasons its has its applications in various fields.</p> <ul style="list-style-type: none"> <li>• Retail Industry</li> <li>• Telecommunication Industry</li> <li>• Banking and Finance</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---

---

---

---

---

---

	<b>Applications in Retail Industry</b>
<p>The retail industry makes use of data mining and benefits from it. The retail industry adopted data warehousing earlier than most other industries. The data ware houses in many retail business are mature &amp; ripe. The use of Scanners and cash registers, the retail industry has been able to capture detailed point of sale data. The retail industry was able to begin using data mining. All types of business in the retail industry, including catalog sales companies, use direct marketing campaigns and promotions extensively. All companies depend heavily on direct marketing.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---

---

---

---

---

---

 **Applications in Retail Industry cont..**

Direct Marketing involves targeting campaigns & promotions to specific customer segments. As this is a crucial area for the retail industry, many vendors offer data mining tools for customer segmentations. Customer segmentations tools discover cluster and predict success rates for direct marketing campaigns, Retail industry promotions necessarily require knowledge of which products to promote and in what combinations.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#

---

---

---

---

---

---

---

---

---

---

 **Applications in Retail Industry cont..**

Retailers also uses data mining for inventory management. Inventory for a retailer encompasses thousands of products. Inventory turn over and management are significant concerns for these businesses. Another area of use for data mining in the retail industry relates to sales forecasting.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#

---

---

---

---

---

---

---

---

---

---

 **Application in the Telecommunications Industry**

The next industry we want to look at for data mining applications is telecommunications. Telecommunications companies compete with one another to design the best offerings and entice customers. This climate of competitive pressures has driven telecommunication companies to data mining.

© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#

---

---

---

---

---


---

---

---

---

---

	<b>Application in the Telecommunications Industry cont..</b>
<p>Following is the list of questions and concerns of the industry where data mining applications are helping.</p> <ul style="list-style-type: none"> <li>• Customer behavior indicating increased line usage in the future.</li> <li>• Discovery of profitable service packages.</li> <li>• Prediction of cellular fraud.</li> <li>• Promotion of additional products and services to existing customers.</li> <li>• Factors that increase the customer's interest to use the phone</li> <li>• Product evaluation compared to the competition</li> </ul>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Applications in Banking and Finance</b>
<p>In this Industry were we will find heavy usage of data mining, Banking has been reshaped by regulations in the past few years. Banks have been expanding the scope of their services. Finance is an area of fluctuation and uncertainty. The banking and finance industry is fertile ground for data mining. Banks and financial institutions generate large volumes of detailed transaction data, Such data is suitable for data mining.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Applications in Banking and Finance cont..</b>
<p>Data mining applications at banks are quite varied. Fraud detection, risk assessment of potential customers, direct marketing are the primary data mining applications at banks. In the financial area, requirements for forecasting dominate. Forecasting of potential financial disaster can prove to be very valuable, for the purpose of forecasting various data mining algorithms are used.</p>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<b>Conclusion</b>
<p>Applications of Data Mining Data Mining has been applied in a wide variety of areas such as Retail Industry, Telecommunications Industry, Banking and Finance</p> <p>Data mining applications at banks are quite varied. Fraud detection, risk assessment of potential customers, trend analysis, and direct marketing are the primary data mining applications at banks.</p>	
© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1	

---

---

---


---

---

---

---

---

	<b>Summary</b>
<p>Data mining, the extraction of hidden predictive information from large databases, Data mining tools predict future trends and behaviors, allowing businesses to make proactive, knowledge-driven decisions. The automated, prospective analyses offered by data mining move beyond the analysis of past events provided by retrospective tools. Data mining answers business questions that traditionally were too time-consuming to resolve. Data mining tools scour databases for hidden patterns, finding predictive information that experts may miss because it lies outside their expectations.</p>	
© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1	

---

---

---


---

---

---

---

---

	<b>Review Questions</b>
<p><b>Objective Questions:</b></p> <p>1)The types of information that can be garnered from datamining include:</p> <ul style="list-style-type: none"> <li>a) sequences, classifications, and clusters.</li> <li>b) model-driven and data-driven.</li> <li>c) associations and forecasts.</li> <li>d) a and c.</li> <li>e) a, b and c.</li> </ul> <p>2) The term "associations" is associated with:</p> <ul style="list-style-type: none"> <li>a) occurrences linked to a single event.</li> <li>b) classifications when no groups have been defined.</li> <li>c) pattern recognition describing the group to which an item belongs.</li> <li>d) a series of existing values used to predict other values.</li> <li>e) events linked over time.</li> </ul>	
© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1	

---

---

---


---

---

---

---

---

	<h2>Review Questions cont..</h2>
<p><b>3)DSS assist management by combining _____ into a single powerful system to support unstructured decision-making.</b></p> <ul style="list-style-type: none"> <li>a) hardware and the Internet</li> <li>b) data, analytical models and tools, and user-friendly software</li> <li>c) analytical models and tools and data from the Internet</li> <li>d) group decision processes and electronics</li> <li>e) data and people</li> </ul> <p><b>4)DSS, GDSS, and ESS are part of a special category of information systems that are explicitly designed to:</b></p> <ul style="list-style-type: none"> <li>a) make decisions for managers.</li> <li>b) enhance Web performance.</li> <li>c) gather data and build data warehouses.</li> <li>d) enhance managerial decision-making.</li> <li>e) interpret data for management.</li> </ul>	
<p>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</p>	

---

---

---

---

---

---

---


---

---

---

---

---

	<h2>Review Questions cont..</h2>
<p><b>5)The term "sequences" is associated with:</b></p> <ul style="list-style-type: none"> <li>a) occurrences linked to a single event.</li> <li>b) classifications when no groups have been defined.</li> <li>c) pattern recognition describing the group to which an item belongs.</li> <li>d) a series of existing values used to predict other values.</li> <li>e) events linked over time.</li> </ul> <p><b>6)The earliest DSS tended to:</b></p> <ul style="list-style-type: none"> <li>a) rely on Internet data.</li> <li>b) draw on small subsets of corporate data.</li> <li>c) be heavily model-driven.</li> <li>d) b and c.</li> <li>e) a and c.</li> </ul>	
<p>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</p>	

---

---

---

---

---

---

---


---

---

---

---

---

	<h2>Review Questions cont..</h2>
<p><b>7)The term "classifications" is associated with:</b></p> <ul style="list-style-type: none"> <li>a) occurrences linked to a single event.</li> <li>b) classifications when no groups have been defined.</li> <li>c) pattern recognition describing the group to which an item belongs.</li> <li>d) a series of existing values used to predict other values.</li> <li>e) events linked over time.</li> </ul> <p><b>8)Model-driven DSS:</b></p> <ul style="list-style-type: none"> <li>a) analyze large pools of data.</li> <li>b) are an outgrowth of data mining.</li> <li>c) use TPS and OLAP.</li> <li>d) begin with a given group of data and change variables.</li> <li>e) use events linked over time.</li> </ul>	
<p>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</p>	

---

---

---

---

---

---

---


---

---

---

---

---

	<h2>Review Questions cont..</h2>
<p><b>9)The term “forecasting” is associated with:</b></p> <ol style="list-style-type: none"> <li>Occurrences linked to a single event.</li> <li>Classifications when no groups have been defined.</li> <li>Pattern recognition describing the group to which an item belongs.</li> <li>A series of existing values used to predict other values.</li> <li>Events linked over time.</li> </ol> <p><b>10)A goal of data mining includes which of the following?</b></p> <ol style="list-style-type: none"> <li>To explain some observed event or condition</li> <li>To confirm that data exists</li> <li>To analyze data for expected relationships</li> <li>To create a new data warehouse</li> <li>None of these</li> </ol>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<h2>Review Questions cont..</h2>
<p><b>Short answer type Questions</b></p> <ol style="list-style-type: none"> <li>Define data mining in two or three sentences</li> <li>How is data mining different from OLAP?</li> <li>Is the data warehouse prerequisite for data mining? Does the data warehouse help data mining? If so, in what ways?</li> <li>Name the three common problems of link analysis technique?</li> <li>What is market basket analysis? Give two examples of this application in business</li> </ol>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<h2>Review Questions cont..</h2>
<ol style="list-style-type: none"> <li>Give three broad reasons why you think data mining is being used in today's businesses.</li> <li>What business problems can data mining help solve?</li> <li>What is Predictive Analytics?</li> <li>What is the difference between data mining, online analytical processing (OLAP) ?</li> <li>State various benefits of Data mining.</li> </ol>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#1</small>	

---

---

---

---

---


---

---

---

---

---

	<h3>Review Questions cont..</h3>
<p><b>Long answer type Questions</b></p> <ol style="list-style-type: none"> <li>1. Describe how decision trees work. Explain with the help of an example.</li> <li>2. What do you mean by KDD? Explain all the steps of KDD in detail.</li> <li>3. What are the basic principles of genetic algorithms? Use the example to describe how this technique works</li> <li>4. Describe cluster detection technique?</li> <li>5. Discuss Data mining Application in the field of Banking and finance.</li> </ol>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---


---

---

---

---

---

	<h3>Review Questions cont..</h3>
<ol style="list-style-type: none"> <li>6. Do neural networks and genetic algorithms have anything in common? Point out differences.</li> <li>7. How does the memory-based reasoning technique work? What is the underlying principle?</li> <li>8. Explain Neural Network in detail?</li> <li>9. What are the golden rules for data mining?</li> <li>10. Discuss Data mining Application in the field of Retail Industry.</li> </ol>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---


---

---

---

---

---

	<h3>Suggested Reading/References</h3>
<ol style="list-style-type: none"> <li>[1]. Kamber and Han, "Data Mining Concepts and Techniques", Hartcourt India P. Ltd.,2001</li> <li>[2]. Paul Raj Poonia, "Fundamentals of Data Warehousing", John Wiley &amp; Sons, 2003.</li> <li>[3]. Sam Anahony, "Data Warehousing in the real world: A practical guide for building decision support systems", John Wiley, 2004</li> <li>[4]. W. H. Inmon, "Building the operational data store", 2nd Ed., John Wiley, 1999.</li> <li>[5]. Shivendra and Divya Goel, "Distributed Database Management System", Sun India Publication., 2009</li> </ol>	
<small>© Bharati Vidyapeeth's Institute of Computer Applications and Management, New Delhi-63, by Shivendra Goel, Lecturer. U4.#</small>	

---

---

---

---

---

---

---

---