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COURSE:- BCA (cyber security)

SECTION :- A

SUB :- DATA DRIVEN DECISION
MAKING

Assignment Tasks

1

Task-1

Describe a real-world scenario where decisions are made using data (e.g., marketing, education, health-care).-

Scenario:- Healthcare -
(Hospital patient management)

Hospitals use data to make decisions about patient treatment and resource allocation.

For example, - patient records, lab reports, and medical history are analyzed to identify disease patterns, decide treatments, and predict patient recovery time.

If data shows a rise in seasonal flu cases, the hospital increases medicine stock, staff availability, and emergency beds.

This improves patient care and helps hospitals make faster & more accurate decisions.

Task-2

2) compare and contrast descriptive, predictive and prescriptive models using example.

Sub	Descriptive	predictive	prescriptive
Purpose	i) To understand what has happened.	i) To forecast what might happen.	i) To suggest what actions to take.
question it answers	ii) "what happened?"	ii) "what could happen?"	ii) "what should we do?"
Techniques	iii) data aggregation & data mining.	iii) statistical modeling and forecasting techniques, machine learning.	iii) optimization and simulation algorithms.
Approach	iv) Reactive, summarizing past events.	iv) proactive, anticipating future events.	iv) proactive, recommending specific for optimal results.
Example	v) A retailer sees that winter coat sales increased by 20% in December last year.	v) The retailer forecasts a 15% increase in winter coat sales this December based on historical data.	v) The retailer is advised to order 1000 extra coats to meet anticipated demand and maximize sales.

Task-3

3) List and categorize at least 5 internal and 5 external data sources for a company of your choice-

Internal data Sources (Amazon):-

category	data source	Description
operational data	Sales Transaction Database.	records all customer purchases and order details.
customer data	Amazon account data (customer profiles)	customer personal info, preferences, browsing & purchase history.
Financial data	Internal financial system.	revenue, expenses, profit & budgeting system.
logistics & supply chain data	warehouse & Inventory management systems.	stock levels, storage locations, shipping data.
HR & employee data	employee management system	Staff records, payroll, performance data.

External data sources (Amazon):-

category	data source	Description
Market Intelligence	market research firms (e.g., Nielsen, Gartner)	market trends, consumer behaviour reports.
Social media platform	social media Trends (Twitter, Instagram)	customer feedback, product reviews, & trend tracking.
competitor data	competitor websites pricing data.	Tracking competitor pricing & offers.
Economic & Policy	public economic data (RBI, IMF, World Bank)	Inflation, interest rate, economy conditions affecting business.
E-commerce Trends	(extra) online review Platforms (Trustpilot, Reddit)	customer opinions and product ratings.

Task-1

Reflect on how adopting a data-driven approach can improve decision quality in daily life or business.

Using a data-driven approach helps both individuals and businesses make smarter decisions instead of relying only on assumptions.

For example - a student can track study hours, practice test scores, and improvement rate to plan better study schedules.

Similarly, a business can analyze sales trends and customer feedback to improve products & marketing strategies.

Overall, data-driven decision making increases accuracy, reduces risks, saves time, and leads to better outcomes.