Application of decision support system essay

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There are intellectual possessory of creating such systems in any knowledge domain. Good example is the clinical decision support system for medical diagnosis. A bank loan officer verifying the credit of a loan collector or an engineering firm that has declaration and the want to be competitive with their cost. DSS is is commonly used in business and management. Executive dashboard and other business performance software allow quick decision making, assimilation of pessimistic inclination, and good allocation of business resources.

A speeded area of DSS application, concepts, principles, and techniques is in agricultural production, marketing for sustainable development. For example, the DSSAT4 package,[15][16] developed through financial support of USAID during the 80’s and 90’s, has allowed rapid assessment of several agricultural production systems around the world to facilitate decision-making at the farm and policy levels. There are, however, many constraints to the successful adoption on DSS in agriculture. [17] DSS are also prevalent in forest management where the long planning time frame demands specific requirements.

All aspects of Forest management, from log transportation, harvest scheduling to sustainability and ecosystem protection have been addressed by modern DSSs. A comprehensive list and discussion of all available systems in forest management is being compiled under the COST action Forays’ A specific example concerns the Canadian National Railway system, which tests its equipment on a regular basis using a decision support system. A problem faced by any railroad is worn-out or defective rails, which can result in hundreds of derailments per year.

Under a DSS, CN managed to decrease the incidence of derailments at the same time other companies were experiencing an increase. Application system has two forms use in applying decision support system which are ; Clinical decision support system (CDSS or CDS) is an interactive decision support system (DSS) Computer Software, which is designed to assist physicians and other health professionals with decision making tasks, as determining diagnosis of patient data. A working definition has been proposed by Dr.

Robert Hayward of the Centre for Health Evidence; “ Clinical Decision Support systems link health observations with health knowledge to influence health choices by clinicians for improved health care”. This definition has the advantage of simplifying Clinical Decision Support to a functional concept. A clinical decision support system was gotten from an “ active knowledge systems, which use two or more items of patient data to generate case-specific advice. This implies that a CDSS is a DSS that is stands on using knowledge management in a way to achieve clinical advice for patient care based on some number of items of patient data.

AIM: The main objective of modern CDSS is to help nurses and clinician to take care patient. It means that a clinician would interact with a CDSS to help determine diagnosis, analysis, etc. of patient data. The clinician would put all the information and stay for the CDSS to output the “ right” choice and the clinician would smartly work on that output. The new methods of using CDSS to give help forces the clinician to interact with the CDSS utilizing both the clinician’s knowledge and the CDSS to make a better analysis of the patients data than either human or CDSS could make on their own.

Clearly, the CDSS would make his suggest of outputs. There are two main types of CDSs. The doctor uses these systems at point of care to help them as they are dealing with a patient, with the timing of use as either pre-diagnosis, during diagnoses, or post diagnoses. Pre-diagnoses CDSS systems are used to help the physician prepare the diagnoses. CDSS used during diagnoses help review and filter the physician’s preliminary diagnostic choices to improve their final results.

And post-diagnoses CDSS systems are used to mine data to derive connections between patients and their past medical history and clinical research to predict future events. [2] Features of a Knowledge-Based CDSS Most CDSS are made of three parts, the knowledge base, inference engine, and mechanism to communicate. The knowledge base consist the rules and associations of composed data which sometimes take the form of IF-THEN rules. If this was a system for determining drug interactions, then a rule might be that IF drug X is taken AND drug Y is taken THEN alert user.

Using different interface, a specialized user could edit the knowledge base to update with new drugs. The inference engine is made up of the rules from the knowledge base with the patient’s column. The communication mechanism will allow the system to show the results to the user as well as have input into the system Features of a non-Knowledge-Based CDSS CDSS which doesn’t use a knowledge base use a form of artificial intelligence called machine learning, which allow system to understand from last experiences and.

Two types of non-knowledge-based systems are artificial neural networks and genetic algorithms. Artificial neural networks use nodes and weighted transferred between them to check deeply the patterns found in the patient data to derive the associations between the symptoms and a diagnosis. This evicted the need to jot the rules and for expert input. However since the system cannot explain the reason it uses the data the way it does, most clinicians don’t use them for reliability and accountability reasons.

Genetic Algorithms are based on organized recreation processes using active selection to achieve optimal CDSS results. The selection algorithms evaluate components of deferent kind of solution to there trouble. The solutions gotten are then recombined and modify and run through the process again. This happens severally till the proper solution is discovered. They are the same as neural networks in that they derive their knowledge from patient data.

Non-knowledge-based networks sometimes study on a linear list of symptoms like ones for a particular sickness as opposed to the knowledge based approach which cover many different diseases to diagnosis. Dashboards (management information systems) A dashboard is an executive information system user interface that to be easy to read. For instance, a product could get information from the local operating system in a computer, more applications that may be running, and from one or more remote sites on the Web and present it as though it all came from the same source.

Dashboards should not be misused with scorecards. Types of dashboards three main types of digital dashboard obtain the market community today:

stand alone software applications, web-browser based applications, and desktop applications also known as desktop widgets. The last are driven by a widget engine. Organized dashboards can trace all corporate functions. Examples include human resources, recruiting, sales, operations, security, information technology, project management, management and many more departmental dashboards.

Digital dashboard projects include business points as the driver and the information technology department as the conductor. The completion of digital dashboard projects mostly depends on the metrics that were taken for observation. Key performance indicators, balanced scorecards, and sales performance are the content of business dashboard. Interface design styles Like a car’s dashboard (or control panel), a software dashboard provides decision makers with the input necessary to “ drive” the business. Thus, a graphical user interface may be designed to display summaries, graphics (e. . , bar charts, pie charts, bullet graphs, “ Sparkline’s,” etc.), and gauges (with colors similar to traffic lights) in a portal-like framework to highlight imported it decision support systems Benefits of digital dashboards Digital dashboards allow controllers to control the contribution of the various departments in their work of place. To know actually how well an organization is performing overall, digital dashboards permits everyone to capture and report particular data points from each department within the organization, thus providing a “ snapshot” of performance.