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DM (DATA MINING) & FEATURE ANALYSIS OF COLLEGE STUDENTS' CAMPUS NETWORK BEHAVIOUR.

[1]Pastham shravan, [2]Dr.VBapuji

[1]PG Scholar, [2]Professor&HOD of MCA
[1]Department of MCA,
[1]Vaageswari College Of Engineering, Karimnagar, India

ABSTRACT:-

Data Mining, Student Network Activity

There has been a shift in the management of student affairs from anecdotal, qualitative knowledge to scientific, quantitative analysis, thanks in large part to the rise and promotion of big data methods that allow teachers to understand the behaviour patterns of students in a timely and accurate manner, especially to find the groups of students that need to be focused on in a timely manner. With a total of 23.843 million Internet access records spanning 4 years, this paper uses the clustering method of data mining to analyse the campus network behaviour of 3,245 students at a specific B university. In the end, we see that there are four distinct categories of students in terms of their Internet access, and that 350 of them are heavy network users. These students' academic outcomes and general performance are impacted. Data mining was performed on student campus network behaviour in this study, which can be used as a real-world example of how data mining can be put to use in the field of student affairs management. This work provides useful information that can be used to further the professionalisation and rigour of the field.

Index Terms **- Data -Mining, Qunatitative, Analysis, Big Data, Network Acitivity, Digital Campus**

1.Introduction

Management issues in student affairs are exacerbated by the tension between the limited time and resources of student counsellors and the wide range of student behaviours. This makes it more difficult to identify and reach out to students who may need help before their problems become more serious. Student counsellors have been able to conduct quantitative analysis of student behaviours at school since the turn of the 21st century thanks to the rapid development of information technology in education and the construction of digital campuses, allowing them to identify and intervene with students who may be experiencing difficulties early on.

Modern college students are the first generation to grow up with the Internet, and its pervasive presence permeates every aspect of their lives, from socialising to academics to general thought processes. As a result, we have the opportunity to utilise big data techniques to learn about the habits of their campus network. Existing student counsellors face a challenge and an important opportunity in the explosive growth of data categories and data scales: how to mine useful information for student counsellors.

Using a combination of big data thinking and big data mining techniques, the authors of this study set out to examine the characteristics of college students' network behaviour rules and identify those students who should be monitored closely due to their heavy use of the campus network, all while beginning with real-world work problems. Data mining in this study could also serve as a real-world example for other students to learn from.

2.EXISTING WORK

The challenge for student affairs administrators is that many students who could benefit from early intervention go unnoticed because counsellors can't dedicate enough time to each person's particular combination of circumstances.

Student counsellors are now able to conduct quantitative analyses of students' behaviours at school, particularly to give early warning to students who may be experiencing problems, allowing the contradiction to be alleviated through the application of analysis and early warning methods. This is made possible by the rapid advancement of IT in education and the construction of digital campuses.

3.PROPOSED WORK

Data mining is the practise of obtaining relevant information from huge, noisy, fuzzy, and randomly generated unstructured data collections [4]. In conventional data mining, which concentrates on traditional data, data points serve as the main analytical unit. By adapting traditional methodologies to functional data processing, studies have been done to mine functional data. These works [5, 6] laid the theoretical foundation for this inquiry. The principal component analysis (PCA)-derived coefficient vectors for functional data were used in this study's clustering analysis.

Let's start by discussing the advantages of the proposed system:

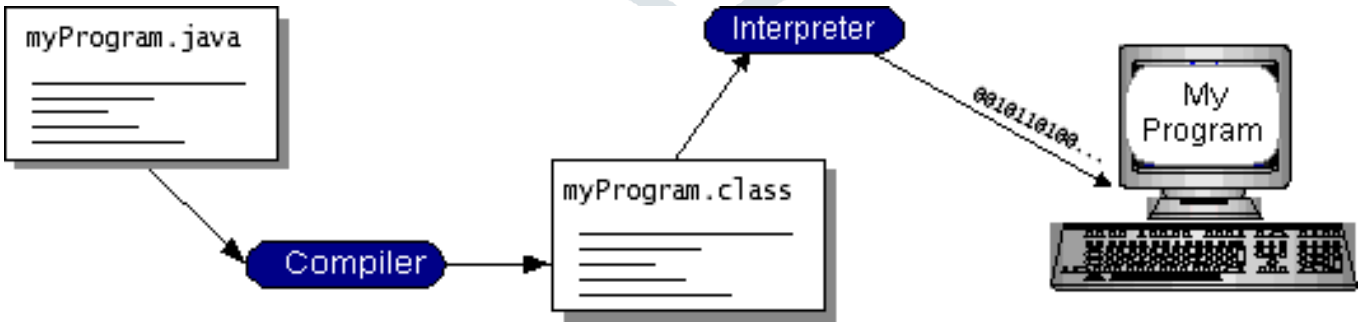
By examining their demographic data, we may find out more about the students' campus network usage patterns and pinpoint the group of students whose extensive usage calls for particular attention.

4.IMPLEMENTATION

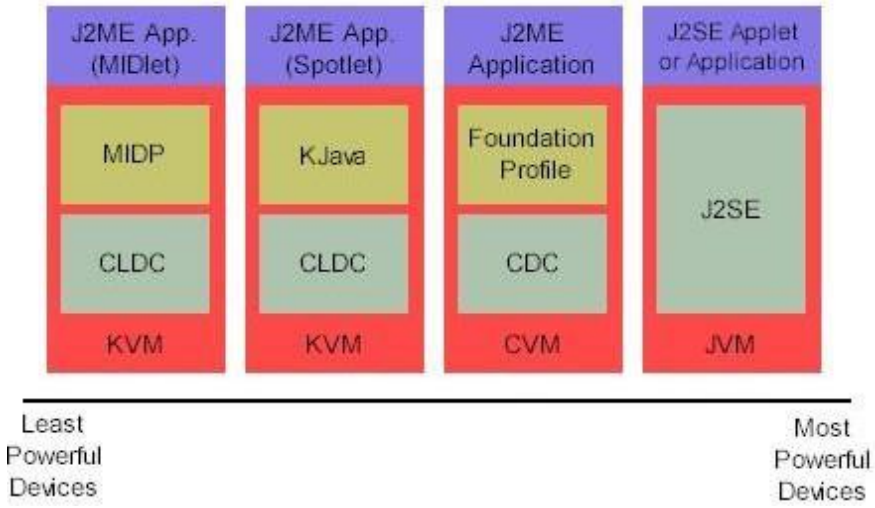
4.1:- Java Language Java combines a language and a platform in one package. One of the most widely utilised programming languages nowadays is Java. The following buzzwords are used to describe it:

Simply defined, neutrality characterises an architectural style's interior.

Object-oriented programming Comfortably sized A Distributed Amazingly effective Translated Stable in a multi-threadedenvironment 'Dynamic' is another word for 'dynamic. Ensured A programme written in one of the many popular programming languages can be executed on your computer by compiling or interpreting it. Java is distinct from other programming languages because it can be both compiled and interpreted. The platform-independent code is then converted into Java byte codes by the compiler using the Java platform's interpreter. The Java interpreter parses and executes each Java bytecode instruction on the machine. While compilation only takes place once, every time a programme is run, interpretation also takes place. The illustration that follows does this



4.2 GeneralJ2ME architecture:



Configuration and profiles are used by J2ME to customize the java run time

(JRE) Environment.J2ME is a complete Java Runtime Environment (JRE) with the inclusion of domain-specific classes and a JRE. This means that a particular collection of core classes and a particular JVM can only be run on a given set of hardware. The setup of numerous components will be covered in great detail in the course. In order to identify unique usage for devices, this profile extends the J2ME setup with certain domain-specific classes. The numerous configurations, profiles, and virtual machines are shown in the following diagram. On profiles, we'll go into great detail. The J2SE API and the Java virtual machine are very similar. When discussing the J2ME virtual machines (KVM and CVM), it is usual to refer to the Java Virtual Machine (JVM) as a whole.The J2ME-specific KVM and CVM can be regarded as Java virtual machines even if they are shortened versions of the J2SE JVM. BuildingJ2MEappsisthenextstage.There are a few considerations while developing apps for mobile devices of all sizes. considerations that this section will examine. Examine the compiler's call if you're using J2SE to build J2ME apps. Without pre verification, the packing and deployment process would be finished. The design of small devices should take three things into account. It's critical to keep a few considerations in mind when developing software for mobile devices. Before starting to write the code for a little device, it's a good idea to think through your use case . Rewriting the code because you neglected to take all of the "gotcha s" into account can be annoying. Consider the following possibilities:

Eliminate complications. Either eliminate unneeded features or make a new app for them.Having a smaller size is advised. All developers ought to take this into account. Apps may be downloaded and installed more quickly because they are smaller. Consider using Java Archive (jar) files when delivering your applications.

While the software is running, use as little RAM as possible. Using scalar types rather than object types can reduce the amount of run-time memory needed. Also, don't have faith in the trash collector. By changing unnecessary object references to null, memory can be saved. The amount of memory used at runtime is reduced by allowing objects to be allocated only when they are needed. It's crucial to release resources as quickly as feasible, reuse objects, and stay away from exceptions if you want to keep memory usage on small devices to a minimum.

This means that only certain types of hardware can execute a specific set of core classes and a specific JVM.Currently, there are just two J2ME setups available:

You must use 16-bit or 32-bit devices with little memory (CLDC) in order to use the KVM's Connected Limited Device Configuration . For creating small J2ME apps, this configuration—along with the corresponding virtual machine—is frequently utilized.

CLDC's lower size makes development more challenging than CDC's. Our drawing tool application will be using the CLDC option. A Palm hand-held computer is a small wireless device that runs a single, simple application.

The CVM utilises Configured Device Configuration (CVC) for 32-bit systems needing more than 2 MB of memory (CDC). The Net TV box is an example of a device in this category.

J2MEprofiles number five

We discussed the value of a profile in this session when deciding which devices are supported. The class of a mobile phone (MIDP) is established by the Mobile Information Device Profile (MIDP). It expands the J2ME configuration to include domain-specific classes that can be used by connected devices.The two CLDC-based J2ME profiles are KJava and MIDPare. With the aid of CLDC and smaller devices, K Java and MIDP are both connected. Configs serve as the foundation for profiles. A device's memory (memory capacity), which is used by an application, is connected to specific profile settings.There is a Foundation Profile, or skeleton profile, from which you can create your own.

The first profile on this list is K Java.

K Java is a Sun profile that is exclusive to Sun and contains the K Java API. The CLDC setup is used to build the K Java profile. The J2SE virtual machine and the KVM virtual machine both accept the same byte codes and class file formats. K Java comes with the Sun-specific API, which is compatible with Palm OS. The J2SE AWT and K Java API are very comparable to each other (AWT). Consequently, com. sun. k java has taken the place of its default J2MEpackage. After creating some test programmes, one will have a better knowledge of the K Java API.

In this section, you will find the MIDP profile:

Mobile devices like smart phones and pagers are the primary target audience for MIDP. The MIDP, which is based on CLDC, like K Java, makes it possible to dynamically install new programmes and services on end-user devices. MIDP has established itself as an industry standard for mobile devices since it is not tied to any one vendor. It is an all-in-one platform for creating mobile applications that comes with thorough instructions and support. It's important to note that just the first three packages in the list below are particular to CLDC.

The java. Lang package contains Io* in the JDK Interfaces in the java.util

The Java Micro Edition Interface is implemented by this class(JMI)

Interface for Micro edition Objects in Java(LCDUI) *javax. micro edition. micro edition

The Java Micro Edition Reference Model is implemented in this class.

5. CONCLUSION

Last but not least, data mining on student behaviour on campus can aid educators and counsellors in managing student affairs by providing an unbiased, up-to-date picture of the standing and actions of student groups, allowing them to better identify and focus on those with potential issues. Only "effects" are revealed by the data, though. The very nature of the word "cause" necessitates direct, personal interaction. Counseling students is a people-oriented profession. Data is lacking in the area of idea and collision exchange. Data mining results must be dialectically applied to ensure that big data technology is used to support students' work data, which in turn raises the bar for the professionalism and scientific rigour of the work of student counsellors.

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