Website for PC Part Selection and Compatibilty Guidance

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Abstract— In a world where knowing how your computer is designed is as important as owning one, we tend to introduce computer assembly on a live website. E-commerce giants sell the required components for building a computer but it does not provide with all the compatibility issue services that come with assembling a personal computer. Building a computer can be a very rewarding experience but due to the vast number of components available today and many new yet to come, this process can become very tedious since all the selected components of computer need to be compatible with each other. It is where this project fits in where users can select the components they wish without the hassle of searching for compatible parts. Secondly the assembler can experiment with various components and see their compatibility and also compare their performance. Hence the aim of our project is to help users find computer parts and aid them in building their own personal computer.

Index Terms— Assemble, Compatibilty, Components, Computer, E-Commerce, Performance, Website.

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1 INTRODUCTION

P REVIOSLY Computers had been used only as a tool to perform calculations but nowadays due to reduced size of transistors we can fit millions and billions of them in a processor which can do lot more than few calculations done way earlier when computers were introduced. In today's generation, computers are incorporated in every aspect of business domains like banking, stock exchanges, health care, education, scientific research, space exploration and so on.

Computers are so integrated in every field that it has become essential to know all the basic components in order to fit computers together. Every computer has its own specifications and the use of these specifications changes according to the change in fields. For example, video editing and content creation require very high configuration computers unlike the simple computers. Therefore, this project will be built with a purpose to recommend a solution to its users in assembling computes suited to their needs.

Nowadays it has become easy enough to find either a computer shop or online sites that sell many computer components and assembly services with various prices that they offer to consumers. However, a consumer needs to buy items not only at the best price, but also expects the best quality possible. So, in all the major aim of this project is helping the user to tackle the computer assembling issues and get a better price from building a computer that suits their needs.

1.1 Problem Definition

There may arise many problems while assembling PC's because all the selected parts should be compatible. Assembling misconfigured systems might potentially damage the components. There are websites which sell preconfigured systems but they are limited to specific set of hardware and they are not upgradable, even if the system was upgraded it would void the warranty.

There are many retail stores which sell the computers assembled to your wish but they are also generally limited to availability of certain components or out of stock. Industries like dell

and HP sell computers which can be assembled online and get delivered to them, but they usually come with expensive price tag.

E-commerce giants like Flipkart and Amazon sell these computer components but they provide no compatible support for selected products. They don't consist of any sort assembly method or compatibility algorithms.

This Project aids the above-mentioned problems. Using this project customers can order required component and this website will automatically recommend the compatible parts to that component. In case the customer selects an incompatible part, the website notifies him/her regarding the same.

For example, Intel Processor like Core i7 7700k is not compatible with any motherboard with z370 chipsets and also their socket types may even vary. Potentially this configuration might even damage the processor or the mother board. This Processor is supported in z270 chipset platform with socket LGA 1151. So basically, this project assists in selecting the appropriate computer parts and also helps in preventing the damage that could be caused by selection of unsuitable parts. Hence any novice user can take advantage of this project to assemble his/her own Personal Computer.

2 PROPOSED SYSTEM

Our Website is not restricted to any professional users, any novice users can take advantage of our services. Since computing world has thousands of different components searching for requisite parts can be difficult, hence the implementation of search algorithms can make this task bit easier.

In order to accommodate all the data of the components we will be using SQL as database, which has extensive collection of complex data manipulation tools.

Following is the scope of our project

1) Features of components: In E-Commerce websites details of computer parts are not specified accurately. Our project aims to create a consistent, accurate and benchmarks of each computer components in detail.

2) Comparison of products: You can contrast between dif-

ferent components to select the best suited for your systems.

3) Compatibilty guidance: This is the crucial element of the project, where any novice user can use our service to assemble perfect system for their needs.

In this proposed system, we will create a web application for selecting and assembling various computer components. This application will contain constraints like Admin& Users, where admin will log into the website, check the available stock, add or delete various component categories, update the product list as well as the product prices. User can log into the website and search for the required components, compare similar component prices and as well as assemble his/her own computer using the option 'New Build'.
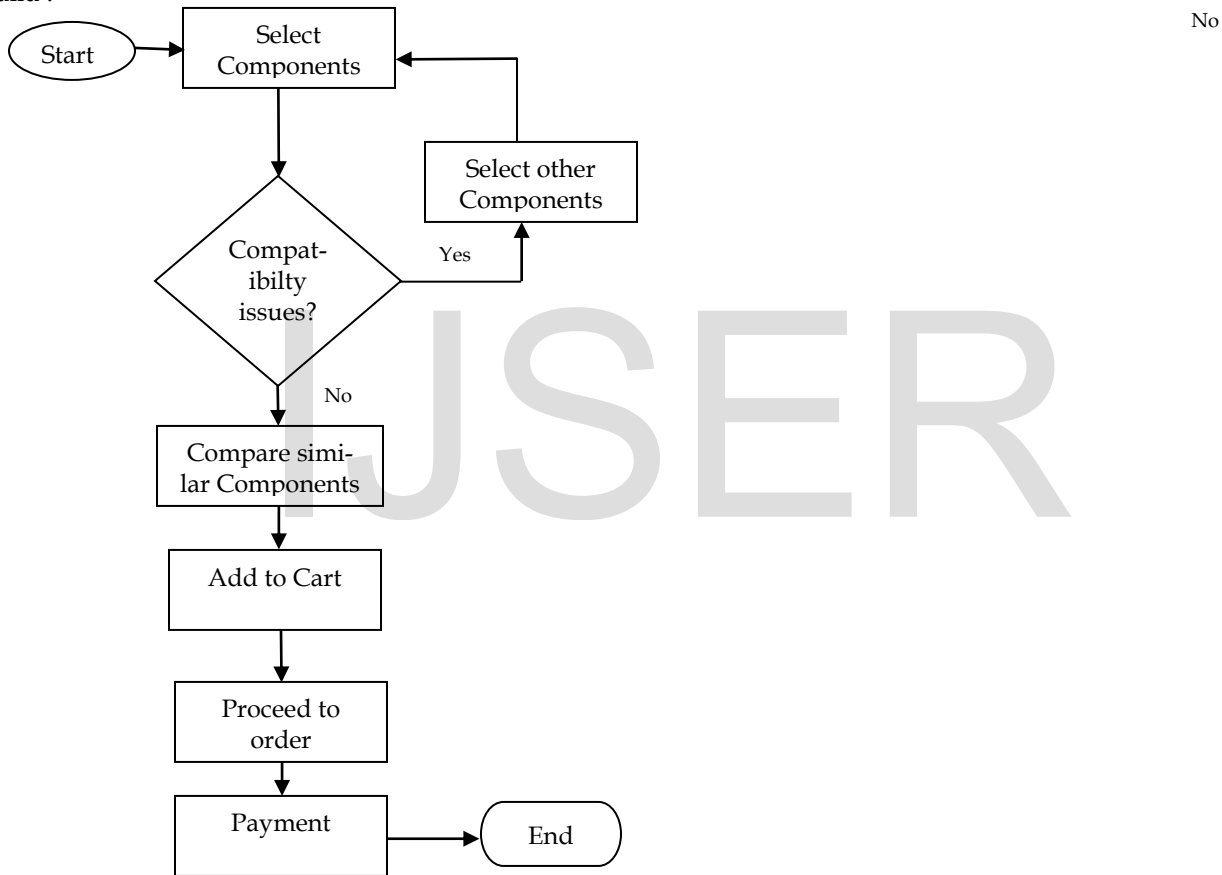

Fig.1 Flowchart of working Website

2 ALGORITHM

2.1 Compatiblity Algorithm

Compatibilty algorithm works by comparing different attributes of PC components. Algorithm is designed to compare or verify the attributes to all the selected components.

For example, algorithm decides if processor and motherboard are compatible by comparing their supported socket numbers. AMD's Ryzen line up of processors are compatible only with motherboard supported by AM4 sockets.

Fig.2 Flowchart for Compatibilty Check

2.2 Search Engine

Since this website contains thousands of PC components searching them manually would be difficult, hence an open source search algorithm will make this task qite easier.

Lucene is one of Apache open source search engine toolkit. It is a full text search engine framework that provides complete search over database. It also provides API to index documents and files.
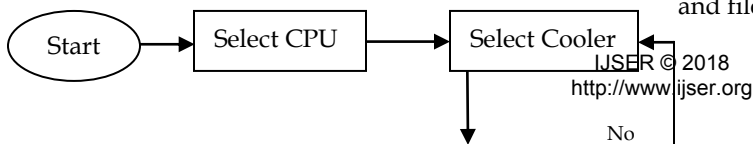
Lucene works by storing the text data in inverted index data structure. Data is analysed before storing it into database.

4 CONCLUSION

In this world computers are used in almost all the fields. Due to this growing demand it has become essential for all individuals to have a basic knowledge of different components of computers. Although there are many E-commerce websites selling all required parts for computers they do not provide with information of which components are best suited with each other. Also, there are pre-built systems available in websites although they do not have any hassle of assembling all parts individually, their performance is generally capped off. This is where our project eliminates the drawback. This website will provide computer part selection, compatibility guidance and comparison between different products for do-it-yourself computer builders. Assemble the virtual parts and website will provide compatibility guidance. Parts list are broken down by filterable categories to ensure that users include all the necessary components. Automatic compatibility guidance limits choices to parts known to be compatible and warns users if incompatible parts are detected. Hence by initial research we can conclude that this website will help any novice user to assemble his/her computer without the risk of damaging the components.

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