TITLE PAGE**DESIGN AND SIMULATION OF COMPUTER PIAGONISTIC SYSTEM (A CASE STUDY OF IBM PG)A PROJECT SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCEINSTITUTE OF MANAGEMENT AND TECHNOLOGY (I.M.T) ENUGU.BYABIAZIEM ERNEST NCS/N2003/068IN PATIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF ORDINARY NATIONAL DIPLOMA (OND) IN COMPUTER SCIENCE.APPROVAL PAGECOMPUTER SCIENCE DEPARTMENT INTITUTE FO MANAGEMENT AND TECHNOLOGY ENUGUPROJECT BYABIAZIEM ERNEST NCS/N2003/068TITLEDDESIGN AND SIMULATION OF A COMPUTER SYSTEM DIAGNOSTIC SYSTEM HAS BEEN DULY CERTIFIED TO URSET REQUIREEMNTS SET FOR THE AWARD OF ORDINARY DIPLOMA IN COMPUTER SCIENCE AND SUCH HAS BEEN APPROVED………………………… …..…………………….Dr OZOAGU DR ISZ ANEKE**SUPERVISOR HEAD OF DEPARTMENT**…………………………………….EXTERNAL SUPERVISORDEDICATION**THIS WORK IS DEDICATED TO ALMIGHTY GOD AND THOSE WHO CHERISH PEACE AND TEND TO RECIPROCRATE THE SPIRIT OF NATIOANL SOLIDARITY.AND TO ALL MY FRIENDS AND WELL WISHERS AND TO MY ROLE MODELS AND ALSO TO ALL MEN OF GOOD WILL.ACKNOWLEDGEEMENTIn the course of my study, I’ve come across several people that gave me words of encouragement and to whom I owe immense gratitude.Special gratitude goes to my parents Dr and Pastor OE Abiazieu (JP) for making my stay in school a reality. I also thank those who always put me in their prayers.I owe a lot to Mr. Iszy Aneke my H.O.D, MR Ozoagu my supervisor whose life has been a role model to me, Mrs. Mercy Okoerie and the entire staff of computer science department, I.M.T. Enugu. ABSTRACTThis work has been designed to assist computer engineers to effectively diagnose problems in computer sub-systems, such as hard disk, floppy disk drives, monitors, keyboard, etc.Equipped with this system, the user can easily detect when a particularly subsystem is faulty. This program is developed with Qbasic programming language and is designed to run in any IBM-Basic programming language, it is also designed to run in any IBM Capable computer loaded with MS-DOS. A flow chart is used to enhance the understanding of the program. The program is structured to actualize the objectives of the design. Some graphic features in the design makes the whole design a palatable an isolating faulty components has been reduced.TABLE OF CONTENTTITLE PAGEAPPROVAL PAGEDEDICATIONACKNOWLEDGEMENTABSTRACTTABLE OF CONTENTCHAPTER ONEINTRODUCTIONTHE STATEMENT OF THE PROBLEMPURPOSE OF THE STUDYTHE DELIMITATIONTHE LIMITATIONASSUMPTIONDEFINITION OF TERMSCHAPTER TWO LITERATURE REVIEWCHAPTER THREE: DESCRIPTION AND ANALYSIS OF THE EXISTING SYSTEM FACT FINDING METHODS USED OBJECTIVES OF THE EXISTING SYSTEM INPUT PROCESS AND OUTPUT ANALYSIS INFORMATION FLOW DIAGRAM PROBLEM OF THE EXISTING SYSTEMJUSTIFICATION OF THE NEW SYSTEMCHAPTER FOUR: DESIGN OF THE NEW SYSTEM OUTPUT SPECIFICATION AND DESIGN INPUT SPECIFICATIONS AND DESIGN. FILE DESIGN PROCEDURE CHART SYSTEM FLOW CHART SYSTEM REQUIREMENTCHAPTER FIVE: IMPLEMENTATION PROGRAM DESIGN PROGRAM FLOWCHARTS PSEUDO CODES SOURCE PROGRAMTEST RUNCHAPTER SIX DOCUMENTATION SYSTEM DOCU- PROGRAM DOCU USER DOCUCHAPTER SEVEN SUMMARY, CONCLUSION AND RECOMMENDATIONS SUMMARY CONCLUSION RECOMMENDATIONBIBLOGRAPHYCHAPTER ONEINTRODUCTIONNo matter the level of computer literacy, this is little likelihood that the following phrase needs to be explained. “the computer is down”It has been a common complaint the words conforms up visions of a pertinent machine gone on the micro equivalent of a sit down strike. Perhaps, it will be up and rounding later on, like a good diagnostic procedure is carried out using the diagnostic procedure is carried out using the diagnostic program. Eventually, we lean that the computer is once again back in operation. But what we don’t learn, is that the trouble really was not the computerizes fault at all. Instead on operators error lured it to perform in an unexpected moreover. Then it became necessary to shut down the system while the error was traced, isolated and corrected. Infact, the computer machine is one of the most reliable machines ever made. It has almost knowing parts, so there is very little to get of our alignment. Its electronic components do not demand periodic adjustments. And since it really has no brain of its own, it just cannot make its own mistakes. It does only what it is told, that is “gabbage in gabbage out” Given a minimal amount of care and a decent operating environment, it should provide years of trouble- free , error-true services. No one can say that the computer system never break down, some components may indeed fail now and then, yet far more often a “computer is down” problems can be traced to human error, and while that may make he problem no less frustration. It does make it much simpler to solve. Needless to say, an actual hardware failure may require the services of skilled personnel. However, an apparent failures requires within more than a moments attentions by the user. With the help of this diagnostic program that helps him or her test the different sub-systems of the computer to isolate, trace and correct the error, the conception of a moments attention will yield. When making a list of all the factors that revolves around the computer is down problem, we must not forget to include our human causes at the top of the list. Next is the consideration of the various external devices, followed by the internal devices with moving parts. After that, it is apt to the display.Finally when all else fails to be associated the problem or rather, when we begin to suspect the computer itself. So our prioritized suspect list may look something of this nature. 1 – human error (such as forgetting to turn the power on, plug the display on a wrong socket etc.) 2 – External devices (like printer out of paper, liquid spilled on diskette etc) 3- Internal parts movable ones (suspect the hard disk) 4 - Display devices (check the display card or display unit) 5- The computer itself (almost likely a fault chip)**1.1 STATEMENT OF THE PROBLEM**In the design of this computerized diagnostic programming, there are so many hardware problems being encountered by operations such as whenYour system does not recall howYour disk drive has not learnt how to writeYour display is blockYour modern is not feeling communicative Your printer will not take a letter Your system will not take a letterYour system has recently discovered some new ways to frustrate what ever it is, you are trying to do Sometimes, the computer will not give any response when switched on, the computer tries half-heartedly as it may flash an information (?) display on the screen, such as 2c 30I or perhaps; 0400200800 code, or may be even DEVICE TIME out in 130. Any of these or countries other codes message or audio beeps may be heard, and each indicates dust where the problem is. These error messages or codes put the computer operator of his work, because when happens he needs a specialist to help. For example, the message seen above tell you that a key struck a memory chip have placed, and that you forget him something on. You trust have to know how to read between the number with all those keys, chips and the external device you have plugged in, the error messages became a very efficient way of pointing to the troubled sport Armed with diagnostic program (if completed), one should be able to filed the problem and fix it quickly.**1.2 THE PURPOSE OF THE STUDY** The purpose of this study is to investigate and develop diagnostic program that helps in tentatively faulty sub-system in the computer. Reads out and modifies computer system configuration and provides a database for computer error codes and associated faulty devices. **1.3 THE DELIMITATIONS** The delimitations which is the act of the scope of the work, would be basically restricted to all IBM PC at compatible machines. Also within the scope of this study is intra-system compatibility involving the following computer system architectural design. ISA/MCA COMPATIBILITY- Upward compatibility is good but not great, that is, most external devices-display, printers, modes etc, will work with ISA and MCA systems. EISA/MCA COMPATIBILITY- The conditions just described apply as well to ELSA and MCA systems.**1.4 THE LIMITATION** In carrying out this study, the research project was limited by the non availability of adequate software that will enable the writing of a program that will enhance the fault lactating in a computer mother board. The network configuration and data communication between different workstations is not considered, due to the security of the operating systems that runs the different network systems. Non –availability of software coupled with high cost of living due to the present economic squeeze, high transport fares during the research at some programs, engaged in serious activities or exercise of this very sort pose a lot of financial problems.**1.5 ASSUMPTIONS** The assumption held during this project is that the program used in this diagnosis is compatible to all PC AT systems. Systems to be tested should be ISA or ELSA types. **1.5 DEFINITION OF TERMS** A fair amount of computer terms will be encountered throughout this project, with most terms explained just before their official introduction in the text. Here are a few samples of terms, that will show up over again, both here and elsewhere:BITS AND BYTES- A bit (binary digit) represents the smallest possible storage unit used in computer system. Each bit can represent either a binary digit o or binary digit I. Byte is used to describe a quantity o eight bits. 1 kilobyte - 1,000 bytes 1 megabyte - 1,000,000 bytes 1 gigabyte - 1,000,000,000 bytesboot and Booting procedure – A personal computer is said to boot itself on because when power is first supplied, a program automatically loaded into memory . the small program loads a larger program and the system pulls itself up by its own electronic boots types. RAM -Random Access Memory ROM - Read only memory ROM BIOS - Rom Basic input and output systems POST - (Power on self test). The series of systems check that are performed every time a pc is powered on. That duplex partitioning to a data communication link in which information maybe transmitted in only one direction at a time.PARITY- in a computer, the conversion of adding 1 to a byte so that the total number of bytes is always even (even parity) (or add odd parity).PIXEL – (PICTURES) Elements on a display scene, the smallest area whose colours and intensity can be separately controlled . although the picture elements are considered to be a point, it is actually composed of three phosphor date-red, green and black- that may be individually controlled to create the desired colour.SCSI- (Small computer system interface). An expansion has system used as an interface between the pc and a hard disk and other devices.MEMMORY- This is the part of the computer in which data is stored for later retrieval. The contents of a memory may be permanently fixed (ROM) of changeable.