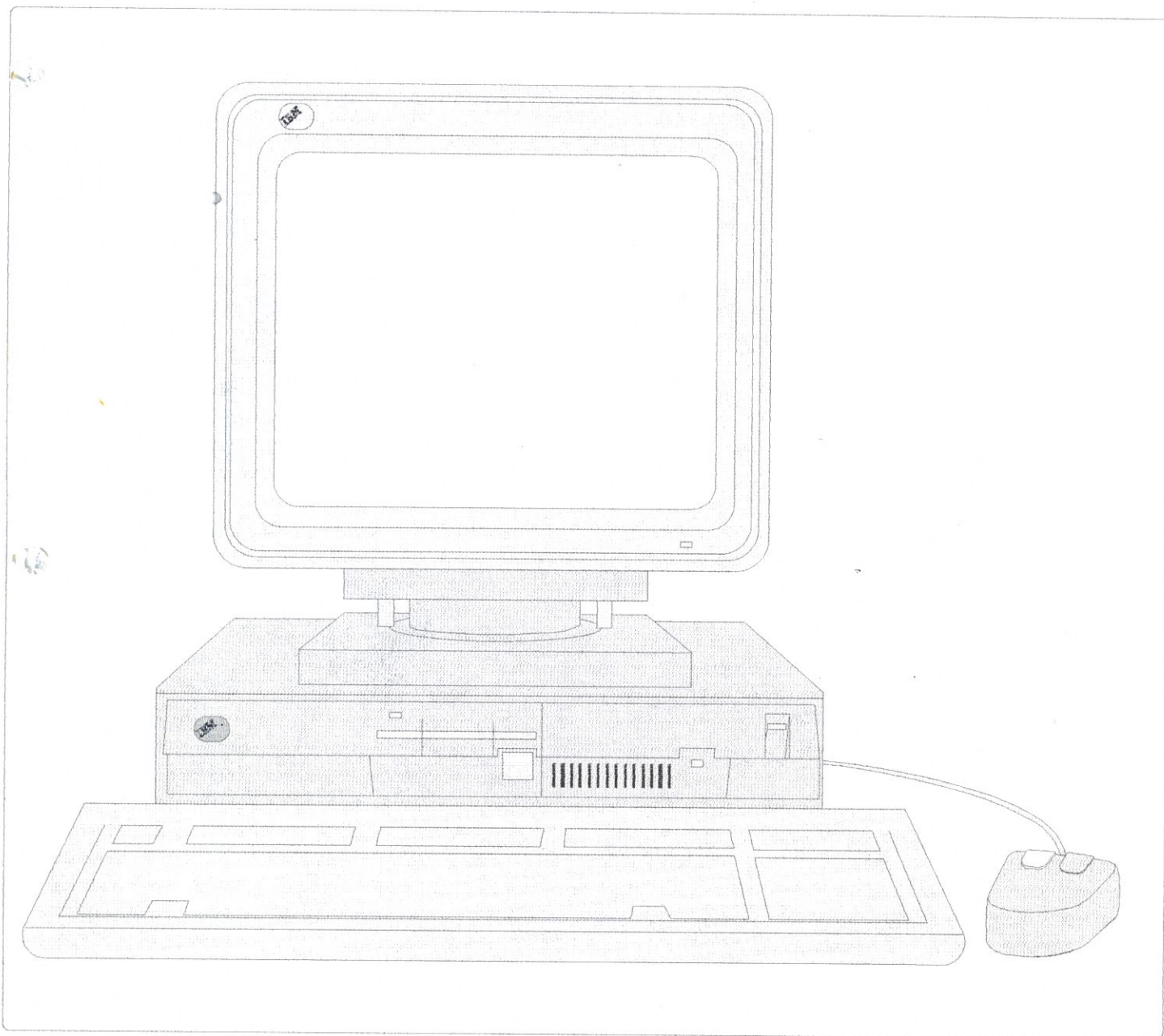


PROJECT

3 8 6



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INTRODUCTION

During the Summer term of 1996, I felt I needed a bigger challenge during my IT lessons, so I asked my master if I could have permission to build my own PC during lessons. I was pleased when he agreed. Before I could start, I had to talk my parents around - as they would be funding the project. Luckily they agreed as long as I kept my prices as low as possible.

I now had to do some reasearch,

- i) What model was I going to build
- ii) What parts did I need
- iii) Where could I obtain the cheapest parts.

I decided on a 386 because my brother needed a simple, basic, computer, primarily for word-processing tasks(and the odd game or two!).

List Of Parts

I worked out I would need the following parts:-

- 1X386 SX 40 Motherboard & CPU
- 4X1 MB 30 pin SIMM modules
- 1X512K VGA Graphics Adaptor
- 1XDesktop Case
- 1XKeyboard
- 1XHard Disk
- 1XFloppy Drive
- 1XVGA 14" Monitor
- 1XI/O Controler Card
- 1XMouse
- 1XInternal Hard Disk Ribbon Cable
- 1XInternal Floppy Disk Ribbon Cable
- 2XPowerleads

Of these I already had spare:-

- 1XKeyboard
- 1XHard Disk
- 1XVGA 14" Monitor
- 1XInternal Hard Disk Ribbon Cable
- 2XPowerleads

Here is a pricelist for the parts I had to buy and whether they were new or second hand:-

<i>1X386 SX 40 Motherboard & CPU</i>	2H £30.00
<i>4X1 MB 30 pin SIMM modules</i>	2H £40.00
<i>1X512K VGA Graphics Adaptor</i>	NW £37.00
<i>1XDesktop Case</i>	NW £39.99
<i>1XFloppy Drive</i>	NW £21.56
<i>1XI/O Controler Card</i>	2H £10.00

1XMouse	NW	£07.99
1XInternal Floppy Disk Ribbon Cable	2H	£00.50
TOTAL COST		£187.04



Step 1

Step one of the project was to obtain all the parts listed previously. I aquired most of them from Micro Computer Mart and from computer fairs.



Step 2

Step two was to affix the motherboard into the case. You do this by:-

- i) Remove the case's outer covering
- ii) Take the motherboard out of its static envelope
- iii) From the pack of screws etc. that come with the case take out four or more white plastic motherboard clips (the amount depends on the case and motherboard, but four should be a minimum - see problems), these lift the motherboard away from the metal case thus preventing short circuits.
- iv) Connect power leads P8 and P9 from the case's power supply to the motherboard making sure they are in the right sockets.
- v) You have just installed a motherboard!



Step 3

Step three is to plug in the memory, you do this as follows:-

- i) Take off the case's covering (as in the motherboard's installation).
- ii) Locate the memory sockets on the motherboard (these are usually about nine+ centimetres - depending on whether you have thirty or seventy-two pin SIMMS).
- iii) Click these SIMMS in sideways by sliding them in at a diagonal and then pushing forward until a click is heard and the memory is locked in position.
- iv) You have now installed your memory and your motherboard!

Step 4

Step four is to install your Input/Output(I/O)card and to install your VGA card, this is done as follows:-

- i)Remove the case
- ii)Remove two cover slots from the back of the case.
- iii)**Gently** inset the two cards, this may take some time so wiggle them; be gentle and patient, into the ISA slots in the computer. These slots are black and vary in length depending on wheather they are 8BIT or 16BIT.
- iv)Use the screws that come with the case to screw in the cards so that they do not become loose.
- v)You now have the basics of a computer!

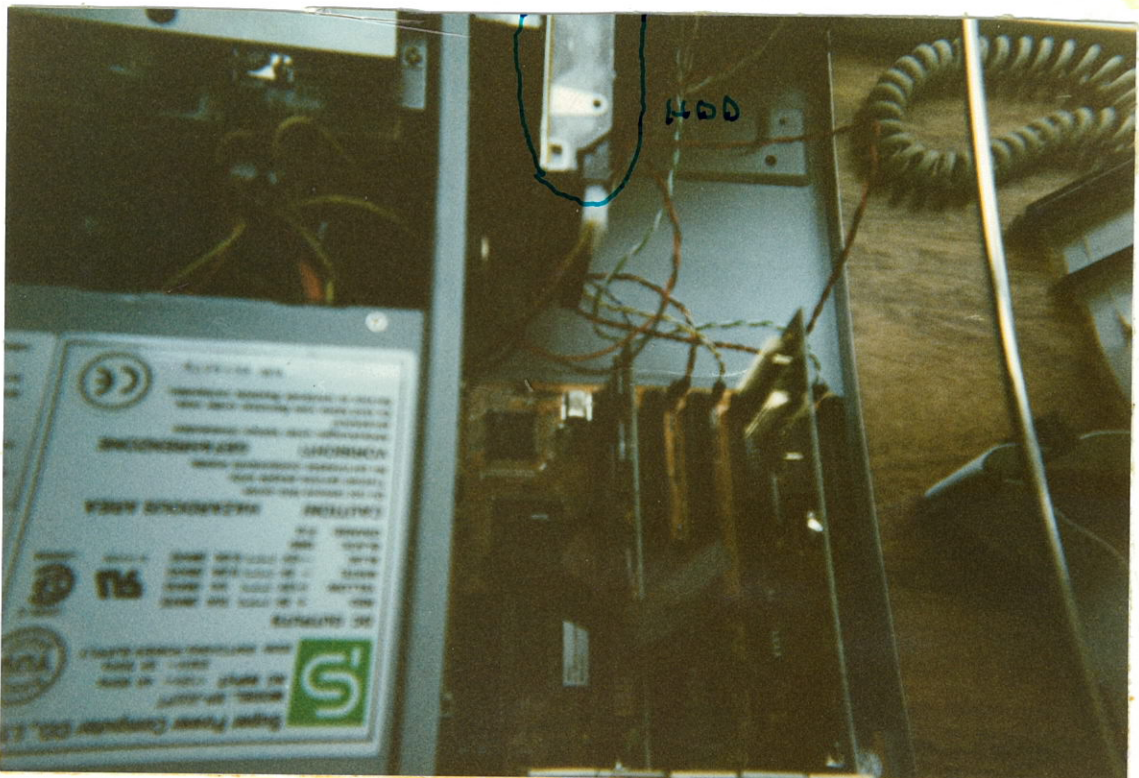
NOTE:IF YOU WERE TO NOW TEST THE COMPUTER YOU WOULD GET A "NON SYSTEM DISK ERROR" BECUASE YOU HAVE NOT INSTALLED ANY DRIVES, THIS IS NEXT.

Step 5

Step five is to install the hard disk and floppy disk drives, first we will deal with the floppy disk:-

- i) Remove the case's outer covering.
- ii) Locate a free 3.5" floppy disk drive bay, located on the front.
- iii) Remove the plastic covering by pressing the two side clips.
- iv) Insert the floppy drive.
- v) Screw in the floppy drive using the case's screws.
- vi) Plug a power lead from the power supply into the drive.
- vii) With the cables that came with the motherboard plug in the floppy drive to the I/O card.

The Hard Disk Is Inserted In The Same Way Except There Is No Step iii).



Step 6

Step six is the penultimate step, plug in the ports that came with the I/O card. This is done by removing the metal covering the port holes, and screwing the ports in. After this had been done plug the ports into the I/O card with their attached cables.

Step 7

Step seven is the final case. Replace the case's cover. plug in the keyboard, mouse, and monitor and away you go, you have built yourself a PC. Now all you have to do is plug in the power cables and it SHOULD work!



The Problems

During the building of the computer I encountered four problems, firstly no money(which was solved!) secondly the motherboard seemed to have no power thirdly the motherboard kept on shorting after problem three was fixed and four, the picture on the monitor was screwed.

We'll ignore problem one as it was not technically technical and start with problem two. This problem was quite simply that when I plugged the power into the motherboard I put the two wires the wrong way around.

Problem three was that I did not put enough motherboard clips on to hold the motherboard away from the metal case, easily solved.

And finally problem four was that when I put the VGA card into the computer I had scratched the bottom of the card this was solved with a guarantee with the shop I bought it from.

NOTE:WHEN BUILDING A COMPUTER IT IS ADVISABLE TO WEAR AN ANTI-STATIC WRIST BAND TO PREVENT YOU DAMAGING THE CIRCUITRY! THESE COST VERY LITTLE COMPARED TO THE COST OF THE MOTHERBOARD!

