



# CCS-NW Christmas & New Year quiz 2020

What a year!

I remember back in February, wondering if we should cancel the March lecture in Manchester. And then worrying if we had been too hasty. That was very soon taken out of our hands. And just when we thought it could not get any worse and we could try to enjoy Christmas, it did.

For the quizzes in the last couple of years, I used photos from places I visited during that year. This year, I have been on a few “virtual trips” via my laptop. It has been fascinating and has taken me down so many interesting rabbit holes. I have also received help and suggestions from several people. I will acknowledge them later, with the answers.

Try not to use Google too quickly, remember “You are only cheating yourself”.

I apologise for any errors, which will probably be mine. I will publish the answers sometime in January.

We all hope that you and your families are keeping healthy and fit. And sane.  
Good luck, Merry Christmas, and Happy (and better) New Year to all.

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*Chair, CCS NW Group.*

## Were you paying attention?

A few questions relating to the presentations this year. Some are from Manchester talks, some from London and several were Zoom talks. So, do not worry, you may not have seen them all.

1. Who was tied to a tank?
2. Which computer took to the dance floor?
3. Computer / Computer? (Let's call the whole thing off).
4. What was a scritch?
5. Where might you have seen a clod?
6. What had a mushroom on top?
7. What can be installed anywhere?
8. Who had a fur hat?
9. When did a lift cause a nuisance?
10. What or who went on the Manchester Guardian train?
11. What was in a container at Rotterdam?

## Mechanicals

Even before (and after) electronics burst upon the scene, there were some amazing devices. Can you identify these?



#1



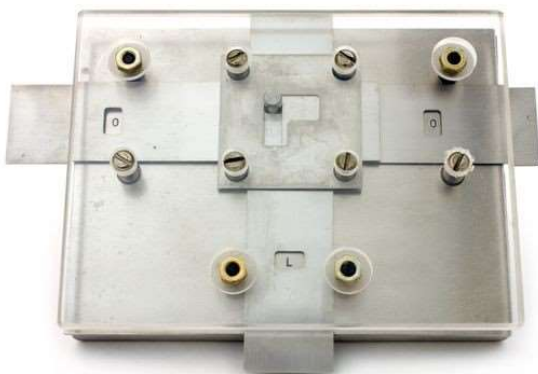
#2



#3



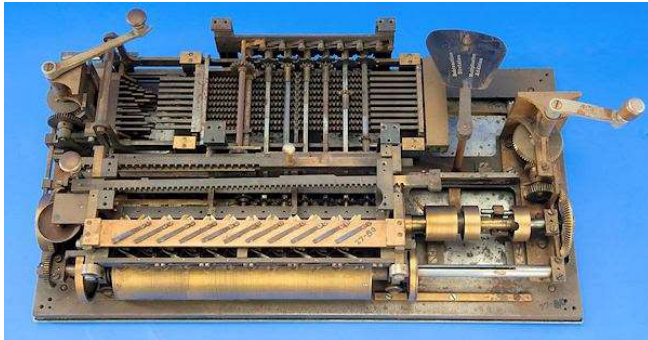
#4



#5



#6



#7



#8

## Coding

Programming languages and other codes. Some old, some new, some easy, others ...?

Can you identify:

1.
 

```
begin real x,y,w;integer k;
  x := 5/13; y := 12/13;
  for k := 1 step 1 until 1000 do
    begin u := 0.6 × x - 0.8 × y;
          y := 0.8 × x + 0.6 × y;
          x := u;
    end
  end
end
```
2.
 

```
DEFINE ((
  (FACTORIAL (LAMDA (N) (COND ((ZEROP) N 1)
    (T (TIMES N (FACTORIAL (SUB1 N) ))) )))
  ))
```
3.
 

```
IF SUMMMARY = "YES"
THEN
  BEGIN
    ASSIGN_FILE(NAME=DATA, LNA=INPUT)
    CREATE_FILE(LNAME=OUTPUT)
    ENTER SELECT_DATA_SUMMARY
    SAVE_FILE(*OUTPUT)
  END
FI
```
4.
 

```
routine Gaussquad [real a , b , I , function f]
  ref I
  $ let s = (b - a)
    I := s(.27778 f[a + .11270s] +
      .44444 f[a + .50000s] +
      .27778 f[a + .88730s] )
  $
```

5.

```

proc innerproduct = (proc(int)real a, b, int k, ref real y) void:
  begin loc real s := 0;
    for i to k do s+ := a(i) * b(i) od;
    y := s
  end;

```

6.

```

ROUTINE [AS] ≡ SET MASK
  B3 = B1 & *00003700
  SHIFT B3 DOWN 4           ,| HALFWORD NUMBER IN THE LIST
  B3 = B3 + *00040000       ,| ADDRESS TO BE MODIFIED
  B5 = B1 & 15              ,| BIT NUMBER
  B4 = 0.01
  SHIFT B4 UP B5
  (B3) = (B3) V B4
  END

```

7.

INSTRUCTIONS					
MAGNETIC			ELECTRONIC		
0	/	tn → Pr	//	h → W	T/s → L, 2 → M (+)
1	E	tn+1 → Pr	/E	m → S	TE FOUL
2	@	tn → Pr, tn+1 → Pr	/@	m+AL → M	T@ 65 <sup>th</sup> → L
3	A	tn → Pr, tn+1 → Pr	/A	m → S, 2 → M	TA 2 → S, 2 → A
4	:	)	/:	s → W	T: 2 → A
5	S	READ	/S	2 → S	TS FOUL
6	I	CHECK	/I	REV. A	TI s+2 → L (+)
7	U		/U	2 → S, m → L, 2 → M	TU FOUL

8.

```

select studentID, FullName, sat_score, recordUpdated
from student
where (
  studentID between 1 and 5
  or studentID = 8
  or FullName like '%Maximo%'
)
and sat_score NOT in (1000, 1400);

```

9.

```

//STEP10 EXEC PGM=IEFBR14
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSDUMP DD SYSOUT=*
//DD1 DD DSN=MATEKS.TEST.PS,
//DISP=(NEW,CATLG,DELETE),
//SPACE=(TRK,(1,1),RLSE),
//UNIT=SYSDA,
//DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=800)
/*

```



10.

```
function entry(year, calleryear, text){
  if (text != "") {
    write_entry("<td colspan=3", year, calleryear, text)
  } else {
    write_entry("<td", year, calleryear, text)
  }
}
```

11.

```
n1 = 201
n2 = 301
v99 = 0
7 v98 = vn1 x vn2
v99 = v99+v98
n1 = n1+1
n2 = n2+1
j7, 280 >= n1
```

12.

```
DO 15 I=1,20
5 IF (A(I)-B(I)) 10,15,15
10 A(I)=A(I)+1
B(I)=B(I)-2
GOTO 5
15 CONTINUE
```

13.

```
PROCESS-PARA.
  READ IN-FILE AT END
  MOVE "Y" TO EOF.
  IF EOF = "Y"
    NEXT-SENTENCE
  ELSE
    IF IN-VAR-2 IS NOT ZERO
      MOVE IN-REC TO OUT-REC
      WRITE OUT-REC.
```

14.

```
ПРОЦ СТАРТ()
  ВЫВОД: 'Привет, мир!!!'
КОН ПРОЦ
```

15.

```
DO (X) I=1,10
DO (X) I=1,10
Y A(I)=B(I) GOTO X
GOTO X
Z A(I)=0
X CONTINUE
```

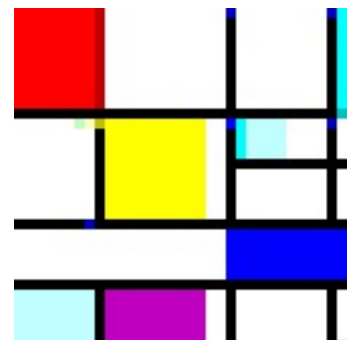
16.

```
/Times-Roman findfont
12 scalefont
setfont
newpath
100 200 moveto
(Hello World) show
```

17.

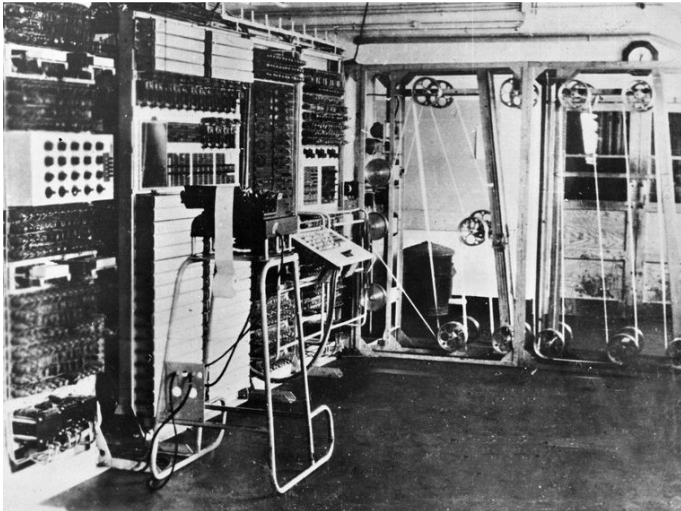
```
10 ト=0
20 入 水, 火
30 從 日 = 水 到 火
40 ト = ト+對數(日)
50 下一 日
60 印 ト
```

18.



## Manchester Computer Science (mainly)

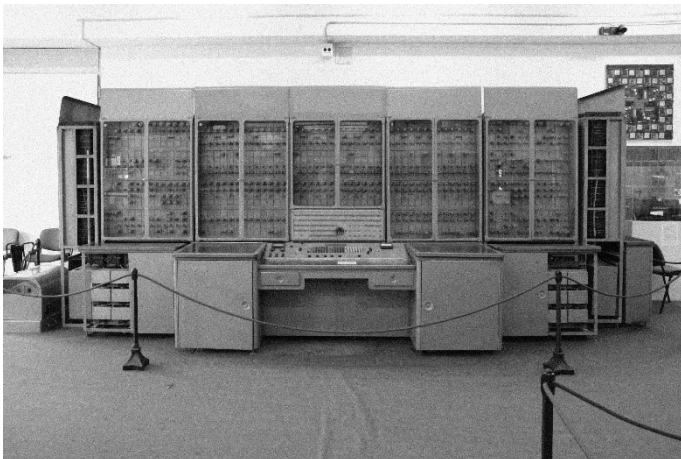
Most (not all) of these photos are from the archives at the School of Computer Science at the University of Manchester. A few are directly related to the University, but most were used for illustrative purposes. Can you identify them and/or pick out any interesting features – equipment, locations, people?



#1



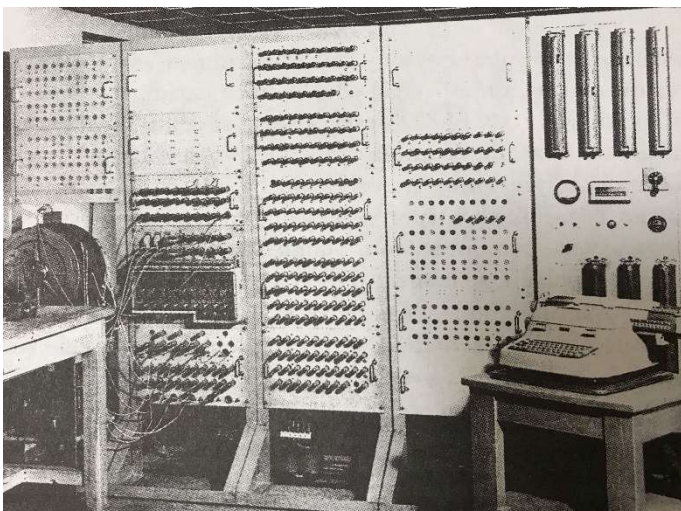
#2



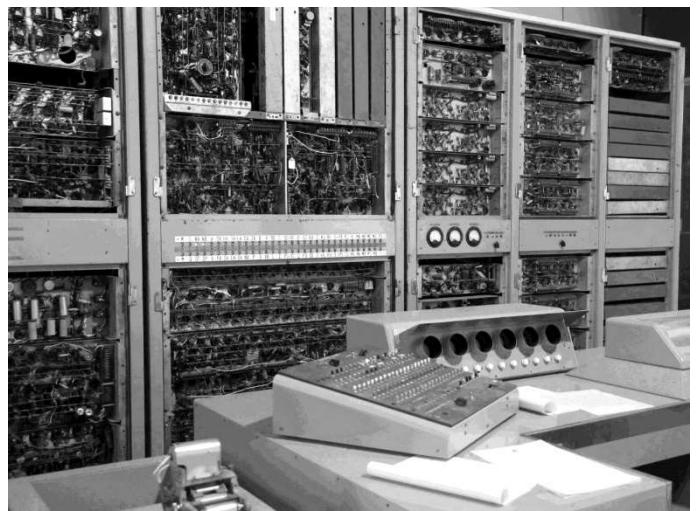
#3



#4



#5



#6

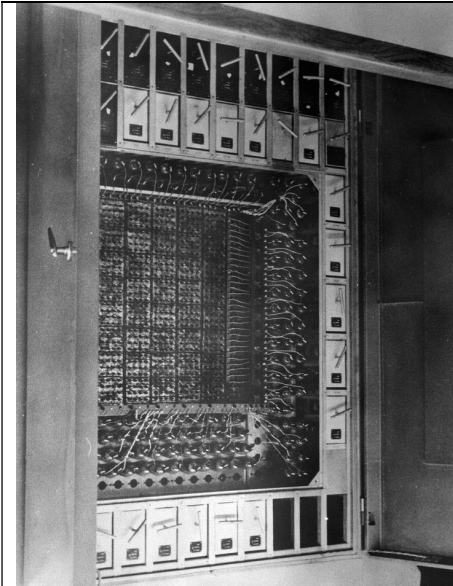




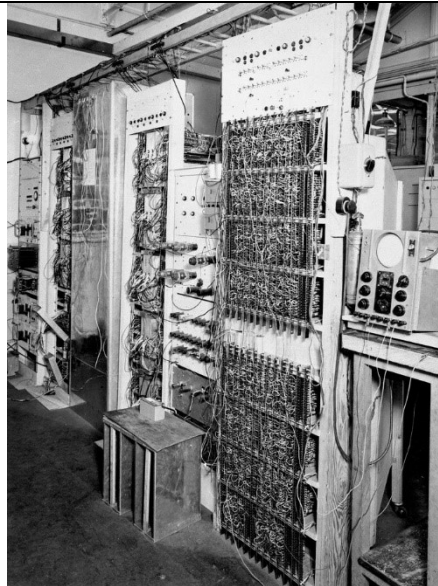
#7



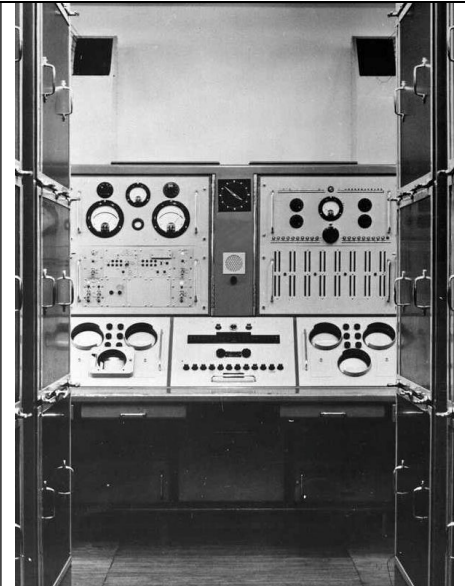
#8



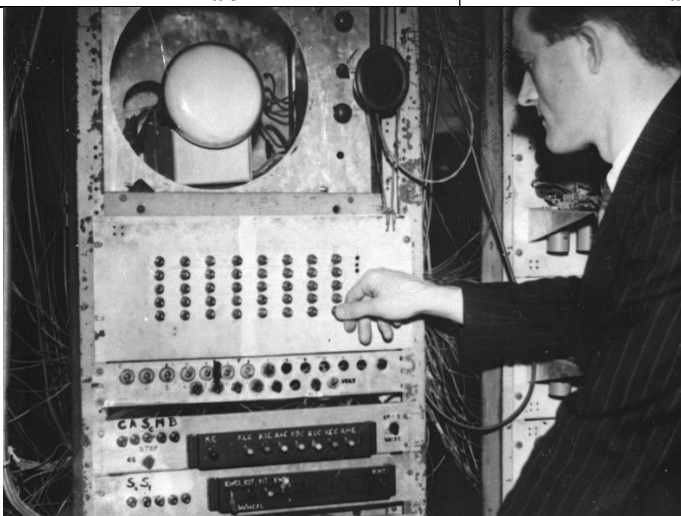
#9



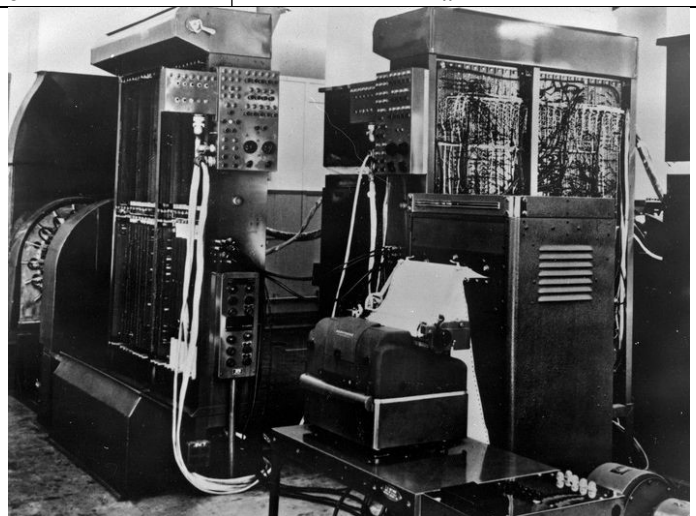
#10



#11



#12



#13





#14



#15

## A mixed bunch

- For which machines are these assembly language listings?

```

ZERO: (DUMMY OPENING PARAMETER BRACKET);
YA=1M10; SETB213; NEV; SHL+40;
JIP436=NEZ; (IF NOT IN PARAMETER LIST);
M+110; JSP441; M=110; (SET E); JIP436;
(FORMAL PROCEDURE);
SHC=24; JSP3; JSP449; (FAILURE 23/50=NO LEVEL PARAMS);
Z52M13; SHL+16; SHL+42; (NUMBER OF PARAMETERS);
M13; SHL+32; (ADDRESS OF LEVEL PARAMS); +;
SHC=6; REV; SHL+8; SHL=8;
SHL=16; SHL=8; J20;
18; =YCOM80; JSP750C8Z; EXIT1;
8; JSP409; VE16; SETB40; DUPD; AND; NEV; SHL+3;
AND; OR; JSP410; EXIT1;
3; (PROCEDURE);
DUP; SETB17; AND; J16=Z; (IF NOT TYPE PROC);
YA=1M10; DUP; SETB37; AND; SETB14;
NEV; (=0 IF BEGIN);
REV; SETB47777; AND; SETB40207;
NEV; (=0 IF IF+THEN);
40; CONT; J16=NEZ; (IF NEITHER);
*****
  
```

10205	24	999	9	0	0	0	0	01
10206	26		36	0	0	0	0	
10207	30		0	0	0	0	4	
10208	32		0	0	0	0	4	
10209	5	27	10	0	0	0	0	
10210	5	126	15	0	0	0	0	125
10211	5	126	7	0	0	0	0	125
10212	5	148	42	0	0	0	0	143
10213	78	128	98	0	0	0	0	152
10214	0	148	42	0	0	0	0	148
10215	5	999	31	0	0	0	0	
10216	10		0	0	0	0	7	RT7
10217	86	103	2	0	0	0	0	103
10218	70	112	48	0	0	0	0	102
10219	11		0	0	0	0	8	RT8
10220	80	101	2	0	0	0	0	103
10221	70	102	48	0	0	0	0	102
10222	80	103	2	0	0	0	0	103
10223	80	103	2	0	0	0	0	103
10224	71	104	2	0	0	0	0	104
10225								
10226	84	787	2	0	0	0	0	787
10227	0	999	0	0	0	0	0	
10228	10		0	0	0	0	1	
10229	5	27	2	0	0	0	0	
10230	96		0	0	0	0	0	
10231	12		0	0	0	0	40	
10232	1	999	7	0	0	0	0	
10233	31		0	0	0	0	1	
10234	09		0	0	0	0	1	

INPUT TYPE  
 23/02  
 \*THIS IS OK, EXIT  
 RT7  
 \*OK  
 RT8  
 RT11  
 \*ALAR=10  
 CLEAR SWITCH  
 TO OPEN A9  
 ALLOC ROUTE  
 54

- Where was the last KDF9 switch off?
- The CDC 1604 got its name from the ERA1103. How?
- What does yacc stand for?
- How did the name of the IBM 7090 come about?
- What was the word-length on Atlas?
- Ada is based on which earlier programming language?



## 8. Whose work was this?

Diagram for the computation by the En

Number of Operation.	Nature of Operation.	Variables acted upon.	Variables receiving results.	Indication of change in the value on any Variable.	Statement of Results.	Data.			
						$1V_1$	$1V_2$	$1V_3$	$0V_4$
						$\begin{smallmatrix} \bigcirc \\ 0 \\ 0 \\ 1 \end{smallmatrix}$	$\begin{smallmatrix} \bigcirc \\ 0 \\ 0 \\ 2 \end{smallmatrix}$	$\begin{smallmatrix} \bigcirc \\ 0 \\ 0 \\ 4 \end{smallmatrix}$	$\begin{smallmatrix} \bigcirc \\ 0 \\ 0 \\ 0 \end{smallmatrix}$
						$\boxed{1}$	$\boxed{2}$	$\boxed{n}$	$\boxed{\phantom{0}}$
1	$\times$	$1V_2 \times 1V_3$	$1V_4, 1V_5, 1V_6$	$\begin{cases} 1V_2 = 1V_2 \\ 1V_3 = 1V_3 \\ 1V_4 = 2V_4 \\ 1V_5 = 1V_5 \\ 1V_6 = 1V_6 \end{cases}$	$= 2n \dots\dots\dots$	...	2	n	$2n$
2	$-$	$1V_4 - 1V_1$	$2V_4 \dots\dots\dots$	$\begin{cases} 1V_4 = 2V_4 \\ 1V_5 = 1V_5 \\ 1V_6 = 1V_6 \end{cases}$	$= 2n - 1 \dots\dots\dots$	1	...	...	$2n - 1$
3	$+$	$1V_5 + 1V_1$	$2V_5 \dots\dots\dots$	$\begin{cases} 1V_5 = 2V_5 \\ 1V_4 = 1V_4 \\ 1V_6 = 1V_6 \end{cases}$	$= 2n + 1 \dots\dots\dots$	1	...	...	...
4	$+$	$2V_5 + 2V_4$	$1V_{11} \dots\dots\dots$	$\begin{cases} 2V_5 = 0V_5 \\ 2V_4 = 0V_4 \\ 1V_{11} = 2V_{11} \end{cases}$	$= \frac{2n-1}{2} \dots\dots\dots$	...	...	...	0
5	$+$	$1V_{11} + 1V_2$	$2V_{11} \dots\dots\dots$	$\begin{cases} 1V_{11} = 2V_{11} \\ 1V_2 = 1V_2 \\ 1V_3 = 1V_3 \end{cases}$	$= \frac{1}{2} \cdot \frac{2n-1}{2n+1} \dots\dots\dots$	...	2	...	...
6	$-$	$0V_{13} - 2V_{11}$	$1V_{12} \dots\dots\dots$	$\begin{cases} 2V_{11} = 0V_{11} \\ 0V_{13} = 1V_{13} \\ 1V_{12} = 1V_{12} \end{cases}$	$= -\frac{1}{2} \cdot \frac{2n-1}{2n+1} = A_0 \dots\dots\dots$	...	...	...	...
7	$-$	$1V_3 - 1V_1$	$1V_{10} \dots\dots\dots$	$\begin{cases} 1V_3 = 1V_3 \\ 1V_4 = 1V_4 \\ 1V_1 = 1V_1 \end{cases}$	$= n - 1 (= 3) \dots\dots\dots$	1	...	n	...
8	$+$	$1V_2 + 0V_2$	$1V_7 \dots\dots\dots$	$\begin{cases} 1V_2 = 1V_2 \\ 0V_2 = 1V_2 \end{cases}$	$= 2 + 0 = 2 \dots\dots\dots$	...	2	...	...

9. The IBM 1620 had the in-house name "CADET". "CADET" was reverse engineered into an acronym. But what did "CADET" stand for?
10. What was Dijkstra's primitive for synchronisation called?
11. Which computer was used in the BBC Domesday project?
12. The name "IBM" was famously reverse-engineered by IBM staff into what? (I'm also aware of an acronym used elsewhere, but we'll leave that one out)
13. The name "ICL" was also famously reverse-engineered (by IBM staff??) into what?
14. Which organisation was the last user of George3 in the UK?
15. Who was the chief designer of Multivac?