

Andrew Virnolds 4B 4PI

$$10 + 9 + 8 + 9 + 7$$

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Summer Examinations 1984

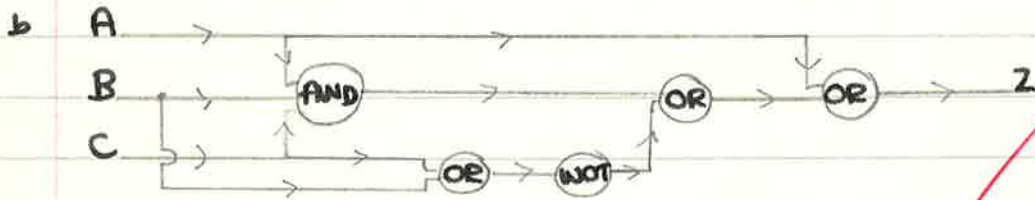
Computer Studies Paper II

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85%

1a

Inputs			Outputs				
A	B	C	E	F	G	H	I
0	0	0	1	0	1	1	1
0	0	0	1				
0	1	0	1	0	1	1	1
1	0	0	0	0	0	0	0
0	0	1	1	0	1	1	0
0	1	1	1	0	1	1	0
1	0	1	0	0	0	0	0
1	1	0	0	1	1	1	1
1	1	1	0	1	1	1	0



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2.c) Algorithm

1. Print Information
2. Do Calculations for each player
3. Print Result

1st Refinement

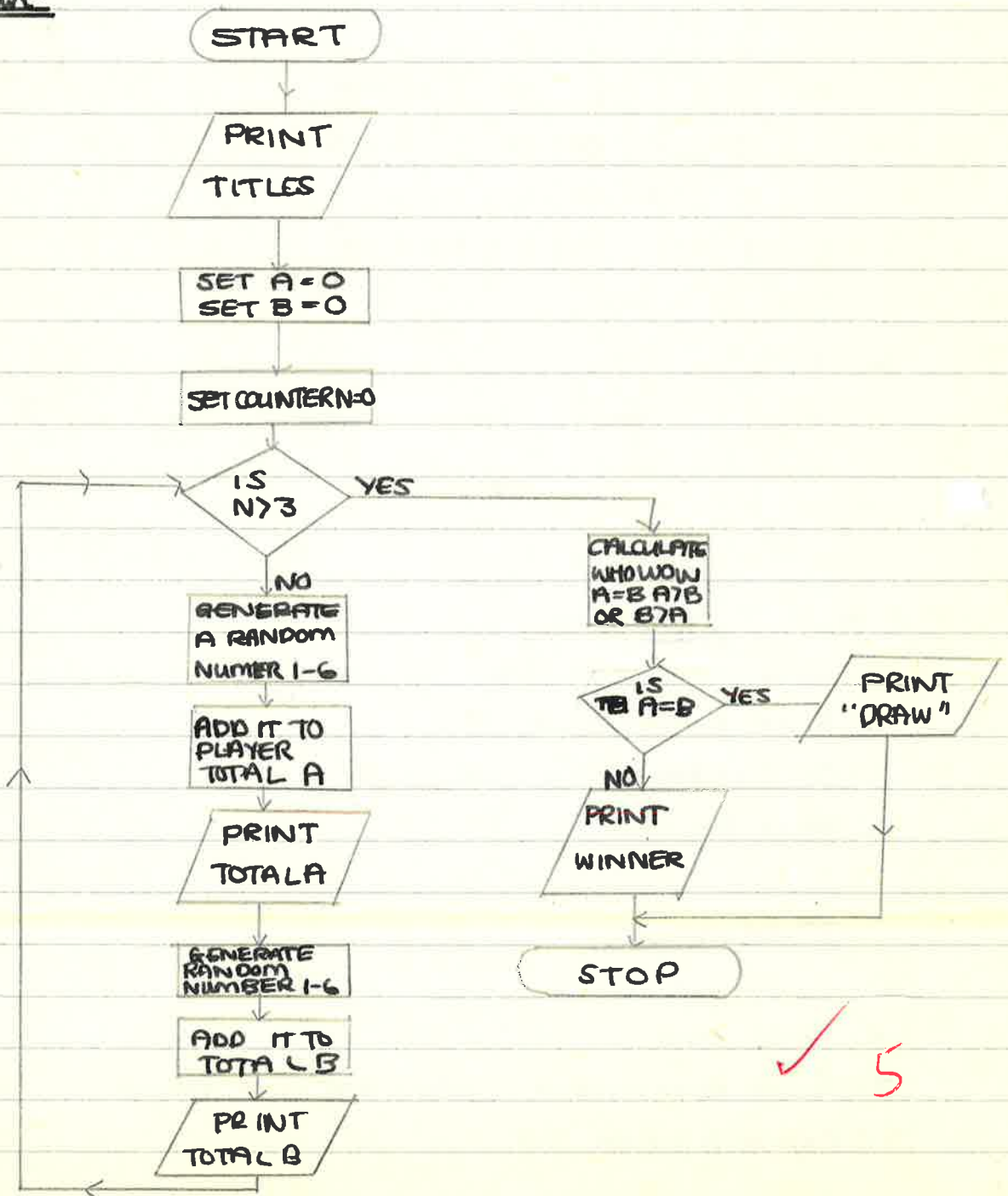
1. Print title
- 2.1 Think of a random number for each player.
- 2.2 Repeat 3 times 2.1

3 Print Result

2nd Refinement

1. Print what the program is going to do.
- 2.1 Think of a random number from 1-6 for each player
- 2.2 Add it on to players total
- 2.2.5 Print It.
- 2.3 Repeat 3 times - 2.1, 2.2, 2.2.5
- 3.1 Print result
- 3.1.5 calculate whether it has been won or drawn
- 3.2 Print Winner, or draw if draw

Flowchart:



3. a) MICR and OCR

M.I.C.R. stands for Magnetic Ink Character Recognition. It can detect and read numbers and letters written in special magnetic ink which contains particles of iron.

O.C.R stands for optical character recognition, and uses light reflected off the paper to read print on the paper printed in normal alphanumeric characters.

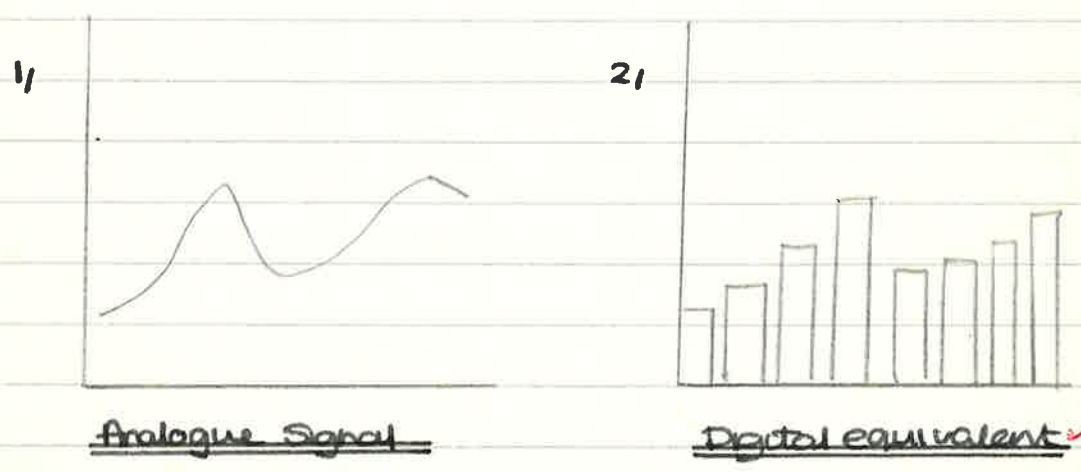
MICR is used at the bottom of cheques so that the computer at the bank can read the payees name, account No, branch No etc and alter their account without having to have all the information typed in.



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	Advantages	Disadvantages
MICR	Human Readable. Quicker and easier than typing in	Expensive - Could get demagnetised
OCR	Human Readable. Quicker and easier than typing in	Expensive - requires high quality print

c) Analogue and digital computers



Analogue computers deal with continuously variable signals, such as voice, temperature, light level etc as in graph 1

Digital computers on the other hand are only capable on handling discrete values, whole numbers as in graph 2

If a digital computer has to handle an analogue ~~any~~ signal it will need an Analogue to digital converter. An analogue computer

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would need a digital to analogue converter. An A \rightarrow D converter works by taking a continuous signal and sampling it at regular intervals as in graph ②. This will then produce discrete values. ✓

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4. 10 REM SUMMER EXAMINATION 1984.
    20 REM AREA OF A TRIANGLE.
    30 PRINT "AREA OF A TRIANGLE"
    40 PRINT "THERE ARE THREE SIDES, A,B,C"
    50 FOR L = 1 TO 10
    60 PRINT "TRIANGLE "; L
    70 PRINT: PRINT " S INPUT SIDE A - "
    80 INPUT A
    90 PRINT " ANGLE OPPOSITE SIDE A - "
    100 INPUT AA
    110 PRINT "SIDE B - "
    120 INPUT B
    130 PRINT "ANGLE OPPOSITE B - "
    140 INPUT BB
    150 PRINT "SIDE C "
    160 INPUT C
    170 PRINT " ANGLE OPPOSITE C - "
    180 INPUT CC
    190 LET S = (A+B+C)/2
    200 LET ABC = (S*(S-AA)*(S-BB)*(S-CC))↑ 0.5
    210 PRINT: PRINT " AREA OF TRIANGLE = "; ABC
    220 FOR N = 1 TO 100: NEXT N.
    230 PUT 31
    240 NEXT L
    250 END
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Good 9

In the program you have to enter the three sides, A, B, C, and the angles opposite them, pressing return after the number. Any numerical data is suitable for entry.

5a) medicine

Computers started to be introduced into the the Nation Health ~~ear~~ Hospitals in the early sixties. Their possibilities for their use in this field are endless, for everything from tuning ambulances, to keeping stock in the Pharmacy, research, and menu planning.

Two main things stand out. These are use use of computers for monitoring patients in intensive care, and the job of filing and stock control in hospitals.

Computers could be monitoring heart beat rate, blood sugar level, temperature, blood water content, toxin levels etc of the patient, and sound an alarm bell alerting doctors of a patients needs. This could no doubt save many lives.

By handling files on a computer, nurses and doctors can save a bit of time messing around with bits of paper and get on with their real job of looking after the patients. Menu planning and stock control for drugs are equally important, as the wrong diets and/or drugs could make a patient worse, not better.

Surgery timetables and planning and allocation of bed space could also be handled by a computer to save time.

If a certain type of rare blood, AB⁻ for example is needed in the transfusion service, a computer could search through records to find someone with this blood type, prints a standard letter worked out beforehand, and sends it to them, telling them their services are required, and could they come and give blood, arranging at a time and place for the donation to be given.

Computers benefit ~~and~~ the medical service in lots of ways, as you can see.

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