

DATA PROCESSING HOUSING AND POPULATION CENSUS 1993

Calculation of total number of keystrokes for the Data-entry of Forms A/B

Entity	No. of	No. of	Total no. of
		keystrokes	Entities
			keystrokes
Quest-id + GPC	22	125,000	3,625,000
Housing	12	125,000	1,500,000
<u>Person-data</u>			
General	22	1,025,000	22,550,000
Age > 10	10	684,800	6,848,000
Age > 10+work	6	250,000	1,500,000
Female Age > 12	12	100,000	1,200,000
Total			37,223,000
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+ 10% overhead			3,722,300
+ 25% rekeying/verification		10,000,000	
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GRAND TOTAL			50,945,300
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Estimated time for the Data-entry of Forms A/B

Original estimates:

Startdate: January 1, 1994

No. of operators: 28

No.keystrokes / hour: 3,000 (average)

No. of workingdays: 5

No. of workhours/day: 6

With this estimate, 28 operators will be able to key a total of 504,000 keystrokes/day,

Total no. keystrokes / keystrokes/day = no of workingdays
 $50,000,000 / 504,000 = 99$ working days, corresponding 5 months.

5 months starting 1/1-94 gives an estimated ending date of June 1, 1994.

Actual performance:

Measurements have shown that each operator keys an average number of keystrokes of 10,000 per day.

28 operators will be able to key 280,000 keystrokes per day, which will result in a total number of working days of 179 which corresponds 8,9 months.

Month	No. of Verifiers	No. of Coders	No. of data-entry operators	No. of Techn.	No. of storage clerks	Total Pay
January	20	10	11	2	3	34,094
February	20	10	11	2	3	34,094
March	20	15	28	2	4	48,700
April	20	15	28	2	4	48,700
May	20	15	28	2	4	48,700
June		15	28	2	4	31,560
July			28	2	4	22,034
						267,882

Estimated time for the Data-entry of Forms A/B

Total number of keystrokes: 50,000,000

Estimated operator speed: 3,000 keystrokes per hour

Number of available workstations: 14

<u>Duration</u>	<u>Average no. keystrokes per week</u>	<u>Computer-hours needed per week - per terminal</u>	
4 months	3,125,000	1,041	74
5 months	2,500,000	833	60
6 months	2,083,000	695	50

Summary of daily operator hours needed completing data-entry in 4,5 or 6 months

No. of Months	Comp. hours /week	No. of daily wk-hours with 5 wk-days per week	No. of daily wk-hours with 6 wk-days per week	No. of daily wk-hours with 7 wk-days per week
4	74	15 (8-24)	13 (8-22)	10 (8-19)
5	60	13 (8-22)	10 (8-19)	8,5 (8-18)
6	50	11 (8-20)	8,5 (8-18)	7 (8-16)

The number of daily working hours have been added one hour in each case, to allow 30 minutes break for each shift.

Example of workinghours for the two shifts:

Shift-1 Working hrs. No. of hours

08.00-11.00 3,0

11.30-15.00 3,5

-----> 15 minutes for change of shifts

Shift-2 15.15-18.15 3,0

18,45-22.15 3,5

Total 13,0

With these working hours for two data-entry shifts, it should be possible to finalize the data-entry operation within 4 months starting March 1, 1994.

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Estimate of remaining time needed to finalize Verification and Coding

Status as of february 21, 1994:

Total number of enumeration areas: 1,600

Verification:

Number of EA's verified: 1,016

EA's remaining for verification: 583

Average no. of EA's verified/week: 50

No.of weeks needed to finalize Verification: 12 weeks = 3 months

Coding:

Number of EA's coded: 567

EA's remaining for coding: 1,033

Average no. of EA's coded/week: 65

No.of weeks needed to finalize Coding: 16 weeks = 4 months