COBOL: STILL THE MAJOR LANGUAGE FOR BUSINESS APPLICATIONS PROGRAMMERS

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ABSTRACT: *This paper reviews the history of criticism of COBOL and the recurring predictions that COBOL will soon vanish from the scene. It then presents an analysis of the help-wanted advertising for business programmers in the* Boston Sunday Globe *from 1982 through 1988. Help-wanted advertisements are an acknowledged indicator of business trends. The data from help-wanted advertisements support the author's contention that COBOL is and will remain the major computer language for business applications. Companies are advertising for COBOL programmers because they have been using COBOL for years and plan to continue using COBOL. Undergraduate curriculum for CIS education should reflect the needs of the business community for COBOL programmers. COBOL has been the central language of such curriculum and should remain as the central language for undergraduate CIS education.*

KEYWORDS: COBOL, CIS Education

INTRODUCTION

"I thought COBOL was dead. . . Why would anyone want to use something like COBOL?" [1]. This quote from an attendee at a recent conference in Pittsburgh pretty well sums up a rather widespread attitude regarding COBOL. The critics of COBOL have been predicting its imminent demise since 1960 and are still at it [2, 3, 4]. So many people have predicted that COBOL will soon be obsolete that it has become an article of faith.

However, COBOL does have its supporters who offer some convincing reasons for the continued use of COBOL. Among the reasons for COBOL's continued strength are:

1. It is a mature language with a long history of success.

2. There is a large number of experienced programmers available to support it.

3. The COBOL-85 standard gives it renewed vitality [5, 6, 7, 8].

RESEARCH QUESTION

What is the status of COBOL? Is it a dying language or is it still the dominant language it was once? Should we continue to teach COBOL?

This paper will discuss COBOL's position in business data processing based on an analysis of the help-wanted advertisements in the Boston Sunday Globe during the seven years 1982 through 1988.

DESIGN OF THE STUDY

This study was based on an analysis of help-wanted advertising as an indicator of possible trends. Help-wanted advertising is an accurate barometer and the analysis of help-wanted advertising has been used frequently as a predictor of business, economic, and sociological trends [9, 10, 11].

For this study help-wanted advertisements were counted in the Boston Sunday Globe from the second Sunday of each month for the years 1982 through 1988. All advertisements for business applications programmers were counted and the counts were grouped on the basis of the language(s) named in the ad.

Data was collected explicitly for Assembler, BASIC, C, COBOL, FORTRAN, PL/1, and RPG. Given the great number of so called Fourth Generation Languages, a single category was used to group all these tools as 4GL. This group includes ADS/On-Line, Datatrieve, Focus, Mantis, Natural, Oracle, System 1022, System 1032, and others. A final 'catch-all' group was accumulated for a number of languages that appeared with extremely low frequency. This final group includes such languages as Ada, Dibol, and Pascal.

ANALYSIS OF THE DATA

Percentages of total ad volume were computed for each language to provide a common basis of comparison from year-to-year. These percentages are shown in

Table 1

Percent of Ads Naming Each Computer Language
Help-Wanted Ads Boston Sunday Globe

Year	COBOL	RPG	BASIC	FORTRAN	ASSEMB	PL/1	C	4GL
1982	51.26	7.29	7.79	10.05	11.06	4.15	3.64	3.27
1983	46.30	11.44	8.79	8.51	7.95	5.44	5.16	5.58
1984	53.50	11.15	7.32	5.89	2.87	5.73	9.39	2.87
1985	53.09	9.41	5.82	4.58	2.97	3.59	8.91	8.66
1986	48.38	7.15	5.66	4.64	3.71	3.99	7.24	15.04
1987	45.69	5.59	5.83	4.11	2.63	5.67	11.01	14.46
1988	44.44	6.66	6.30	3.22	2.86	4.47	10.76	17.86

Table 1. While the catch- all group (Ada, Dibol, Pascal, ...) was used to compute the overall percentages, the results for this group were insignificant and have been omitted from the study.

An examination of Table 1 finds that COBOL is the overwhelming leader in the percentage of help-wanted ads for business application programmers. COBOL ranges from a high of 53.50% in 1984 to a low of 44.44 in 1988. It is apparent that COBOL is the major language named by advertisers when seeking business applications programmers.

The wide variation in the percent of ads naming C provides an indication of a trend. C ranges from a low of 3.64% in 1984 to a high of 11.01% in 1987. The general trend is for a sharp increase in the use of the C programming language. This finding is consistent with general anecdotal evidence. C is certainly becoming a widely used language and every indication is that its use will continue to grow.

The other category which exhibits an upward trend in help- wanted ad frequency is 4GLs. These fourth generation software development tools have demonstrated a generally steady rise from 3.27% in 1982 to 17.86% in 1988. This result is also consistent with expectations. 4GLs have exhibited a growing strength in the marketplace and will doubtless continue to show increased use.

Figure 1 provides a comparative view of the data from Table 1. This graph provides

Although C and 4GLs have become significant languages over the past seven years, there is no question that COBOL is still the major language of business data processing.

an immediate visual reinforcement of the fact that COBOL has been and continues to be the dominant language in business data processing. No other language even comes close to COBOL's position as the dominant language for applications programmers. Clearly, employers are looking for people with knowledge of COBOL far more frequently than any other language.

CONCLUSIONS

In spite of the years of criticism and all the predictions that COBOL will soon be replaced by some new language, COBOL continues as the dominant language of business data processing.

Although C and 4GLs have become significant languages over the past seven years, there is no question that COBOL is still the major language of business data processing. "Because people are looking for one perfect system they keep coming back to COBOL" [7].

COBOL has been an integral part of the market for nearly thirty years. There are an estimated 20 billion lines of COBOL code currently in use and a vast cadre of experienced COBOL programmers. COBOL will continue for a long time to come. To paraphrase a famous quote, "The reports of COBOL's death have been greatly exaggerated".

There is no question that COBOL should remain as the central language in curriculum designed to prepare students for entry- level jobs in data processing. This assertion contradicts an unfortunate trend. Recent surveys have shown that the number of schools teaching COBOL is declining [12]. DPMA has even indicated

a shift from its earlier support for teaching COBOL. The first version of the DPMA Model Curriculum for Undergraduate CIS Education unequivocally names COBOL as the language for the courses in applications programming [13]. The latest version of the DPMA Model Curriculum merely recommends COBOL after first stating that, "The same designs can be coded in BASIC, COBOL, PL/1, APL, Pascal, or other languages, at the discretion of the instructor" [14]. The DPMA Model Curriculum is on firmer ground when it is pointed out that surveys of businesses "showed an overwhelming preference for COBOL as the primary language" [14].

Educators, practitioners, and others with an interest in data processing education must take advantage of every forum available to make the case for continued COBOL education. Certainly the newer software development tools will grow in their importance, but they will not cause COBOL to vanish in the foreseeable future.

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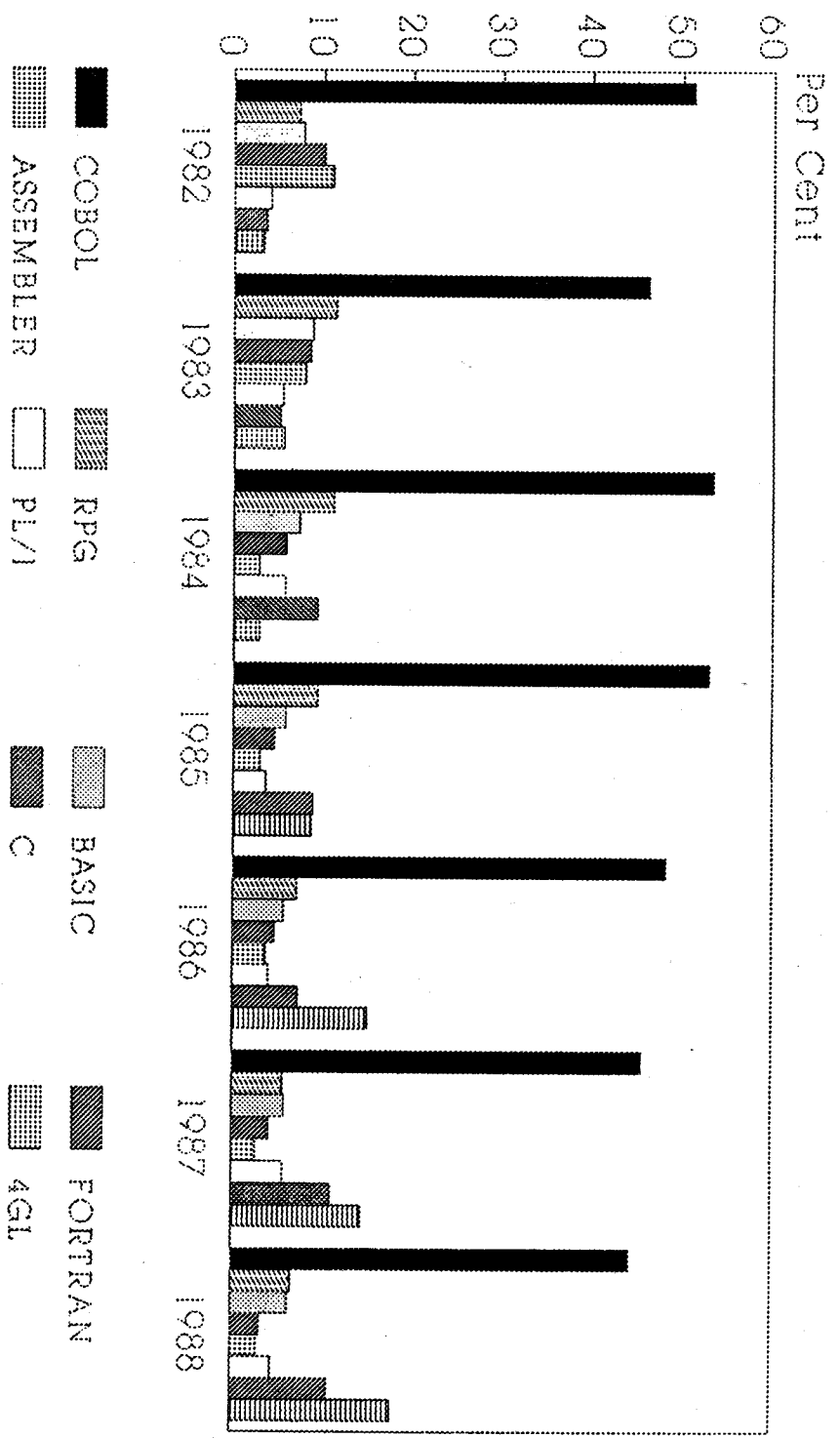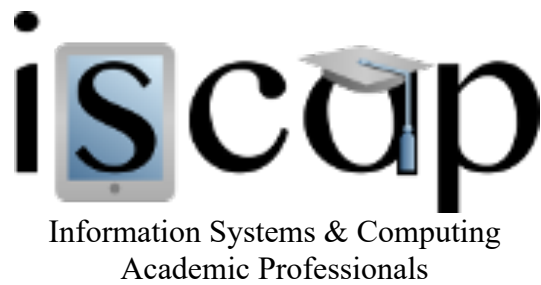
Help-Wanted Ads
Boston Sunday Globe

Per Cent

Figure 1

Legend:
- COBOL
- ASSEMBLER
- RPG
- PL/1
- BASIC
- C
- FORTRAN
- 4GL

1982 1983 1984 1985 1986 1987 1988

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