

USING JOB CONTROL LANGUAGE (JCL) OR GROUP
AND INDIVIDUAL SIMULATION¹

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The last decade has seen the introduction of a large number of simulated business games in schools of business. In many courses, a common pedagogy is to play the simulated game on a group or team basis. Typically, each group represents the management of a firm which must make certain decisions for each play of the game. The group is expected to reach a consensus decision. However, as in the real world, the group decision may not in fact be a true consensus decision.

This is perhaps highly desirable since the players can obtain considerable experience in group dynamics and group decision making. On the other hand, many of us who use simulation games have frequently heard students comment: "I didn't totally agree with my group's decision and wish I could see the results of my own ideas (decisions)." Whatever the reason for individual differences, a potentially exciting learning experience is lost. In addition, by comparing his results to his groups' decision, a number of interesting behavioral phenomena may occur.

LIMITATIONS FOR INDIVIDUAL SIMULATION

There are a number of limitations in implementing a system where the individual student can substitute his decision for the group decision. First, while some simulation games can be played on an on-line interactive computer system basis, many games cannot. The majority of simulation games are written in FORTRAN which is typically not implemented on an interactive basis at most computer installations.

Second, with large classes and many groups, the pure logistics and expense of batch processing may become prohibitive. For example, with 100 students in 20 groups with four groups comprising an industry in a game such as THE IMAGINIT MANAGEMENT GAME [1] batch requirements increase by a multiple of twenty. This is due to the fact that every team member's decision is substituted for the groups decision, one by one, while holding everything else constant. The end result is 100 computer simulations each period versus five simulations. In the IMAGINIT game, total printed lines per simulated period would increase from 9,000 to 180,000 lines if all the output was printed.

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AN ALTERNATIVE METHOD

In order to overcome some of these limitations for both pedagogical and research purposes, a special set of computer programs² was developed for the IMAGINIT MANAGEMENT GAME. This simulation game was played in the author's senior business policy courses.

The programs were specifically designed to allow students to see the results of their decision for a given year. This was done on an ex post basis at the end of the semester but the process could be done anytime. The program is flexible in that the user can select the amount of output to be printed after each individual simulation.

DESCRIPTION OF PROCEDURES

Through the use of Job Control Language (JCL) it was possible to design a system which allowed students to substitute their individual decisions for the groups decision at a fraction of the time and cost if normal procedures were utilized. The basic procedures are flow charted in Figure 1 which summarizes the major job steps.

The basic procedure is to set up several data sets containing the carryovers (prior results for each year) and annual decisions of each team within a given industry. The team decision for one year is temporarily removed and then the individual decision is inserted and IMAGINIT executed. The output is saved until all the individual decisions for the team have been executed. This process is repeated for the individuals in each of the other teams. After printing the results of the individual decisions the temporary files are deleted so that the next industry (groups of teams) may be loaded and the process repeated until every individual decision is simulated.

It is important to note that the individual decision is substituted on a year by year basis. It is not the individual results which carry forward but rather the team results. In other words, the individual is not playing a continuous game of his own.

APPLICATIONS

The basic system can be adapted by the user for a number of purposes. The author has successfully used the system for behavioral research in decision making [2]. In this application, students were given only the market quotes of the firm's common stock price resulting from their decision together with the market quotes of the other teams. Thus, students could only surmise what changes in their decision led to a market quote which was different than his teams. The user could extract whatever output information he desired by merely altering one of the programs very slightly.

² The Programs are available upon request to the author.

Figure 1

JOB FLOW CHART

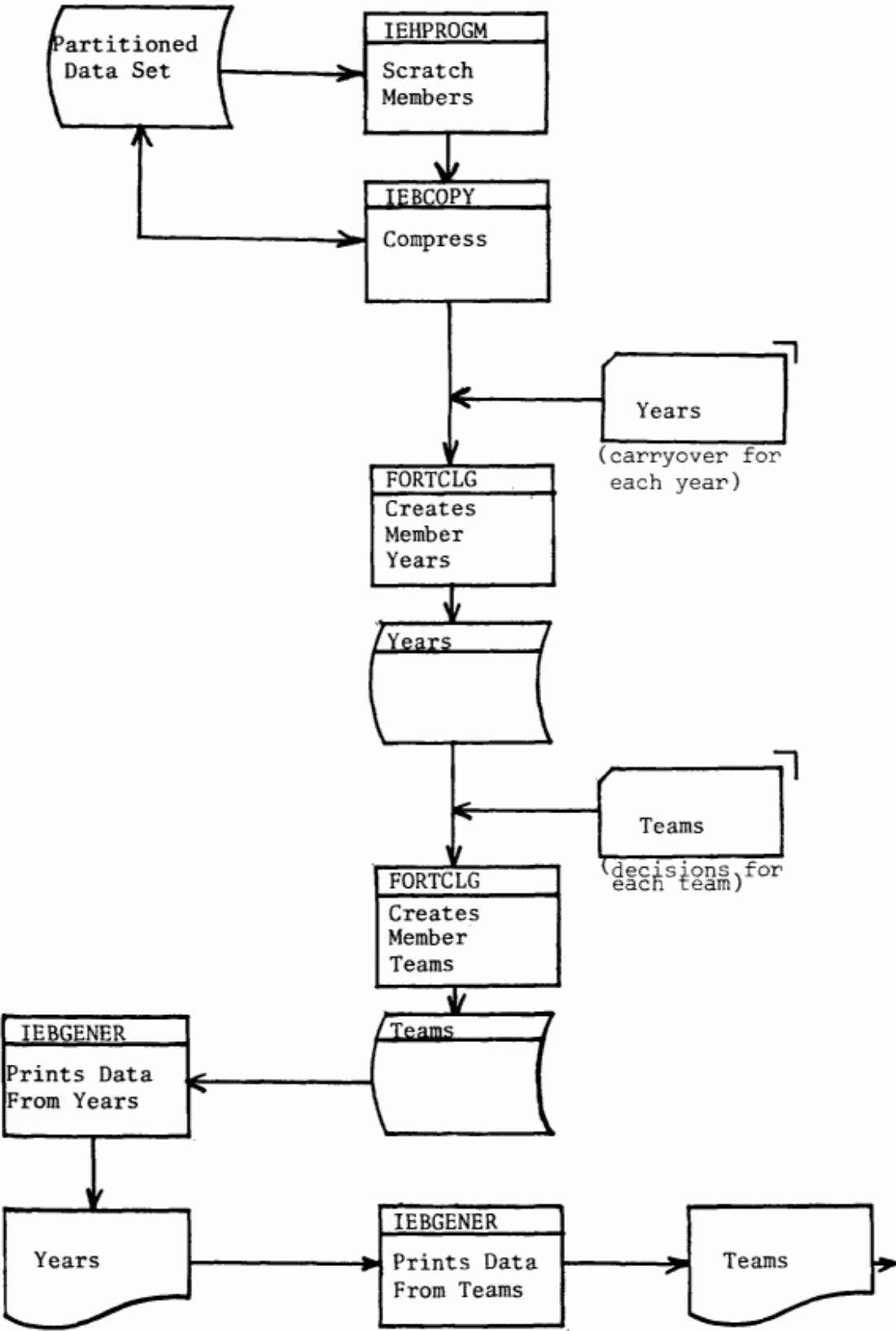
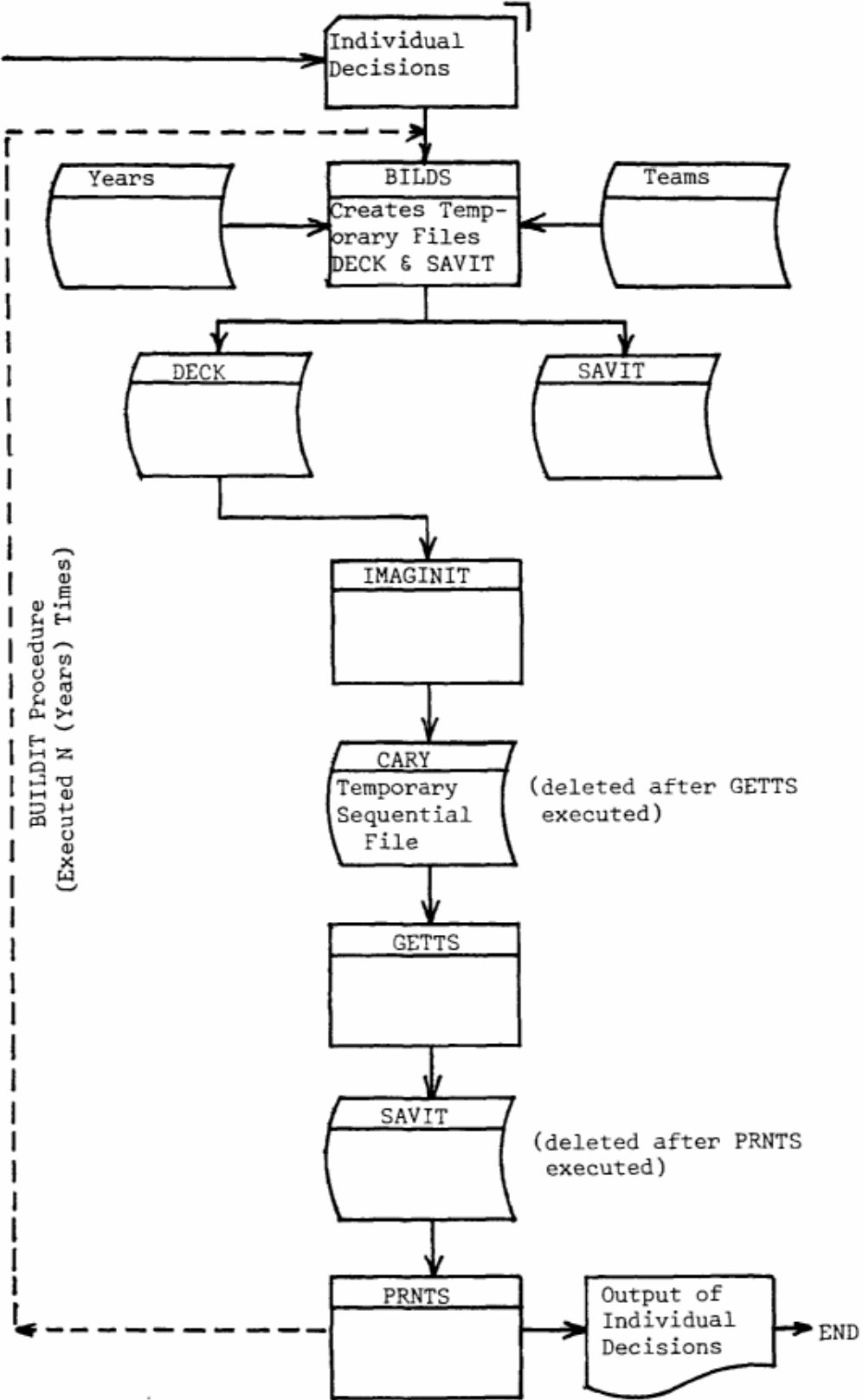


Figure 1 Continued



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Another potential application of this system is a more effective means of teaching the mechanics of the simulation game. Instructors can generate numerous situations using decisions supplied by students.

CONCLUSIONS

The discussion has illustrated one method of overcoming the inability of many simulation games to be played on an online basis. Although it does not represent a true on-line system, the procedures can be utilized to increase the value of simulation games for both pedagogical and research purposes.

REFERENCES

1. Barton, Richard F., The Imaginit Management Game, (Lubbock: Active Learning, 1974),
2. Muhs, William F., A Comparison of Individual Versus Group Decision Making Under Uncertainty Utilizing a Simulated Management Game. Unpublished doctoral dissertation, Texas Tech University, 1976. (University Microfilms No. 77-6220).