**JOTTO**

Programming Project Mr. Kummer

Jotto is a guessing game that uses five-letter words. You are going to write a program that will play the game with a user. Suppose you have a file with over 3000 5-letter words in it to use as a Jotto dictionary. The computer will randomly select a word from the dictionary and will then ask the user to guess it. Suppose the computer randomly selects BOOTY.

To guess the word, the user must use 5-letter words as guesses. After making a guess, the computer reports how many jots the guess gets. A jot is a letter match. Thus, if the user guesses OGRES, the computer calculates:

B O O T Y

/

O G R E S

OGRES gets 1 jot when compared with BOOTY. The O can only match once. Every letter in each word is allowed to match at most once. Letters don't have to match in the same position. Position is irrelevant. If the user then guesses FOOLS, the computer calculates:

B O O T Y

| |

F O O L S

FOOLS gets 2 jots when compared with BOOTY. If the user then guesses TUBBY, the computer calculates:

B O O T Y

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T U B B Y

TUBBY gets 3 jots when compared with BOOTY. The double B in TUBBY can only match once against the single B in BOOTY. Each exact pair of characters that match constitutes another jot. Because each letter can be used once at most, it

is not possible to get more than 5 jots. It is, however, possible to get 5 jots without being right. Consider:

+-S P E A R

| / / / /

| P E A R S-+

| |

+-----------+

Each of these words are composed of the same 5 letters, but they are not the same word. Thus, SPEAR and PEARS each get 5 jots when compared with the other. You also get 5 jots if you compare either of these to the words RAPES, PARES,

PARSE, or REAPS.

If you want a more difficult and more interesting assignment, have the game work both ways. The computer will think up a word for the user to guess and the user will think up a word for the computer to guess. This is a case where the computer can take advantage of its brute force ability to check every possibility. Using the Jotto dictionary as a starting point, the computer

can keep track of all of the current possibilities. Each time the computer should guess a word randomly selected from this list. Then when the user tells the computer how many jots that word gets compared to the correct word, the computer can eliminate any words that don't have the same number of jots when compared to the guess. The computer fairly quickly locates the correct word, so the user has to be a very good Jotto player to beat this strategy. Remember that the user is supposed to guess a legal English word and is required to give correct answers as the computer makes guesses. It would be good for the computer to verify that the user doesn't cheat. This can be done only at the end when the computer gives up and asks the user what the answer is.