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clear;
clc;
warning('off');
% Game based on rolling 5 dice and trying to achieve the highest score

% Breif Discription over how the categories will be scored
fprintf('Scoring category overview:\n\n');
fprintf('Aces - Adds the total for all the ones rolled\n\n');
fprintf('Twos - Add the total for all the twos rolled\n\n');
fprintf('Threes - Adds the total for all the threes rolled\n\n');
fprintf('Fours - Adds the total for all the fours rolled\n\n');
fprintf('Fives - Adds the total for all the fives rolled\n\n');
fprintf('Sixes - Addes the total for all the sixes rolled\n\n');
fprintf('Three of a kind - if three of the same dice value are rolled
  then\nall the dice present will be totalled and added to the score\n
\n');
fprintf('Four of a kind - if four of the same dice value are rolled
  then all\nthe dice present will be totalled and added to the score\n
\n');
fprintf('Small Straight - if four of the five dice are consecutive
  then 30\npoints will be added to the score\n\n');
fprintf('Large Straight - if all five dice are consecutive then 40
  points will\nbe added to the score\n\n');
fprintf('Fullhouse - if there are two different dice values present
  with\nthree of the dice being for one value and the other two for
  another value then 25 points can be\nadded to the score\n\n');
fprintf('Yahtzee - if all five dice are of the same value then 50
  points\ncan be added to the score\n\n');
fprintf('Chance - the total value for all the dice rolled is added to
  the score\n\n');
fprintf('If more guidance is required please press "Ctrl" + "C" and
  refer to the <a href="https://u.osu.edu/fell81aul8sec23590c/software-
  documentation/user-manual/">User Manual</a> for help.\n');
fprintf('Press any key to continue\n');
pause()
clc

% Asks how many players are playing
numplayers = input('How many players are present?');

% Intialize scores for all the players
for p = 1:1:numplayers %+ ai
    score(p) = 0;
    for x = 1:1:13
        categoriesused(p,x) = 0;
    end
end

for x = 1:1:13
    for p = 1:1:numplayers
        % Declares who's turn it is to play and proforms their turn
        fprintf('It is player %.0f turn!\n',p);

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result = turn();

% Asks play what category to place the score into
clc;
fprintf('1 - Aces\n');
fprintf('2 - Twos\n');
fprintf('3 - Threes\n');
fprintf('4 - Fours\n');
fprintf('5 - Fives\n');
fprintf('6 - Sixes\n');
fprintf('7 - Three of a kind\n');
fprintf('8 - Four of a kind\n');
fprintf('9 - Small Straight (30 points)\n');
fprintf('10 - Large Straight (40 points)\n');
fprintf('11 - Fullhouse (25 points)\n');
fprintf('12 - Yahtzee (50 points)\n');
fprintf('13 - Chance\n');
fprintf('Your score so far is %.0f\n',score(p));

% Loops until available category has been selected
while 1
    category=input('What category do you want these points to
count for (type in category number you want to use)?\n');

    % Checks to make sure that the category has not been used
    if isinhand(categoriesused, category) == false && category
< 14 && category >0
        categoriesused(p,category) = category;
        break;
    else
        fprintf('You have already used this category! (type in
a different number)\n');
    end
end

% Intialize the score for the round
roundscore = 0;
% Calculates the score for the intended category
if category == 1
    roundscore = uppertotal(result,1);
elseif category == 2
    roundscore = uppertotal(result,2);
elseif category == 3
    roundscore = uppertotal(result,3);
elseif category == 4
    roundscore = uppertotal(result,4);
elseif category == 5
    roundscore = uppertotal(result,5);
elseif category == 6
    roundscore = uppertotal(result,6);
elseif category == 7
    if threeofkind(result) == true
        for i = 1:1:length(result)
            roundscore = roundscore + result(i);

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        end
    end
elseif category == 8
    if fourofkind(result) == true
        for i = 1:1:length(result)
            roundscore = roundscore + result(i);
        end
    end
elseif category == 9
    if smallstraight(result) == true
        roundscore = 30;
    end
elseif category == 10
    if largeststraight(result) == true
        roundscore = 40;
    end
elseif category == 11
    if fullhouse(result) == true
        roundscore = 25;
    end
elseif category == 12
    if yahtzeedetection(result) == true
        roundscore = roundscore + 50;
    end
elseif category == 13
    for i = 1:1:length(result)
        roundscore = roundscore + result(i);
    end
end
score(p) = score(p) + roundscore;
fprintf('Your score is %.0f\n',score(p));
end
end

% Finding out which player has the highest score
highscore = 0;
poshigh = 0;
for p = 1:1:length(score)
    if score(p) > highscore
        highscore = score(p);
        poshigh = p;
    end
end

%Declare winner of the game
fprintf('The winner is player %.0f with a score of %.0f!\n', poshigh,
    highscore);

Scoring category overview:

Aces - Adds the total for all the ones rolled

Twos - Add the total for all the twos rolled

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*Threes - Adds the total for all the threes rolled*

*Fours - Adds the total for all the fours rolled*

*Fives - Adds the total for all the fives rolled*

*Sixes - Adds the total for all the sixes rolled*

*Three of a kind - if three of the same dice value are rolled then all the dice present will be totalled and added to the score*

*Four of a kind - if four of the same dice value are rolled then all the dice present will be totalled and added to the score*

*Small Straight - if four of the five dice are consecutive then 30 points will be added to the score*

*Large Straight - if all five dice are consecutive then 40 points will be added to the score*

*Fullhouse - if there are two different dice values present with three of the dice being for one value and the other two for another value then 25 points can be added to the score*

*Yahtzee - if all five dice are of the same value then 50 points can be added to the score*

*Chance - the total value for all the dice rolled is added to the score*

*If more guidance is required please press "Ctrl" + "C" and refer to the <a href="https://u.osu.edu/fel181au18sec23590c/software-documentation/user-manual/">User Manual</a> for help.  
Press any key to continue*

*Error using input  
Cannot call INPUT from EVALC.*

*Error in Yathzee (line 27)  
numplayers = input('How many players are present?');*

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