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5 - 9 - 15
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A 3-Game Set of Tennis

<u>**Legend**</u>

<u>**System Libraries**</u>

iostream - Allows for input and output

fstream - allows for data from the source code to be read into, or out of a file

<u>**Function Prototypes**</u>

<u>**void**</u> - functions that do not return values

void game1() - function that runs for the first game

void game2 () - function that runs for the second game

void game3 () - function that runs for the third game

<u>**main**</u> - main function that returns a value

int main (int argc, char** argv) - main function that returns integer value 0, runs void functions,

and a prototype accepting two different arguments: the integer argc and the contents of character

address argv.

<u>**Data Type**</u>

unsigned short - positive number from 0 to 65,535(roughly 2^{16})

unsigned int - positive number from 0 to 4,294,967,295(roughly 2^{32})

char - a single character

<u>Variables</u>

game - amount of games won by user

points - amount of points won by user

serve - the initial serve of the point

serve2 - the second shot returned by the user

serve3 - the third shot returned by the user; ending shot

k - loop-controlling variables for each of the 3 games

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<u>Background</u>

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This game of tennis will be a one player game against the computer, composed of a 3-game set.

Each set has a total of 3 games, and in this game, if both players attain 6 games, then a 1 point

tiebreaker must be played; the winner of the point is the victor.

Each game typically consists of 4 points that are played out, resulting in scores of 15, 30, 40, and

1 game. However the amount of points may vary if both players win multiple points. If both

players win 3 points, they are considered to be tied at "Deuce", also known as 40-40, or 40-all.

One point will be played out to determine who wins that game.

The scoring of the points is in the format of (Server Points-Receiver Points), i.e 15-15, if the server has one point, and the receiver has one the point.. The same can be said of the scoring of games, i.e 1-1, if the server has won a game and the receiver has one a game as well.

How to play

You, the user, will always server(the player who initiates the point) in the match; the computer will always be the returner. To start the game, answer y or Y for yes, when asked if you want to play. Then, enter s or S to start the game. Throughout the game, you have an option of which type of serve or return you would like to deliver, Topspin = 1, Slice = 2, and Flat = 3.

Note on shot types

Topspin shots bounce higher after they hit the court and move more rapidly as a result of the ball's heavy rotation. Slice shots bounce lower after they hit the court, and usually pick up speed after bouncing; however, they do move in the haphazardly way upon bouncing. A flat shot maintains the same height after bouncing; it is a harder serve for the opponent to return, but it is more predictable and easier to be directed if they do return the shot.