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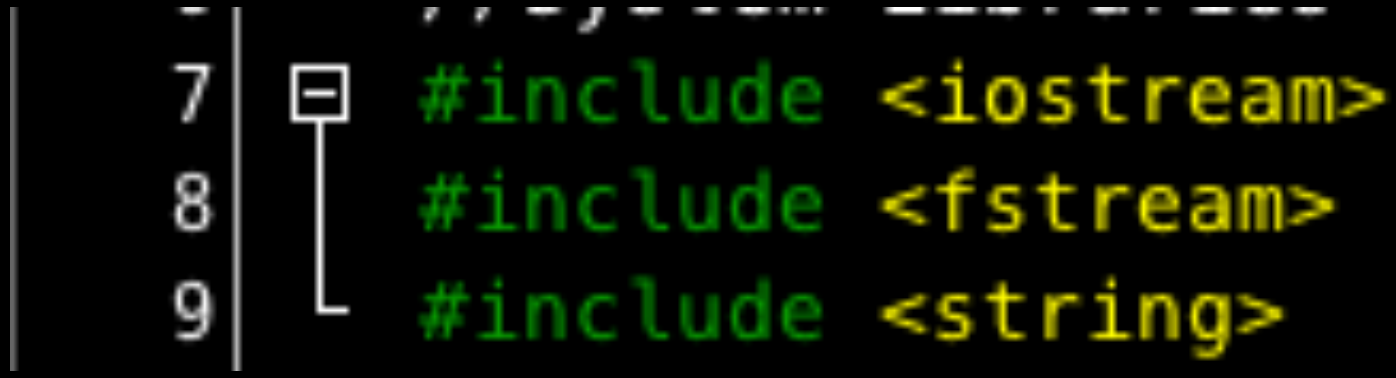
Concepts of Project 2



Preprocessor Directives

Chapter 1 & 2

```
11  using namespace std;
```

Standard Namespace
Chapter 1 & 2

```
31      switch (choice)
32          {
33          case 'Y':
34          {
35              cout << "Enter the letter s to begin the game" << endl;
36              char start;
37              cin >> start;
38              switch (start)
39                  {
40                  case 's':
41                  {
42                      game1();
43                      game2();
44                      game3();
45
46                      break;
47                  }
48                  case 'S':
49                  {
50                      game1();
51                      game2();
52                      game3();
53                      break;
54                  }
55                  default:
56                  {
57                      game1();
58                      game2();
59                      game3();
60                  }
```

Chapter 2, 4, 5, and 6:
Output, Variable definition, Menu, A Switch Function within another, Function call

```
104     for (unsigned int A = 0; A <= 3; A++)
108     if (serve == 1)
109         {
110         cout << "Your opponent responded with soft flat shot." << endl;
111         cout << "Respond with the corresponding shot type number you'd like." << endl;
112         cin >> serve2;
113         if (serve2 == 1)
114             {
115             cout << "You won the point." << endl;
116             points += 15;
117             cout << "Your point total is " << points << endl;
118             }
119         else if (serve2 == 2)
120             {
121             cout << "Your opponent responded with deep topspin shot." << endl;
122             cout << "Respond with the corresponding shot type number you'd like." << endl;
123             cin >> serve3;
124             if (serve3 == 1)
125                 {
126                 cout << "Their shot hit the net, so you won the point!" << endl;
127                 points += 15;
128                 cout << "Your point total is " << points << endl;
129                 }
130             else if (serve3 == 2 || serve3 == 3)
131                 {
132                 cout << "You lost the point." << endl;
133                 points += 0;
134                 cout << "Your point total is " << points << endl;
135                 }
136             }
```

Chapter 3, 4

Looping using for, if, and else if, Mathematical and logical Operators

```
int binSrch(int *array, const unsigned short numElems, const unsigned short &value)
    {
    int first = 0; // First array element
    int last = numElems - 1;
    int middle;
    int position = -1;
    bool found = false; // Flag
    while (!found && first <= last)
        {
        middle = (first + last) / 2; // Calculate midpoint
        if (array[middle] == value) // If value is found at mid
            {
            found = true;
            position = middle;
            }
        else if (array[middle] > value) // If value is in lower half
            last = middle - 1;
        else if (array[middle] < value)
            first = middle + 1; // If value is in upper half
        }
    return position;
    }
```

Chapter 6, 8 and 9
Function, Binary Search, and Pointers

```
424     if (points == 60)
425         {
426
427         cout << "You won a game!" << endl;
428         game = 3;
429         cout << "Your total amount of games is 3." << endl;
430         }
431     else
432         {
433
434         cout << "You lost the game!" << endl;
435         game = 0;
436         cout << "Your total amount of games is 0." << endl; //All or nothing: You must win all 3 games to be vi
437         }
438     ofstream file; //Introducing file, ofstream variable to accept data
439     string name; // Introducing name, string variable to accept a name
440     file.open("Score.data"); //File Manipulation
441     cout << "Enter your first name." << endl;
        cin >> name;
443     if (game == 3)
444         {
445         cout << name << ", you won the final game!" << endl;
446         file << "Your total amount of games is 3" << endl;
447         const unsigned short SIZE = 4, ideal = 3; //Amount of space within the array, and the ideal number for
448         int myArray[SIZE] = {0, 1, 2, 3};
449         int results = binSrch(myArray, SIZE, ideal);
450         if (results == 3)
451             {// If the player won, read "winner" date into file.
452             file << name << ", you won!" << endl;
453             file << "Thank you for playing tennis with me." << endl;
454             file.close(); // Close File
455             cout << "A file containing your results is now available." << endl;
456             }
457         }
```

Chapter 3, 5 and 7

String variable “name”, File manipulation and Array

```
17  //Function Prototypes
18  void game1(); // Game 1
19  void game2(); // Game 2
20  void game3(); // Game 3 : Final Game of tennis
21  int binSrch(int *, const unsigned short, const unsigned short &); // search
```

Chapter 6
Function Prototypes

Chapter 6
Function