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DEPARTMENT: CYBER SECURITY

SUBJECT: PROGRAMMING FUNDAMENTALS

1.

The screenshot displays a C++ IDE with the source code for a program titled "um.cpp". The code implements a "Lunch Party Management System" with a menu of four items (P, B, S, C) and their respective costs. It uses a while loop to allow users to add items to a lunch and view the summary. The output window shows the program's execution, including the menu display, user input for item selection and guest count, and the final cost calculation.

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     char menu1 = 'P';
6     char menu2 = 'B';
7     char menu3 = 'S';
8     char menu4 = 'C';
9
10    double cost1 = 9.99;
11    double cost2 = 5.99;
12    double cost3 = 3.99;
13    double cost4 = 1.50;
14
15    int numGuests = 0;
16    double totalCost = 0;
17
18    cout << "Welcome to the Lunch Party Management System!" << endl;
19    cout << "Menu:" << endl;
20    cout << "1. " << menu1 << " - $" << cost1 << "\n";
21    cout << "2. " << menu2 << " - $" << cost2 << "\n";
22    cout << "3. " << menu3 << " - $" << cost3 << "\n";
23    cout << "4. " << menu4 << " - $" << cost4 << "\n";
24
25    while (true)
26    {
27        cout << "Enter the number of the item you want to include in the lunch (0 to finish): ";
28        int choice;
29        cin >> choice;
30        if (choice == 0) {
```

Output:

```
Welcome to the Lunch Party Management System!
Menu:
1. P - $9.99
2. B - $5.99
3. S - $3.99
4. C - $1.50

Enter the number of the item you want to include in the lunch (0 to finish): 4
Added C to the lunch.

Enter the number of the item you want to include in the lunch (0 to finish): 3
Added S to the lunch.

Enter the number of the item you want to include in the lunch (0 to finish): 0

Do you want to view the lunch summary? (y/n): n

Do you want to view the lunch summary? (y/n): n

Do you want to view the lunch summary? (y/n): y

Lunch Summary: Number of Guests: 2
Total Cost: $5.49
Thank you for using the Lunch Party Management System!
=====
Process exited after 22.76 seconds with return value 0
Press any key to continue . . .
```

Compilation results...

```
-----
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\ashar imtiaz\OneDrive\Desktop\um.exe
- Output Size: 2.25164318084717 MiB
- Compilation Time: 1.45s
```

```
50     cout << "Added " << menu3 << " to the lunch.\n";
51     break;
52     case 4:
53         totalCost += cost4;
54         cout << "Added " << menu4 << " to the lunch.\n";
55         break;
56     }
57     numGuests++;
58
59     char viewSummary;
60
61     do {
62         cout << "\nDo you want to view the lunch summary? (y/n): ";
63         cin >> viewSummary;
64
65         if (viewSummary == 'y') {
66             cout << "\nLunch Summary: ";
67             cout << "Number of Guests: " << numGuests << "\n";
68             cout << "Total Cost: $" << totalCost << "\n";
69         }
70     } while (viewSummary == 'n');
71
72     cout << "Thank you for using the Lunch Party Management System!";
73
74     return 0;
75 }
76
77
78
```

Compilation results...

- Errors: 0
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- Output Filename: C:\Users\asher imtiaz\OneDrive\Desktop\um.exe
- Output Size: 2.25164318084717 MiB
- Compilation Time: 1.45s

Console Output:

```
Welcome to the Lunch Party Management System!
Menu:
1. P - $9.99
2. B - $5.99
3. S - $3.99
4. C - $1.5

Enter the number of the item you want to include in the lunch (0 to finish):
4
Added C to the lunch.

Enter the number of the item you want to include in the lunch (0 to finish): 3
Added S to the lunch.

Enter the number of the item you want to include in the lunch (0 to finish): 0

Do you want to view the lunch summary? (y/n): n

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```

```
28     cin >> choice;
29
30     if (choice == 0) {
31         break;
32     }
33     if (choice < 1 || choice > 4) {
34         cout << "Invalid choice. Please choose a number from the menu.\n";
35         continue;
36     }
37
38     switch (choice) {
39         case 1:
40             totalCost += cost1;
41             cout << "Added " << menu1 << " to the lunch.\n";
42             break;
43         case 2:
44             totalCost += cost2;
45             cout << "Added " << menu2 << " to the lunch.\n";
46             break;
47         case 3:
48             totalCost += cost3;
49             cout << "Added " << menu3 << " to the lunch.\n";
50             break;
51         case 4:
52             totalCost += cost4;
53             cout << "Added " << menu4 << " to the lunch.\n";
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2.

