

```

1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     const int MAX_EMPLOYEES = 10;
6     const int NAME_LENGTH = 10;
7     const int POSITION_LENGTH = 10; // Changed from 10 to 20
8     const int PHONE_LENGTH = 10;
9
10    string names[MAX_EMPLOYEES];
11    string positions[MAX_EMPLOYEES];
12    string phoneNumbers[MAX_EMPLOYEES];
13    int ids[MAX_EMPLOYEES];
14    int ages[MAX_EMPLOYEES];
15    double salaries[MAX_EMPLOYEES];
16    int count = 0;
17

```

1. Variable Declarations

- Initializes constants and arrays to store employee data.
 - `MAX_EMPLOYEES = 10`: Maximum number of employees the system can handle.
 - `NAME_LENGTH = 10`: Maximum allowed characters for an employee's name.
 - `POSITION_LENGTH = 10` (later changed to 20): Maximum allowed characters for an employee's position.
 - `PHONE_LENGTH = 10`: Exact required digits for a phone number.
- Arrays:
 - `names`, `positions`, `phoneNumbers`: Store strings for employee details.
 - `ids`, `ages`, `salaries`: Store integers/doubles for employee ID, age, and salary.
 - `count`: Tracks the current number of employees in the system.

```

18     while (true) {
19         cout << "\nEmployee Management System\n";
20         cout << "1. Add Employee\n";
21         cout << "2. View All Employees\n";
22         cout << "3. Search Employee\n";
23         cout << "4. Exit\n";
24         cout << "Enter your choice: ";
25
26         int choice;
27         cin >> choice;
28
29         if (choice == 1) {
30             if (count >= MAX_EMPLOYEES) {
31                 cout << "Maximum employees reached!\n";
32                 continue;
33             }
34
35             // Name input (max 10 characters)
36             cout << "Enter employee name (max 10 chars): ";
37             string name;
38             cin >> name;
39             if (name.length() > NAME_LENGTH) {
40                 cout << "Name too long! Using first 10 characters.\n";
41                 name = name.substr(0, NAME_LENGTH);
42             }
43             names[count] = name;
44         }

```

2. Main Menu Loop

- Displays a menu and handles user input for navigating the system.
 1. Add Employee: Allows adding a new employee (checks if maximum capacity is reached).
 2. View All Employees: Displays a list of all employees.
 3. Search Employee: (Code not fully shown) Likely searches for an employee by ID or name.
 4. Exit: Terminates the program.
- Input Handling:
 - Reads the user's choice (`cin >> choice`).
 - Uses `if-else` to execute the corresponding functionality.
 - Validates the name length (truncates to 10 characters if too long).

```

44
45 // Position input (now max 20 characters)
46 cout << "Enter employee position (max 10 chars): ";
47 string position;
48 cin >> position;
49 if (position.length() > POSITION_LENGTH) {
50     cout << "Position too long!\n";
51     cin>>position;
52 }
53 positions[count] = position;
54
55 cout << "Enter employee ID: ";
56 cin >> ids[count];
57

```

3. Position and ID Input

- Collects and validates the employee's position and ID.
-
- Prompts for a position (max 10 characters, but note the comment says 20).
- Checks length; if too long, it prints an error .
- Stores the position in the `positions` array.
- ID Input:
 - Directly reads the employee ID and stores it in the `ids` array.

```

58 // Phone number input (exactly 10 digits)
59 cout << "Enter employee phone number (10 digits): ";
60 string phone;
61 cin >> phone;
62 while (phone.length() != PHONE_LENGTH) {
63     cout << "Invalid length! Enter exactly 10 digits: ";
64     cin >> phone;
65 }
66 phoneNumbers[count] = phone;
67
68 cout << "Enter employee age: ";
69 cin >> ages[count];
70
71 cout << "Enter employee salary: ";
72 cin >> salaries[count];
73
74 count++;
75 cout << "Employee added successfully!\n";
76

```

4. **Phone, Age, and Salary Input

- Collects and validates phone number, age, and salary.
- Phone Number Input:
 - Requires exactly 10 digits.
 - Uses a `while` loop to repeatedly prompt the user until a valid phone number is entered.
- Age and Salary Input:
 - Directly reads age and salary without validation (e.g., no checks for negative values).
- Completion:
 - Increments `count` to reflect the new employee.
 - Prints a success message.

```

76
77     } else if (choice == 2) {
78         if (count == 0) {
79             cout << "No employees in the system.\n";
80             continue;
81         }
82
83         cout << "\nEmployee List:\n";
84         cout << "ID\tName\t\t\tPosition\t\t\t\tPhone\t\t\tAge\tSalary\n";
85         cout << "-----";
86         for (int i = 0; i < count; i++) {
87             cout << ids[i] << "\t"
88                 << names[i] << "\t";
89             if (names[i].length() < 8) cout << "\t";
90             cout << positions[i] << "\t";
91             if (positions[i].length() < 16) cout << "\t";
92             cout << phoneNumbers[i] << "\t"
93                 << ages[i] << "\t$"
94                 << salaries[i] << "\n";
95         }
96
97     } else if (choice == 3) {
98         /* ... rest of the search code remains exactly the same ... */
99     } else if (choice == 4) {
100         cout << "Exiting the system. Goodbye!\n";
101         break;
102     } else {
103         cout << "Invalid choice. Please try again.\n";
104     }
105 }
106
107 return 0;
108 }

```

5. View All Employees and Exit

- Displays all employees or exits the system.
- View All Employees:
 - Checks if there are no employees (`count == 0`) and displays a message if so.
 - Prints a formatted table with columns: ID, Name, Position, Phone, Age, Salary.
 - Uses `\t` for alignment and adjusts spacing based on field lengths.
- Exit:
 - Prints a goodbye message and breaks the loop to exit the program.
- Invalid Choice:
 - Handles invalid menu inputs with an error message.

Summary of Functions:

1. Initialization: Sets up data structures for employee records.
2. Menu Loop: Provides navigation and input handling.
3. Add Employee:
 - Validates and stores name, position, phone, ID, age, and salary.
 - Enforces length constraints for name, position, and phone.
4. View Employees: Displays all records in a tabular format.
5. **Exit**: Cleanly terminates the program.