

```
1 #include <iostream>
2 using namespace std;
3 void swapNum(int &n1,int &n2) {
4     int temp;
5     temp=n1;
6     n1=n2;
7     n2=temp;
8 }
9 int main()
10 {
11     int x=1,y=2;
12     swapNum(x,y);
13     cout<<x<<endl;
14     cout<<y<<endl;
15     return 0;
16 }
```

```
1 #include <iostream>
2 using namespace std;
3 void replaceValues(int arr[]) {
4     int mid=(0+4)/2;
5     for(int i=0;i<mid;i++) {
6         arr[i]=1;
7     }
8     for(int i=mid;i<4;i++) {
9         arr[i]=0;
10    }
11 }
12 int main()
13 {
14     int arr[5]={1,2,3,4};
15     replaceValues(arr);
16     for(int i=0;i<4;i++) {
17         cout<<arr[i]<<endl;
18     }
19     return 0;
20 }
21 }
```

```
#include <iostream>
using namespace std;
int fibonacci(int n);
void printBinary(int n);
int main() {
    int n;
    cout << "Enter number: ";
    cin >> n;
    cout << "Fibonacci series: ";
    for (int i = 1; i <= n; ++i)
        cout << fibonacci(i) << " ";
    cout << endl;
    cout << "Enter a decimal number: ";
    cin >> n;
    if (n == 0)
        cout << 0;
    else
        printBinary(n);
```

```
        cout << endl;
    return 0;
}

int fibonacci(int n) {
    if (n <= 1)
        return n;
    return fibonacci(n - 1) + fibonacci(n - 2);
}

void printBinary(int n) {
    if (n == 0)
        return;
    printBinary(n / 2);
    cout << n % 2;
}
```

```
#include <iostream>
#include <conio.h>
#include <array>
#include <string>
using namespace std;

struct Employee {
    string id;
    string name;
    string age;
    string salary;
    bool exists = false;
};

// Move cursor to (x, y) using ANSI escape codes
void gotoxy(short x, short y) {
    cout << "\033[" << y + 1 << ";" << x + 1 << "H";
}
```

```
// Clear screen using ANSI escape codes
void clearScreen() {
    cout << "\033[2J\033[H";
}

// Employee Form – allows navigation and text input for fields
void employeeForm(Employee& emp) {
    int choice = 0;
    char key;

    const int idLine = 2;
    const int nameLine = 3;
    const int ageLine = 4;
    const int salaryLine = 5;

    while (true) {
        clearScreen();
        cout << "Employee Information" << endl;
        cout << "1. Enter Employee ID" << endl;
        cout << "2. Enter Employee Name" << endl;
        cout << "3. Enter Employee Age" << endl;
        cout << "4. Enter Employee Salary" << endl;
        cout << "5. Exit Program" << endl;
        cout << "Enter your choice: ";
        cin >> choice;
        cout << endl;

        switch (choice) {
            case 1:
                cout << "Enter Employee ID: ";
                cin >> emp.id;
                cout << endl;
                break;
            case 2:
                cout << "Enter Employee Name: ";
                cin >> emp.name;
                cout << endl;
                break;
            case 3:
                cout << "Enter Employee Age: ";
                cin >> emp.age;
                cout << endl;
                break;
            case 4:
                cout << "Enter Employee Salary: ";
                cin >> emp.salary;
                cout << endl;
                break;
            case 5:
                cout << "Exiting Program..." << endl;
                exit(0);
            default:
                cout << "Invalid choice. Please enter 1, 2, 3, 4, or 5." << endl;
        }
    }
}
```

```
cout << "===== EMPLOYEE FORM =====" << endl << endl;
cout << "Id      : " << emp.id << endl;
cout << "Name    : " << emp.name << endl;
cout << "Age     : " << emp.age << endl;
cout << "Salary  : " << emp.salary << endl;
cout << "\n(type to edit, Enter to save, ESC to cancel)\n";

int cursorY;
int cursorX = 9;
switch (choice) {
    case 0: cursorY = idLine; cursorX += emp.id.size(); break;
    case 1: cursorY = nameLine; cursorX += emp.name.size(); break;
    case 2: cursorY = const int employeeForm::nameLine); break;
    case 3: cursorY = salaryLine; cursorX += emp.salary.size(); break;
}

gotoxy(cursorX, cursorY);
`
```

```
if (key == -32) { // Arrow key
    key = _getch();
    if (key == 72 && choice > 0) choice--;           // Up
    else if (key == 80 && choice < 3) choice++;      // Down
}
else if (key == 27) { // ESC
    break;
}
else if (key == 13) { // ENTER saves and exits
    emp.exists = true;
    break;
}
else if (key == 8) { // Backspace
    switch (choice) {
        case 0: if (!emp.id.empty()) emp.id.pop_back(); break;
        case 1: if (!emp.name.empty()) emp.name.pop_back(); break;
        case 2: if (!emp.address.empty()) emp.address.pop_back(); break;
        case 3: if (!emp.phone.empty()) emp.phone.pop_back(); break;
    }
}
```

```
    }
    else if (isprint(key)) { // Printable characters
        switch (choice) {
            case 0: emp.id += key; break;
            case 1: emp.name += key; break;
            case 2: emp.age += key; break;
            case 3: emp.salary += key; break;
        }
    }
}
```

```
int main() {
    // Enable ANSI escape sequences on Windows 10+ terminals
    system("");

    array<string, 4> menu = {"New", "Display", "Display All", "Exit"};
    array<Employee, 4> employees;
```

```
if (choice == i)
    cout << "\033[31m> " << menu[i] << "\033[0m\n"; // Highlight selected in red
else
    cout << " " << menu[i] << "\n";
}

key = _getch();

if (key == -32) {
    key = _getch();
    if (key == 72 && choice > 0) choice--;           // UP
    else if (key == 80 && choice < 3) choice++;      // DOWN
}
else if (key == 13) { // ENTER
    clearScreen();

    if (choice == 0) { // Add new employee
        Employee emp;
        employeeForm(emp);

        if (emp.exists) {
            // Convert entered ID to index
            . . .
        }
    }
}
```

```
// Convert entered ID to index
int index;
try {
    index = stoi(emp.id);
} catch (...) {
    cout << "Invalid ID. Must be a number between 0 to 3.\n";
    _getch();
    continue;
}

if (index < 0 || index >= 4) {
    cout << "Invalid index. Valid range is 0 to 3.\n";
} else {
    employees[index] = emp;
    employees[index].exists = true;
    cout << "\nEmployee saved successfully at index " << index << ".\n";
}
} else {
    cout << "\nCancelled.\n";
}
_getch();
```

```
else if (choice == 1) { // Display one
    int index;
    cout << "Enter index from 0 to 3): ";
    cin >> index;

    if (index < 0 || index >= 4)
        cout << "Invalid index.\n";
    else if (employees[index].exists) {
        Employee e = employees[index];
        cout << "\n--- Employee Info ---\n";
        cout << "ID: " << e.id << "\n";
        cout << "Name: " << e.name << "\n";
        cout << "Age: " << e.age << "\n";
        cout << "Salary: " << e.salary << "\n";
    } else {
        cout << "Employee not found.\n";
    }
    cout << "\nPress any key...";
    _getch();
}
```

```
else if (choice == 2) { // Display all
    cout << "---- All Employees ---\n";
    bool any = false;
    for (int i = 0; i < 4; ++i) {
        if (employees[i].exists) {
            any = true;
            cout << "\nIndex " << i << ":\n";
            cout << " ID: " << employees[i].id << "\n";
            cout << " Name: " << employees[i].name << "\n";
            cout << " Age: " << employees[i].age << "\n";
            cout << " Salary: " << employees[i].salary << "\n";
        }
    }
    if (!any) cout << "No employees found.\n";
    cout << "\nPress any key...";
    _getch();
}

else if (choice == 3) { // Exit
    cout << "Exiting program...\n";
    break;
}
```

D:\codeBlocks\menu\bin\Debug\menu.exe

```
/**  
--- Employee Menu ---  
|> New  
| Display  
| S Display All  
| space Exit  
| menu  
| Sou
```

D:\codeBlocks\menu\bin\Debug\menu.exe

===== EMPLOYEE FORM =====

Id : 2  
Name : ahmed  
Age : 22  
Salary : 1500

(type to edit, Enter to save, ESC to cancel)

D:\codeBlocks\menu\bin\Debug\menu.exe

----- Employee Menu -----

New

> Display

Display All

Exit

D:\codeBlocks\menu\bin\Debug\menu.exe

Enter index from 0 to 3): 2

D:\codeBlocks\menu\bin\Debug\menu.exe

Enter index from 0 to 3): 2

--- Employee Info ---

ID: 2

SName: ahmed

Age: 22

Salary: 1500

Press any key...



D:\codeBlocks\menu\bin\Debug\me

--- Employee Menu ---

New

Display

> Display All

Exit



D:\codeBlocks\menu\bin\Debug\menu.exe

---- All Employees ----

Index 1:

ID: 1

Name: ahmed

Age: 22

Salary: 1500

Index 2:

ID: 2

Name: ahmed

Age: 22

Salary: 1500

Press any key...■