OOP TUTORIAL 2

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CODE:

```
/* Employee Information System
Develop a program in C++ to create a database of an employee's
information
system containing the following fields: Name, employee ID,
Department, Date
of Joining, Contact address, Telephone number etc. Construct the
database
with suitable member functions to accept and print employee details.
Make use
of constructor types, destructor, static members, inline function and
dynamic
memory allocation using operators-new and delete.*/

#include <iostream>
#include <string>
using namespace std;

class Employee {
private:
    string name;
    int employee_id;
    string department;
    int day, month, year;
    string contact_address;
    long long telephone_number;

public:
    static int count;

    // Inline welcome function
    inline void welcome() {
        cout << "\nWelcome to the Employee Information System\n";
    }

    void display();

    // Default constructor
    Employee() {
        count++;
        cout << "\nDefault constructor called. Employee count: " <<
count << "\n";
```

```
        name = "NoName";
        employee_id = 0;
        department = "None";
        day = 0;
        month = 0;
        year = 0;
        contact_address = "Not Provided";
        telephone_number = 0;
    }

    // Parameterized constructor
    Employee(string n, int eid, string dt, int d, int m, int y,
string ca, long long tn) {
        count++;
        cout << "\nParameterized constructor called. Employee count:
" << count << "\n";
        name = n;
        employee_id = eid;
        department = dt;
        day = d;
        month = m;
        year = y;
        contact_address = ca;
        telephone_number = tn;
    }

    // Copy constructor
    Employee(const Employee &A) {
        count++;
        cout << "\nCopy constructor called. Employee count: " <<
count << "\n";
        name = A.name;
        employee_id = A.employee_id;
        department = A.department;
        day = A.day;
        month = A.month;
        year = A.year;
        contact_address = A.contact_address;
        telephone_number = A.telephone_number;
    }

    // Destructor
    ~Employee() {
        cout << "Destructor called for Employee ID: " << employee_id
             << ". Remaining employees: " << (count - 1) << "\n";
```

```
        count--;
    }
};

int Employee::count = 0;

void Employee::display() {
    cout << "Name: " << name << endl;
    cout << "Employee ID: " << employee_id << endl;
    cout << "Department: " << department << endl;
    cout << "Date of Joining: " << day << "/" << month << "/" << year
<< endl;
    cout << "Contact Address: " << contact_address << endl;
    cout << "Telephone Number: " << telephone_number << endl;
    cout << "Current number of employees: " << count << endl << endl;
}

int main() {
    string n, dt, ca;
    int eid, d, m, y;
    long long tn;

    cout << "Enter Name: ";
    getline(cin, n);

    cout << "Enter Employee ID: ";
    cin >> eid;

    cout << "Enter Department: ";
    cin >> dt;

    cout << "Enter date of joining (DD MM YYYY): ";
    cin >> d >> m >> y;
    cin.ignore();

    cout << "Enter Contact Address: ";
    getline(cin, ca);

    cout << "Enter Telephone Number: ";
    cin >> tn;

    // objects allocated dynamically
    Employee* obj1 = new Employee(n, eid, dt, d, m, y, ca, tn);
    obj1->welcome();
    obj1->display();
```

```
    Employee* obj2 = new Employee;
    obj2->welcome();
    obj2->display();

    Employee* obj3 = new Employee(*obj1);
    obj3->welcome();
    obj3->display();

    // Deleting allocated objects
    delete obj1;
    delete obj2;
    delete obj3;

    return 0;
}
```

OUTPUT:

```
Enter Name: Varad
Enter Employee ID: 1234
Enter Department: comp
Enter date of joining (DD MM YYYY): 11 06 2006
Enter Contact Address: dhayri ,pune
Enter Telephone Number: 123456789

Parameterized constructor called. Employee count: 1

Welcome to the Employee Information System
Name: Varad
Employee ID: 1234
Department: comp
Date of Joining: 11/6/2006
Contact Address: dhayri ,pune
Telephone Number: 123456789
Current number of employees: 1


Default constructor called. Employee count: 2

Welcome to the Employee Information System
Name: NoName
Employee ID: 0
Department: None
```

```
Date of Joining: 0/0/0
Contact Address: Not Provided
Telephone Number: 0
Current number of employees: 2


Copy constructor called. Employee count: 3

Welcome to the Employee Information System
Name: Varad
Employee ID: 1234
Department: comp
Date of Joining: 11/6/2006
Contact Address: dhayri ,pune
Telephone Number: 123456789
Current number of employees: 3

Destructor called for Employee ID: 1234. Remaining employees: 2
Destructor called for Employee ID: 0. Remaining employees: 1
Destructor called for Employee ID: 1234. Remaining employees: 0


=== Code Execution Successful ===
```