Assignment:-1

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// 1. Print "Hello, World!"
#include <iostream>
using namespace std;
int main() {
    cout << "Hello, World!" << endl;
    return 0;
}

// 2. Add two numbers
#include <iostream>
using namespace std;
int main() {
    int a = 5, b = 7, sum;
    sum = a + b;
    cout << "Sum: " << sum << endl;
    return 0;
}

// 3. Declare and print int, float, char
#include <iostream>
using namespace std;
int main() {
    int i = 10;
    float f = 5.5;
    char c = 'A';
    cout << "Integer: " << i << ", Float: " << f << ", Char: " << c << endl;
    return 0;
}

// 4. Largest of two numbers
#include <iostream>
using namespace std;
int main() {
    int x = 10, y = 20;
    if (x > y)
        cout << x << " is larger." << endl;
    else
        cout << y << " is larger." << endl;
    return 0;
}

// 5. For loop 1 to 10
#include <iostream>
using namespace std;
int main() {
    for (int i = 1; i <= 10; i++) {
        cout << i << " ";
    }
    cout << endl;
    return 0;
}

// 6. While loop: sum of digits
#include <iostream>
using namespace std;
int main() {
    int num = 1234, sum = 0;
    while (num != 0) {
        sum += num % 10;
        num /= 10;
    }
    cout << "Sum of digits: " << sum << endl;
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    return 0;
}

// 7. Character array with cout
#include <iostream>
using namespace std;
int main() {
    char str[] = "Hello";
    cout << "String: " << str << endl;
    return 0;
}

// 8. strcpy usage
#include <iostream>
#include <cstring>
using namespace std;
int main() {
    char str1[] = "Hello";
    char str2[20];
    strcpy(str2, str1);
    cout << "Copied String: " << str2 << endl;
    return 0;
}

// 9. strcmp usage
#include <iostream>
#include <cstring>
using namespace std;
int main() {
    char str1[] = "Test";
    char str2[] = "Test";
    if (strcmp(str1, str2) == 0)
        cout << "Strings are equal." << endl;
    else
        cout << "Strings are not equal." << endl;
    return 0;
}

// 10. strlen usage
#include <iostream>
#include <cstring>
using namespace std;
int main() {
    char str[] = "Hello";
    cout << "Length: " << strlen(str) << endl;
    return 0;
}

// 11. strrev usage (non-standard, not in <cstring>)
#include <iostream>
#include <cstring>
using namespace std;
char* strrev(char* str) {
    int n = strlen(str);
    for (int i = 0; i < n / 2; i++) {
        char temp = str[i];
        str[i] = str[n - i - 1];
        str[n - i - 1] = temp;
    }
    return str;
}
int main() {
    char str[] = "Hello";
    cout << "Reversed: " << strrev(str) << endl;
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    return 0;
}

// 12. Student class
#include <iostream>
using namespace std;
class Student {
public:
    string name;
    int age;
    void display() {
        cout << "Name: " << name << ", Age: " << age << endl;
    }
};
int main() {
    Student s;
    s.name = "John";
    s.age = 20;
    s.display();
    return 0;
}

// 13. Function Overloading
#include <iostream>
using namespace std;
void display(int i) {
    cout << "Integer: " << i << endl;
}
void display(float f) {
    cout << "Float: " << f << endl;
}
int main() {
    display(10);
    display(3.14f);
    return 0;
}

// 14. Constructor
#include <iostream>
using namespace std;
class Person {
public:
    string name;
    int age;
    Person(string n, int a) {
        name = n;
        age = a;
    }
    void show() {
        cout << "Name: " << name << ", Age: " << age << endl;
    }
};
int main() {
    Person p("Alice", 25);
    p.show();
    return 0;
}

// 15. Object creation and method call
#include <iostream>
using namespace std;
class Car {
public:
    void drive() {
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        cout << "Car is driving." << endl;
    }
};
int main() {
    Car c;
    c.drive();
    return 0;
}
```