Assignment: Transitioning from C++ to Python

Objective:
You have already learned Programming Fundamentals in C++. Now, before moving towards Python libraries like NumPy & Pandas, it is very important to get comfortable with the basic Python syntax. This assignment will help you relate your existing C++ knowledge with Python.

Instructions:
1. Each question is given in C++ syntax.
2. You need to write its equivalent code in Python.
3. Try to notice differences such as:
- No semicolons in Python.
- No data type declaration in Python.
- Indentation replaces { } braces.
- cout / cin replaced by print() / input().

Q1: Hello World

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

Q2: Input and Output

```
#include <iostream>
using namespace std;
int main() {
    int age;
    cout << "Enter your age: ";
    cin >> age;
    cout << "Your age is " << age << endl;
    return 0;
}
```

Q3: If-Else Condition

```
#include <iostream>
using namespace std;
int main() {
    int num;
    cout << "Enter a number: ";
    cin >> num;
    if(num % 2 == 0)
        cout << "Even";
    else
        cout << "Odd";
    return 0;
}
```

Q4: For Loop (1 to 10)

```
#include <iostream>
using namespace std;
int main() {
    for(int i=1; i<=10; i++) {
        cout << i << " ";
    }
    return 0;
```

```
    }
```

Q5: While Loop (Sum of numbers)

```cpp
#include <iostream>
using namespace std;
int main() {
    int sum = 0, i = 1;
    while(i <= 5) {
        sum += i;
        i++;
    }
    cout << "Sum = " << sum;
    return 0;
}
```

Q6: Functions

```cpp
#include <iostream>
using namespace std;

int add(int a, int b) {
    return a + b;
}

int main() {
    cout << add(3, 5);
    return 0;
}
```

Q7: Arrays (Lists in Python)

```cpp
#include <iostream>
using namespace std;
int main() {
    int arr[5] = {10, 20, 30, 40, 50};
    for(int i=0; i<5; i++) {
        cout << arr[i] << " ";
    }
    return 0;
}
```

Q8: Strings

```cpp
#include <iostream>
#include <string>
using namespace std;
int main() {
    string name;
    cout << "Enter your name: ";
    cin >> name;
    cout << "Hello " << name;
    return 0;
}
```

Q9: Switch Case

```cpp
#include <iostream>
using namespace std;
int main() {
    int day = 2;
    switch(day) {
        case 1: cout << "Monday"; break;
        case 2: cout << "Tuesday"; break;
        case 3: cout << "Wednesday"; break;
        default: cout << "Other day";
```

```
        }
        return 0;
    }
```

Q10: Simple Class and Object

```cpp
#include <iostream>
using namespace std;

class Student {
public:
    string name;
    void display() {
        cout << "Student name: " << name << endl;
    }
};

int main() {
    Student s1;
    s1.name = "Ali";
    s1.display();
    return 0;
}
```