

# Lab 1

## Data Structures C++ for C Coders

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C vs C++  
const  
cout  
new & delete  
reference

## Lab 1: Convert a C program cprog.cpp to cplus.cpp using C++

```
// lab01 - cprog.cpp
#include <stdio.h>
#define N 40
void sum(int d[], int n, int* p) {
    *p = 0;
    for(int i = 0; i < n; ++i)
        *p = *p + d[i];
}

int main() {
    int total = 0;
    int data[N];
    for(int i = 0; i < N; ++i) data[i] = i;
    sum(data, N, &total);
    printf("Total is %d\n", total);
    return 0;
}
```

- Use a **reference** operator, but not a pointer.
- Use **const**, but not **#define**.
- Use **new** and **delete** operators.
- Use **cout** & **endl** instead of **printf()**.
- **Do not use** "using namespace std;".
- Don't change the return type of **sum()**.
  
- Submit **cplus.cpp** to Piazza lab1 folder by the end of the day assigned.

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