

CS 3460

Introduction to C++ Reference Types



Reference Types

- A C++ **reference** has NOTHING to do with a Java **reference**
- A reference is an alias to a variable, one that already exists.
 - No such thing as an undefined reference (a good thing)
- & symbol is used to decorate a type as a reference

```
double goldenRatio = 1.6180339887;  
double& alias = goldenRatio;
```

Let's take a look at this in a demonstration...

Reference Types

- Reference types as function parameters (this is great)

```
void swap(int& x, int& y)
{
    int temp = x;
    x = y;
    y = temp;
}
```

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Reference Types

- Incorrect/Illegal use of references

```
swap(a, 6);
```



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const double PI = 3.14159;  
double& z = PI;
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int& doubleValue(int n)  
{  
    return 2 * n;  
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double& z = PI;
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int& doubleValue(int n)  
{  
    return 2 * n;  
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```

```
int& twiceValue(int n)  
{  
    int twice = 2 * n;  
  
    return twice;  
}
```

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swap(a, 6);
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const double PI = 3.14159;  
double& z = PI;
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int& twiceValue(int n)  
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