

Perl Dereferencing Cheat-sheet
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```
# an array
@arrayVariable = ("A","T","G","C");

# a reference to the array
$arrayRef = \@arrayVariable;

# reference to an anonymous array
$arrayRef = ["A","T","G","C"];

# access an element of the array
$arrayRef->[0]

# access the array
@$arrayRef

# use the reference as an array
pop(@$arrayRef);
push(@$arrayRef, "X");

# Dereferencing the array
@$arrayRef;           # entire array
@{$arrayRef};         # entire array
@$arrayRef[0..2];     # slice of the array


# a hash
%hashVar = ("one">1,"two">2,"three">3);

# reference to a hash
$altHashRef = \%hashVar;

# reference to an anonymous hash
$hashRef = {"one">1,"two">2,"three">3};

# access a value from the hash
$$hashRef{"one"};
$hashRef->{"two"};

# use the reference as a hash
%$hashRef;
%{$hashRef};
```

```
# Hash of hashes and arrays
$ref = {"hash"=>{"a"=>1,"b"=>2},"array"=>[3,4]};

# Access the hash out of the hash
%{$ref->{"hash"}};

# Access a value from the hash
$ref->{"hash"}->{"a"};

# Add an element to the hash within the hash
$ref->{"hash"}->{"c"} = 0;

# Access the array in the hash
@{$ref->{"array"}};

# Access a value from the hash
$ref->{"array"}->[1];

# Add an element to the array within the hash
push(@{$ref->{"array"}}, 5);
```