Arrays in Bash are ordered lists of values. You can create a list from scratch by assigning it to a variable name. Lists are created with parentheses (( )) with a space separating each element in the list. Let's make a list of the plagues of Egypt:

```
1   plagues=(blood frogs lice flies sickness boils hail locusts darkness death)
2   
```

To retrieve the array you need to use parameter expansion, which involves the dollar sign and curly brackets (${ }). The positions of the elements in the array are numbered starting from zero. To get the first element of this array use ${plagues[0]} like so:

```
1   echo ${plagues[0]}
2
3   ## blood
4   
```

Notice that the first element has an index of 0. You can get any of the elements this way, for example the fourth element:

```
1   echo ${plagues[3]}
2
3   ## flies
4   
```

To get all of the elements of plagues use a star (*) between the square brackets:

```
1   echo ${plagues[*]}
2
3   ## blood frogs lice flies sickness boils hail locusts darkness death
```

You can also change an individual elements in the array by specifying their index with square brackets:

```
1   echo ${plagues[*]}
2   plagues[4]=disease
3   echo ${plagues[*]}
4
5   ## blood frogs lice flies sickness boils hail locusts darkness death
6   ## blood frogs lice flies disease boils hail locusts darkness death
7   
```

To get only part of an array you have to specify the index you would like to start at, followed by the number of elements you would like to retrieve from the array, separated by colons:

```
1   echo ${plagues[*]:5:3}
2
3   ## boils hail locusts
4
```

The above query essentially says: get 3 array elements starting from the sixth element of the array (remember, the sixth element has an index of 5).

You can find the length of an array using the pound sign (#):

```
1   echo ${#plagues[*]}
2
3   ## 10
```

You can use the plus-equals operator (+=) to add an array onto the end of an array array:

```
1   dwarfs=(grumpy sleepy sneezy doc)
2   echo ${dwarfs[*]}
3   dwarfs+=(bashful dopey happy)
4   echo ${dwarfs[*]}
5
6   ## grumpy sleepy sneezy doc
7   ## grumpy sleepy sneezy doc bashful dopey happy
8
```

Summary

- Arrays are a linear data structure with ordered elements which can be stored in variables.

- The each element of an array has an index and the first index is 0.

- Individual elements of an array can be accessed using their index.

Mark as completed