Introduction to Software Systems (CS6.201)

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Arrays

Arrays can be declared by listing out the elements, separated by spaces and enclosed in parentheses; for example `("cse" "csd" "ece" "ecd" "cld" "cnd" "chd")`.

If the array is accessed using `$`, only the first (index 0) entry is printed. In order to print all entries, use the syntax `${list[*]}`. One can index into lists using the syntax `${list[indx]}`. Individual elements in the list can also be altered by using `list[indx]` as an lvalue. Lists have no boundaries; any index can be used.

Search-and-replace can be run on the contents of an array; for example `${list[*]/find/replace}` will return the edited array. It will *not* edit the original array; `${list[*]}` is unchanged.

Loops

`for` loops follow the syntax

```
for var in list
do
    code
done
```

In case of a variable range, one can use the syntax `{1..5}`. If one does not want to use consecutive numbers, the `$(seq 1 4 20)` (for instance) syntax runs the loop with values 1, 5, 11, and so on.

`while` loops are similar:

```
while cond
do
    code
done
```

Just like in if statements, the condition needs to have the `test` command or be enclosed in square brackets.

Switch case

Switch case stements have the following syntax:

```
case <expr> in
    case_1 ) code1 ;;
    case_2 ) code2 ;;
    ...
    *) default ;;
esac
```