**1) If you had an array of 5 strings (in any random order), how would you search through them to to check if a needle/input was contained in the set?**

***f("Foo", ["Foo", "Bar", "Foo Bar", "Bar Foo", "Foo Foo"]) = true;***

***f("Noo", ["Foo", "Bar", "Foo Bar", "Bar Foo", "Foo Foo"]) = false;***

**Define f(n, m), such that "n" is a needle, "m" is a haystack, and it returns a boolean:**

$count = count($m);

for($i=0; $i<$count; $i++){

If (strpos($m[$i, $n)){

Return true;

break;

}

}

Return false;

**2) If you wanted to find the factorial of any number, how would you program a function to return this value?**

**Suppose f(n) = n! aka (n\*n-1 \*.....\* 1), define f(n) in pseudocode:**

**Ex.**

**2! = 2 \* 1 = 2;**

**4! = 4 \* 3 \* 2 \* 1 = 24;**

Function factorial($n){

If ($n ==0)

Return 1;

Return $n \* factorial($n-1);

}

$fact=1;

for($i=1; $i<=$n; $i++){

$fact \*= $i;

}

Return $fact;

**3) Let’s assume you had a certain feature of the codebase called “Foo” that contained “Bar” objects.**

**There are also red, blue, and green “Bar”s. In pseudowords/pseudocode, how would you setup the codebase to represent these objects?**



**4) If you had to build your ideal web-based chat system (or rebuild 7 Cups over again), which languages, technologies, coding practices would you employ to do so, and why would you architect it in that manner?**