

Lecture 14 Worksheet

Question 1

How would you implement the following function in the Hack Virtual Machine language ?

```
int i, sum ;
// initialise the local variables

i = 0 ;

sum = 0 ;

// your loop
while ( i < 10 )
{

    sum = sum + i ;

    i = i + 1 ;

}
```

Question 2

How would you implement the following Hack Virtual Machine language operations in Hack assembly language ?

```
if-goto labelX
```

Question 3

How would you implement the following function in the Hack Virtual Machine language ?

<pre>function recfib(int x) { int fib ; fib = 1 ; if (x > 1) { fib = recfib(x - 1) + recfib(x - 2) ; } return fib ; }</pre>	<pre>function recfib 1 // x is on top of the stack here // initialise the local variable // your loop // put result on the stack push local 0 return</pre>
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