

Iteration

The while loop



Lecture Contents

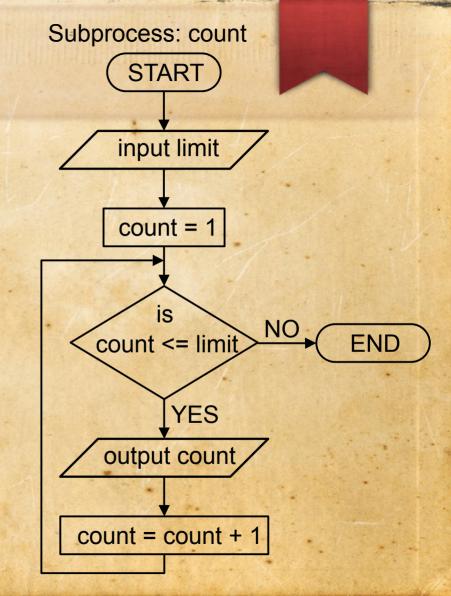
- Iteration on the AP CSc A Exam
- The while statement
- Practice

Iteration

- · AP Exam Weighting: 17.5% 22.5%
 - The while statement
 - The for statement

while loop

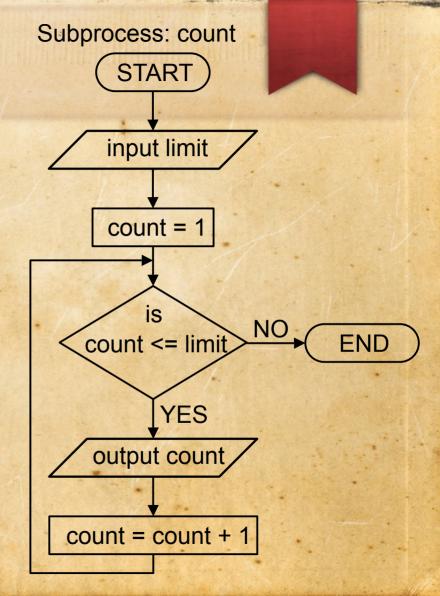
- Iteration is the process of repeating a set of instructions or actions.
- In programming, iteration repeats a block of code until a condition is met.
- Consider the algorithm represented by this flowchart.
 - What is the result of following this algorithm?



while loop

• The algorithm represented in the flowchart can be converted into the following Java code:

```
public static void count(int limit) {
   int count = 1;
   while(count <= limit) {
      System.out.println(count);
      count += 1;
   }
}</pre>
```



while loop

 Adding a main process and executing the Java code gives us the following output:

```
public static void main(String[] args) {
   count(5);
public static void count(int limit) {
   int count = 1;
  while(count <= limit) {</pre>
      System.out.println(count);
      count += 1;
```

Practice

- Write a method
 - That repeatedly prints a character a variable number of times

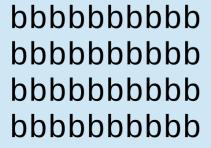
```
public static void main(String[] args) {
   printCharRepeatedly('a',5);
}
public static void printCharRepeatedly(char c, int numTimes) {
   //TODO: Write the code for this method.
}
```



Practice

- Write a method
 - That repeatedly prints a character in a grid of size x,y

```
public static void main(String[] args) {
    printCharGrid('b',10,4);
}
public static void printCharGrid(char c, int x, int y) {
    //TODO: Write the code for this method.
}
```





Iteration

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