



## Java Lab

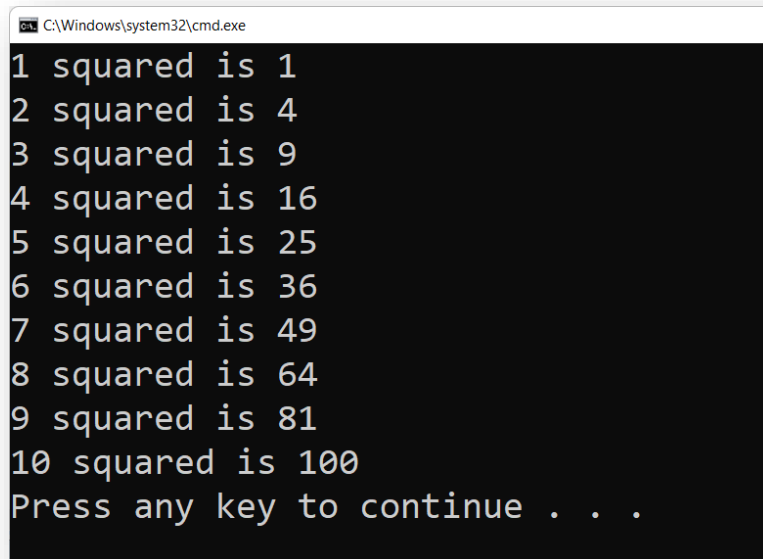
### While Loops

**IMPORTANT!** Save all your work to a safe location such as oneDrive.

Create a folder for SDPD into which you will save all your work for this module, arranged how you wish. Ideally you should create a folder each week for your lab exercises. Note that you should create a separate file for each exercise.

## Exercise 1

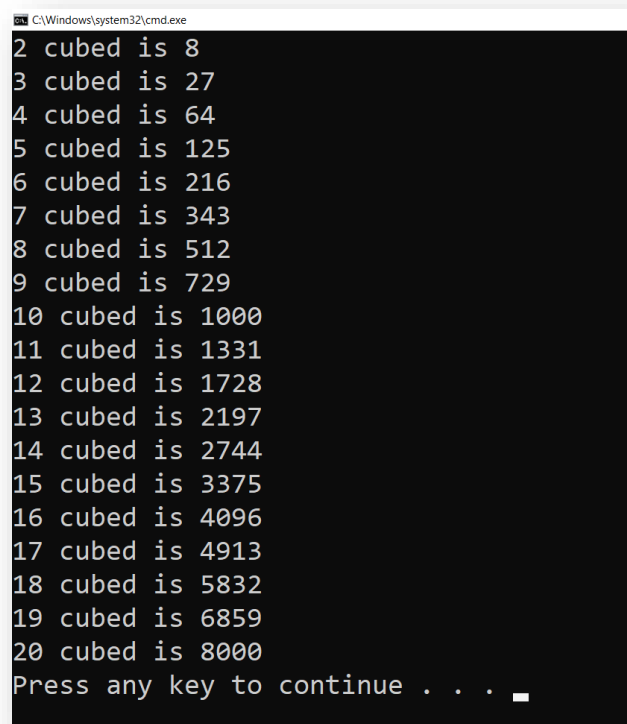
Write a program called *SquareOfNumbers* that prints the square of the numbers from 1 to 10.



```
C:\Windows\system32\cmd.exe
1 squared is 1
2 squared is 4
3 squared is 9
4 squared is 16
5 squared is 25
6 squared is 36
7 squared is 49
8 squared is 64
9 squared is 81
10 squared is 100
Press any key to continue . . .
```

## Exercise 2

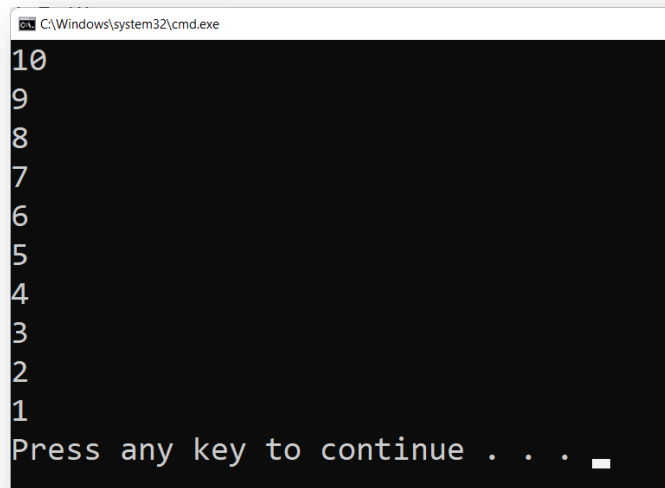
Write a program called *CubeOfNumbers* that prints the cube of the numbers from 2 to 20.



```
C:\Windows\system32\cmd.exe
2 cubed is 8
3 cubed is 27
4 cubed is 64
5 cubed is 125
6 cubed is 216
7 cubed is 343
8 cubed is 512
9 cubed is 729
10 cubed is 1000
11 cubed is 1331
12 cubed is 1728
13 cubed is 2197
14 cubed is 2744
15 cubed is 3375
16 cubed is 4096
17 cubed is 4913
18 cubed is 5832
19 cubed is 6859
20 cubed is 8000
Press any key to continue . . .
```

## Exercise 3

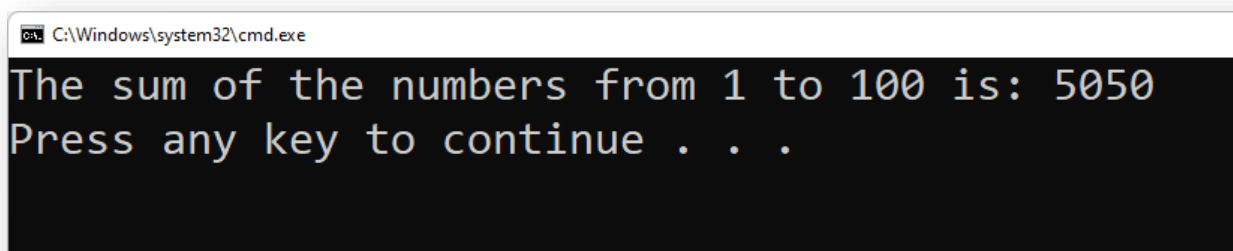
Write a program that prints the numbers from 1 to 10 in reverse order.



```
C:\Windows\system32\cmd.exe
10
9
8
7
6
5
4
3
2
1
Press any key to continue . . .
```

## Exercise 4

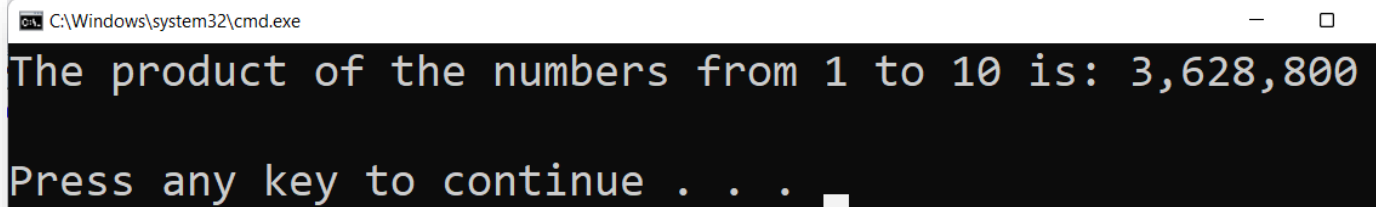
Write a program called *SumTo100* that calculates the sum of the numbers from 1 to 100.



```
C:\Windows\system32\cmd.exe
The sum of the numbers from 1 to 100 is: 5050
Press any key to continue . . .
```

## Exercise 5

Write a program called *ProductTo10* that calculates the product of the numbers from 1 to 10.



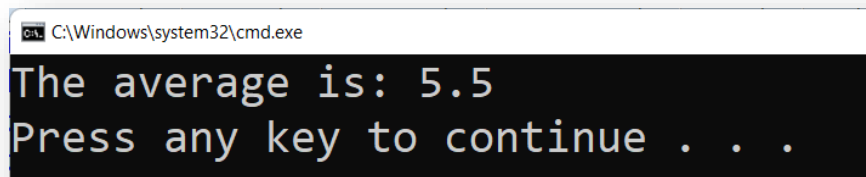
C:\Windows\system32\cmd.exe

The product of the numbers from 1 to 10 is: 3,628,800

Press any key to continue . . .

## Exercise 6

Write a program that calculates the average of the numbers from 1 to 10.



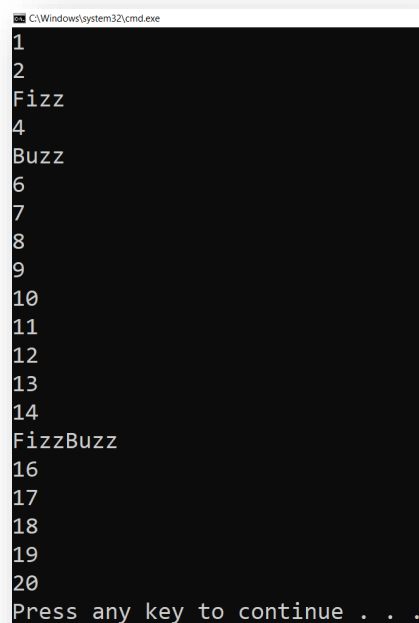
C:\Windows\system32\cmd.exe

The average is: 5.5

Press any key to continue . . .

## Exercise 7

Print the numbers 1 through 20, but print "Fizz" instead of 3, "Buzz" instead of 5, and "FizzBuzz" instead of 15.

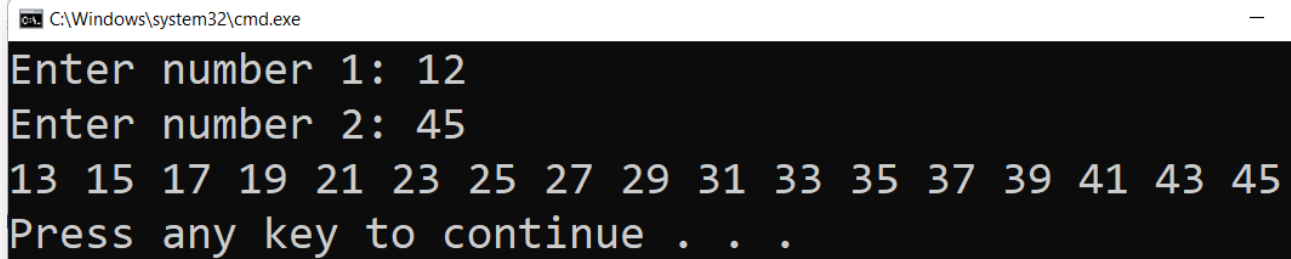


C:\Windows\system32\cmd.exe

1  
2  
Fizz  
4  
Buzz  
6  
7  
8  
9  
10  
11  
12  
13  
14  
FizzBuzz  
16  
17  
18  
19  
20  
Press any key to continue . . .

## Exercise 8

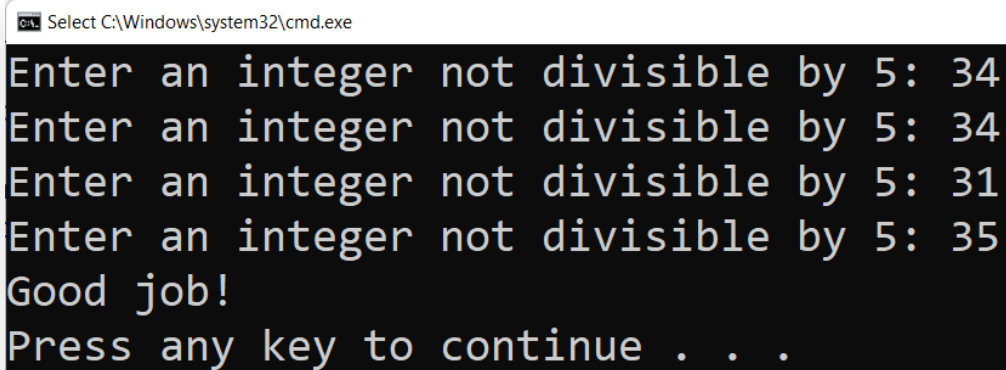
Write a program called *PrintOddRange* that asks the user to enter two numbers and then prints all the odd numbers between those two numbers.



```
C:\Windows\system32\cmd.exe
Enter number 1: 12
Enter number 2: 45
13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45
Press any key to continue . . .
```

## Exercise 9

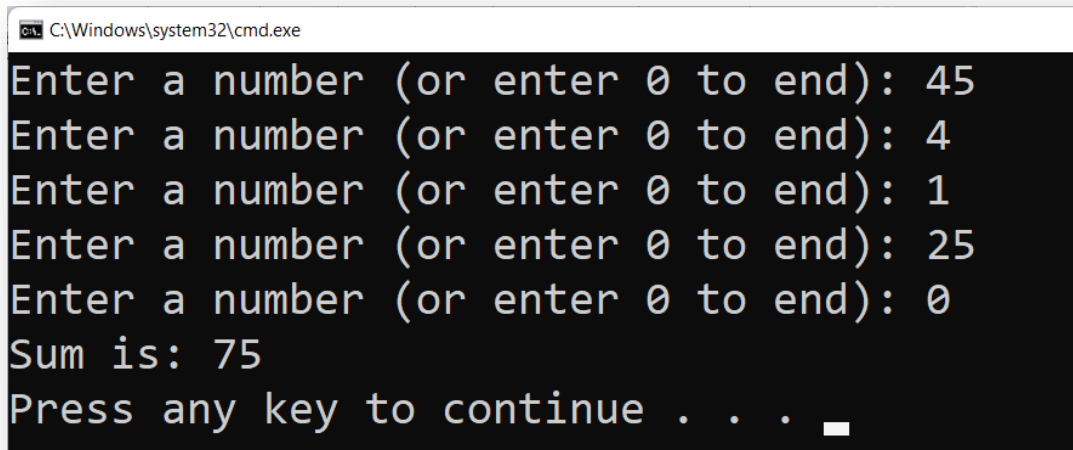
Write a program in java called *DivBy5* that keeps asking the user to enter a number not divisible by 5. The program ends once a number that is divisible by 5 is entered.



```
Select C:\Windows\system32\cmd.exe
Enter an integer not divisible by 5: 34
Enter an integer not divisible by 5: 34
Enter an integer not divisible by 5: 31
Enter an integer not divisible by 5: 35
Good job!
Press any key to continue . . .
```

## Exercise 10

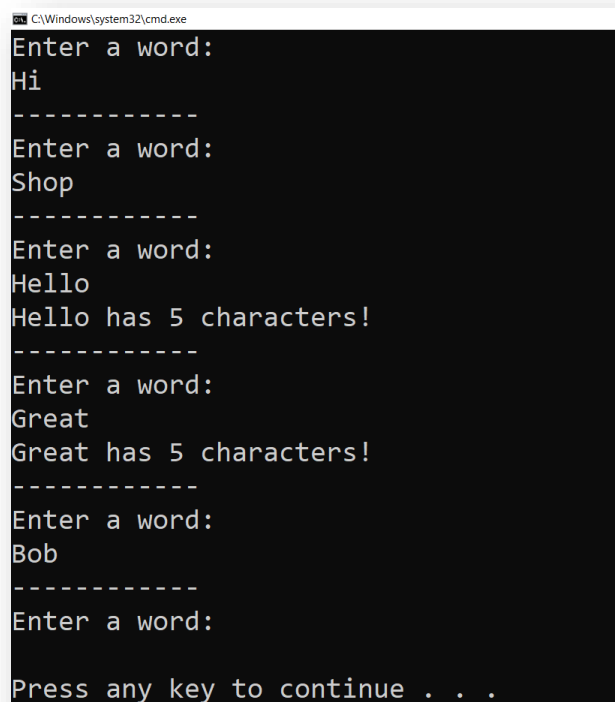
Write a program called *IntegerAdd* using a while loop that asks the user to enter a positive integer, and then keeps asking for a positive integer until the user enters a zero. At that point, the program should print out the sum of all the numbers entered.



```
C:\Windows\system32\cmd.exe
Enter a number (or enter 0 to end): 45
Enter a number (or enter 0 to end): 4
Enter a number (or enter 0 to end): 1
Enter a number (or enter 0 to end): 25
Enter a number (or enter 0 to end): 0
Sum is: 75
Press any key to continue . . .
```

## Exercise 11

Write a program called *StringLengthCalc* using a while loop that allows the user to enter words. If the word is exactly 5 characters long, a message is output to the console (see below), otherwise, the user is prompted to enter another word. To end the loop, the user enters an empty string (press return). *Hint: word.length() will calculate the numbers of letters in a String.*

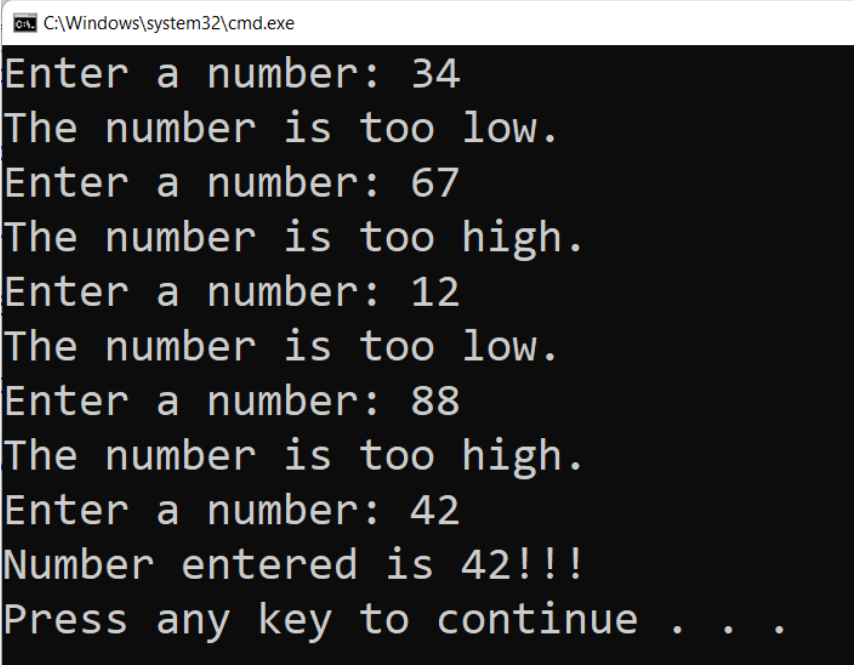


```
C:\Windows\system32\cmd.exe
Enter a word:
Hi
-----
Enter a word:
Shop
-----
Enter a word:
Hello
Hello has 5 characters!
-----
Enter a word:
Great
Great has 5 characters!
-----
Enter a word:
Bob
-----
Enter a word:

Press any key to continue . . .
```

## Exercise 12

Write a program called *MeaningOfLife* using a while loop that keeps asking the user to enter a number until they enter the number 42. If the number is higher or lower than 42, an appropriate message is displayed.



```
C:\Windows\system32\cmd.exe
Enter a number: 34
The number is too low.
Enter a number: 67
The number is too high.
Enter a number: 12
The number is too low.
Enter a number: 88
The number is too high.
Enter a number: 42
Number entered is 42!!!
Press any key to continue . . .
```