

```

/*
 * Justin Mendes
 * December 7, 2016
 * Unit 4 Activity 2 Program/Question 1
 * This program will ask for a distance(m) and time(m) to calculate velocity (rounded
to the nearest hundredth)
 */
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
import java.text.DecimalFormat;
public class Velocity
{
    public static void main(String[] args) throws NumberFormatException,
IOException
    {
        //Variable Declarations and Initializations
        int tryAgain = 1;
        double distance, time;
        BufferedReader br = new BufferedReader(new
InputStreamReader(System.in));
        while(tryAgain == 1)
        {
            System.out.println("VELOCITY CALCULATOR");
            System.out.println("=====\n");
            //user inputs a distance in metres
            System.out.println("Enter a distance (metres):");
            distance = Integer.parseInt(br.readLine());
            //user inputs a time in seconds
            System.out.println("\nEnter a time (seconds):");
            time = Integer.parseInt(br.readLine());
            //Call the velocity Calculator method
            velocityCalculator(distance, time);
            //user inputs whether or not they want to try again
            System.out.println("Press 1 to try again.");
            tryAgain = Integer.parseInt(br.readLine());
        } //end loop
    } //end main
    public static void velocityCalculator(double distance, double time) //this
subroutine will calculate the velocity and print it
    {
        DecimalFormat twoDigit = new DecimalFormat("###,##");
        double velocity = distance / time;
        //Output the answer
        System.out.println("\nThe velocity is " + twoDigit.format(velocity) + "
m/s.\n");
    } //end velocityCalculator method
} //end class

```

Velocity [Java Application] C:\Program F

VELOCITY CALCULATOR

=====

Enter a distance (metres):

100

Enter a time (seconds):

20

The velocity is 5 m/s.

Press 1 to try again.

1

VELOCITY CALCULATOR

=====

Enter a distance (metres):

200

Enter a time (seconds):

40

The velocity is 5 m/s.

Press 1 to try again.

1

```
/*
 * Justin Mendes
 * December 22, 2016
 * Unit 4 Activity 2 Program/Question 2
 * This program will get a user input of a number from 10 - 99 and an output of the
number in words
 */
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
public class NumberWords1
{
    public static void main(String[] args) throws NumberFormatException,
IOException
    {
        //Variable Declarations and Initializations
        int tryAgain = 1, tensDigit, onesDigit, numInput;
        while (tryAgain == 1)
        {
            int error = 1;
            //to refresh error each time the loop repeats
            BufferedReader br = new BufferedReader (new InputStreamReader
(System.in)); // user input
            System.out.println("Numbers to Words (10-99 Edition)");
            System.out.println("=====\\n");
            System.out.println("Input a number (10-99) and this program will
repeat it to you with words.");
            //to check if the user inputs a valid number
```

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        numInput=Integer.parseInt(br.readLine());
        if (numInput < 10 || numInput > 99)
        {
            error = 0;
        }//end if
        while (error == 0)
        {
            System.out.println("Invalid number. Enter a number between
10 and 99.\n");
            numInput=Integer.parseInt(br.readLine());//user must re-
enter a number if they entered an invalid one
            if (numInput >= 10 && numInput <= 99)
            {
                error = 1;
            }
        }//end loop
        tensDigit = (int) (Math.floor(numInput % 100) / 10);
        onesDigit = numInput % 10;
        System.out.print("Your number in words is: ");
        if(numInput >= 10 && numInput<=19)
        {
            teens(numInput);
        }//end if
        else
        {
            tens(tensDigit);
            ones(onesDigit);
        }//end if
        System.out.println("\n\nPress 1 to try again.");
        tryAgain = Integer.parseInt(br.readLine());//user decides to try
again
    }//end loop
} //end main
public static void tens(int tensDigit)
{
    switch (tensDigit)
    {
        case 2: System.out.print("TWENTY ");
        break;
        case 3: System.out.print("THIRTY ");
        break;
        case 4: System.out.print("FOURTY ");
        break;
        case 5: System.out.print("FIFTY ");
        break;
        case 6: System.out.print("SIXTY ");
        break;
        case 7: System.out.print("SEVENTY ");
        break;
        case 8: System.out.print("EIGHTY ");
        break;
        case 9: System.out.print("NINETY ");
        break;
        default: System.out.print("");
    }//end switch
}

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} // closes tens method
public static void teens(int numInput)
{
    switch (numInput)
    {
        case 10: System.out.println("TEN");
        break;
        case 11: System.out.println("ELEVEN");
        break;
        case 12: System.out.println("TWELVE");
        break;
        case 13: System.out.println("THIRTEEN");
        break;
        case 14: System.out.println("FOURTEEN");
        break;
        case 15: System.out.println("FIFTEEN");
        break;
        case 16: System.out.println("SIXTEEN");
        break;
        case 17: System.out.println("SEVENTEEN");
        break;
        case 18: System.out.println("EIGHTEEN");
        break;
        case 19: System.out.println("NINETEEN");
        break;
    } // end switch
} // closes teens method
public static void ones(int onesDigit)
{
    switch (onesDigit)
    {
        case 1: System.out.print("ONE");
        break;
        case 2: System.out.print("TWO");
        break;
        case 3: System.out.print("THREE");
        break;
        case 4: System.out.print("FOUR");
        break;
        case 5: System.out.print("FIVE");
        break;
        case 6: System.out.print("SIX");
        break;
        case 7: System.out.print("SEVEN");
        break;
        case 8: System.out.print("EIGHT");
        break;
        case 9: System.out.print("NINE");
        break;
        default: System.out.print("");
    } // end switch
} // closes ones method
} // end class

```

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Numbers to Words (10-99 Edition)
=====
```

Input a number (10-99) and this program will repeat it to you with words.

90

Your number in words is: NINETY

Press 1 to try again.

1

```
Numbers to Words (10-99 Edition)
=====
```

Input a number (10-99) and this program will repeat it to you with words.

999

Invalid number. Enter a number between 10 and 99.

999

Invalid number. Enter a number between 10 and 99.

999

Invalid number. Enter a number between 10 and 99.

99

Your number in words is: NINETY NINE

Press 1 to try again.

1

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Numbers to Words (10-99 Edition)
=====
```

Input a number (10-99) and this program will repeat it to you with words.

```
/*
 * Justin Mendes
 * December 22, 2016
 * Unit 4 Activity 2 Program/Question 2
 * This program will get a user input of a number from 1 - 999 and an output of the
number in words
 */
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
public class NumberWords2
{
    public static void main(String[] args) throws NumberFormatException,
IOException
    {
        //Variable Declarations and Initializations
        int tryAgain = 1, hundredsDigit, tensDigit, onesDigit, numInput;
        while (tryAgain == 1)
        {
            int error = 1;
            //to refresh error each time the loop repeats
            BufferedReader br = new BufferedReader (new InputStreamReader
(System.in)); // user input
            System.out.println("Numbers to Words (1-999 Edition)");
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        System.out.println("=====\n");
        System.out.println("Input a number (1-999) and this program will
repeat it to you with words.");
        //to check if the user inputs a valid number
        numInput=Integer.parseInt(br.readLine());
        if (numInput < 1 || numInput > 999)
        {
            error = 0;
        }//end if
        while (error == 0)
        {
            System.out.println("Invalid number. Enter a number between
1 and 999.\n");
            numInput=Integer.parseInt(br.readLine());//user must re-
enter a number if they entered an invalid one
            if (numInput >= 1 && numInput <= 999)
            {
                error = 1;
            }
        }//end loop
        hundredsDigit = (int) (Math.floor(numInput % 1000) / 100);
        tensDigit = (int) (Math.floor(numInput % 100) / 10);
        onesDigit = numInput % 10;
        System.out.print("Your number in words is: ");
        hundreds(hundredsDigit);
        if(numInput >= 10 && numInput<=19)
        {
            teens(numInput);
        }//end if
        else
        {
            tens(tensDigit);
            ones(onesDigit);
        }//end if
        System.out.println("\n\nPress 1 to try again.");
        tryAgain = Integer.parseInt(br.readLine());//user decides to try
again
    }//end loop
} //end main
public static void hundreds(int hundredsDigit)
{
    switch (hundredsDigit)
    {
        case 1: System.out.print("ONE HUNDRED ");
        break;
        case 2: System.out.print("TWO HUNDRED ");
        break;
        case 3: System.out.print("THREE HUNDRED ");
        break;
        case 4: System.out.print("FOUR HUNDRED ");
        break;
        case 5: System.out.print("FIVE HUNDRED ");
        break;
        case 6: System.out.print("SIX HUNDRED ");
        break;
    }
}

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        case 7: System.out.print("SEVEN HUNDRED ");
        break;
        case 8: System.out.print("EIGHT HUNDRED ");
        break;
        case 9: System.out.print("NINE HUNDRED ");
        break;
        default: System.out.print("");
    } //end switch
} //closes hundreds method
public static void tens(int tensDigit)
{
    switch (tensDigit)
    {
        case 2: System.out.print("TWENTY ");
        break;
        case 3: System.out.print("THIRTY ");
        break;
        case 4: System.out.print("FOURTY ");
        break;
        case 5: System.out.print("FIFTY ");
        break;
        case 6: System.out.print("SIXTY ");
        break;
        case 7: System.out.print("SEVENTY ");
        break;
        case 8: System.out.print("EIGHTY ");
        break;
        case 9: System.out.print("NINETY ");
        break;
        default: System.out.print("");
    } //end switch
} //closes tens method
public static void teens(int numInput)
{
    switch (numInput)
    {
        case 10: System.out.println("TEN");
        break;
        case 11: System.out.println("ELEVEN");
        break;
        case 12: System.out.println("TWELVE");
        break;
        case 13: System.out.println("THIRTEEN");
        break;
        case 14: System.out.println("FOURTEEN");
        break;
        case 15: System.out.println("FIFTEEN");
        break;
        case 16: System.out.println("SIXTEEN");
        break;
        case 17: System.out.println("SEVENTEEN");
        break;
        case 18: System.out.println("EIGHTEEN");
        break;
        case 19: System.out.println("NINETEEN");
    }
}

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        break;
    } //end switch
} //closes teens method
public static void ones(int onesDigit)
{
    switch (onesDigit)
    {
        case 1: System.out.print("ONE");
        break;
        case 2: System.out.print("TWO");
        break;
        case 3: System.out.print("THREE");
        break;
        case 4: System.out.print("FOUR");
        break;
        case 5: System.out.print("FIVE");
        break;
        case 6: System.out.print("SIX");
        break;
        case 7: System.out.print("SEVEN");
        break;
        case 8: System.out.print("EIGHT");
        break;
        case 9: System.out.print("NINE");
        break;
        default: System.out.print("");
    } //end switch
} //closes ones method
} //end class

Numbers to Words (1-999 Edition)
=====

Input a number (1-999) and this program will repeat it to you with words.
1
Your number in words is: ONE

Press 1 to try again.
1
Numbers to Words (1-999 Edition)
=====

Input a number (1-999) and this program will repeat it to you with words.
123
Your number in words is: ONE HUNDRED TWENTY THREE

Press 1 to try again.
1

```