```
 int i1 = 5;   //ok; default type for non-decimal is int
//int i2 = 5.2;  //error because putting decimals in a int

float f1 = 2;           //ok; defaults to a double if neither f or d is appended
float f2 = 3.0f;        //ok; f signifies to interpret as float
//float f2 = 3.0;  //error because theres no "f" at the end of a float number
//float f3 = 3.5;  //error because theres no "f" at the end of a float number

double d1 = 3.5;  //ok; default type for decimal is double
double d2 = 2.0;  //ok; default type for decimal is double
double d3 = 4;  //ok; you can store whole numbers in double
double d4 = 3.5d;  //ok; d signifies to interpret as double

i1 = (int) d1;   //explicit casting of a double into an int
System.out.println ("i = " + i1); //prints i = 3

//i1 = 5.0 / 9.0; //error because float can’t be automatically   // converted to int
i1 = 5 / 9;   // division of integers yields integer
System.out.println ("i = " + i1); // prints i = 0

f1 = (float) d1; //ok; converts d1 into a float
System.out.println ("f = " + f1); //prints f = 3.5


f1 = 5 / 9; //division of integers yields integer
System.out.println ("f = " + f1);//prints f = 0.0
//f1 = 5.0/9.0;  //error because "f" isn't appended dispite having decimals
f1 = 5.0f / 9.0f; //ok; 2 floats devided into a float variable
System.out.println ("f = " + f1); //prints f = 0.5555556

d1 = 3.5 / 2.6; //ok; 2 decimals being devided is defaulted to double if there is no "f" or "d" appended
System.out.println ("d = " + d1); //prints d = 1.346153846153846

d1 = (int) 3.5 / 2.6; //only 3.5 is casted into an int
System.out.println ("d = " + d1);//prints d = 1.1538461538461537

d1 = (int) (3.5) / 2.6; //3.5 is changed to 3 because it is casted into int
System.out.println ("d = " + d1);//prints d = 1.1538461538461537

d1 = (int) (3.5 / 2.6); // both numbers are converted to int so it becomes 3 / 3
System.out.println ("d = " + d1);//prints d = 1.0

//d1 = int 3.5 / 2.6;   // error because there is no bracket around the "int"


d1 = (int) (3.5 / 2.6);// both numbers are converted to int so it becomes 3 / 3
System.out.println ("d = " + d1);//prints d = 1.0

d1 = 3.5 / (int) 2.6; // only 2.6 is converted to int
System.out.println ("d = " + d1);//prints d = 1.75

d1 = (float) (int) (3.5 / 2.6);// both numbers are converted to int so it becomes 3 / 3 and then converted into float
System.out.println ("d = " + d1); //print d = 1.0

short smallValue = 45; //You can store integers inside short
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```
//short s = 3.5;                // error because it cannot take decimals
//smallValue = 234251434324324; //error because short datatype cannot store decimals

int littleValue = smallValue; //littleValue is now storing 45 as an int

smallValue = (short) littleValue; //smallValue stores littleValue casted as a short
System.out.println ("smallValue = " + smallValue); //smallValue = 45
smallValue = (short) 234251434; //smallValue is storing 234251434 as a short
System.out.println ("smallValue = " + smallValue); //print smallValue = 25770; it can only store 16 bits

//int over = 1111111111111; //error because int can only store 32 bits

float pay = 42234.45f; //pay variable stores decimal numbers as a float
long bigValue = 45243224L; //bigValue stores a whole number as a long, it can store 64 bits
double amount = 345.45d; //amount stores a decimal has a double
```