```java
import components.naturalnumber.NaturalNumber;
import components.naturalnumber.NaturalNumber2;

/**
 * Extension of {@code NaturalNumber2} with secondary operations implemented as
 * instance methods: add, subtract, and power.
 *
 * @author Put your name here
 *
 */
public final class NaturalNumberInstanceOps extends NaturalNumber2 {

    /**
     * No-argument constructor.
     */
    public NaturalNumberInstanceOps() {
    }

    /**
     * Constructor from {@code int}.
     *
     * @param i
     *            {@code int} to initialize from
     */
    public NaturalNumberInstanceOps(int i) {
        super(i);
    }

    /**
     * Constructor from {@code String}.
     *
     * @param s
     *            {@code String} to initialize from
     */
    public NaturalNumberInstanceOps(String s) {
        super(s);
    }

    /**
     * Constructor from {@code NaturalNumber}.
     *
     * @param n
     *            {@code NaturalNumber} to initialize from
     */
    public NaturalNumberInstanceOps(NaturalNumber n) {
        super(n);
    }

    @Override
    public void add(NaturalNumber n) {
        assert n != null : "Violation of: n is not null";
        /**
         * @decreases n
         */
        int thisLowDigit = this.divideBy10();
        int nLowDigit = n.divideBy10();
        if (!n.isZero()) {
```

```
58              this.add(n);
59          }
60          thisLowDigit += nLowDigit;
61          if (thisLowDigit >= RADIX) {
62              thisLowDigit -= RADIX;
63              this.increment();
64          }
65          this.multiplyBy10(thisLowDigit);
66          n.multiplyBy10(nLowDigit);
67      }
68
69      @Override
70      public void subtract(NaturalNumber n) {
71          assert n != null : "Violation of: n is not null";
72          assert this.compareTo(n) >= 0 : "Violation of: this >= n";
73          /**
74           * @decreases n
75           */
76          int thisLowDigit = this.divideBy10();
77          int nLowDigit = n.divideBy10();
78          if (!n.isZero()) {
79              this.subtract(n);
80          }
81          thisLowDigit -= nLowDigit;
82          if (thisLowDigit < 0) {
83              thisLowDigit += RADIX;
84              this.decrement();
85          }
86          this.multiplyBy10(thisLowDigit);
87          n.multiplyBy10(nLowDigit);
88      }
89
90      @Override
91      public void power(int p) {
92          assert p >= 0 : "Violation of: p >= 0";
93
94          NaturalNumber x = new NaturalNumber2(this);
95          NaturalNumber y = new NaturalNumber2(this);
96
97          if (p % 2 == 0) {
98              x.power(p / 2);
99              x.power(2);
100         } else if (p % 2 == 1) {
101             x.power(p / 2);
102             x.power(2);
103             x.multiply(y);
104         }
105         this.copyFrom(x);
106     }
107 }
108
```