

SOLUTION NOTES

Programming in Java 2003 Paper 1 Question 10 (ACN)

This is a standard programming joke that is 50+ years old I suspect. Hofstadter names it after Quine. Here is what you might do in C to show that it is really rather easy...

```
char*f="char*f=%c%s%c;main()  
{printf(f,34,f,34,10);}%c";  
main(){printf(f,34,f,34,10);}
```

Getting line-breaks in there nicely is messier, and Java is MUCH more clumsy than C. So here is a plausibly typical Java version that I found on the web...

```
public class Myself {  
    static String[] me = {  
        "public class Myself {",  
        "    static String[] me = {",  
        "    };",  
        "    static char quote =",  
        "    public static void main(String argv[]) {",  
        "        for (int i = 0; i < 2; i++)",  
        "            System.out.println(me[i]);",  
        "        for (int i = 0; ; ) {",  
        "            for (int j = 0; j < 4; j++)",  
        "                System.out.print(' ');",  
        "                System.out.print(quote + me[i] + quote);",  
        "                if (++i == me.length) {",  
        "                    System.out.println();",  
        "                    break;",  
        "                }",  
        "                System.out.println(',');",  
        "            }",  
        "            for (int i = 2; i <= 3; i++)",  
        "                System.out.println(me[i]);",  
        "            for (int i = 0; i < 4; i++)",  
        "                System.out.print(' ');",  
        "                System.out.print('');",  
        "                System.out.print(quote);",  
        "                System.out.print('');",  
    }  
}
```

```

        "    System.out.println(';');",
        "    for (int i = 4; i < me.length; i++)",
        "        System.out.println(me[i]);",
        "    }",
        "}"
    };
    static char quote =
        '"';
    public static void main(String argv[]) {
        for (int i = 0; i < 2; i++)
            System.out.println(me[i]);
        for (int i = 0; ; ) {
            for (int j = 0; j < 4; j++)
                System.out.print(' ');
            System.out.print(quote + me[i] + quote);
            if (++i == me.length) {
                System.out.println();
                break;
            }
            System.out.println(',');
        }
        for (int i = 2; i <= 3; i++)
            System.out.println(me[i]);
        for (int i = 0; i < 4; i++)
            System.out.print(' ');
        System.out.print('');
        System.out.print(quote);
        System.out.print('');
        System.out.println(';');
        for (int i = 4; i < me.length; i++)
            System.out.println(me[i]);
    }
}

```

I fully expect many of the submissions to be clear evidence of students who are unable to write programs at all, and only a very few to be really clearly presented and respectably accurate!