Code Listing Example

Listing 1: Python example. Adding equations in comments. Optimal control example.

```
# Some code that does very little, but has embedded math in comments
# Linear system: get x_{t+1} = Ax_t + Bu_t.
xp = A @ x + B @ u
# Compute quadratic cost c(x,u) = x^T Qx + u^T Ru.
c = x.T @ Q @ x + u.T @ R @ u
```

Listing 2: Julia example. Cross-entropy method from Prof. Kochenderfer's textbook. Note that most Unicode characters will work.

```
# The cross-entropy method from "Algorithms for Optimization"
using Distributions
function cross_entropy_method(f,P,k_max,m=100,m_elite=10)
    for k ∈ 1:k_max
        samples = rand(P,m)
        order = sortperm([f(samples[:,i])for i ∈ 1:m])
        P = fit(typeof(P), samples[:, order[1:m_elite]])
    end
    return P
    @macro
end
```

Listing 3: Matlab example.

```
x = linspace(0, 10);
y = sin(x); % Plot y = sin(x).
plot(x,y);
```