$$
\begin{aligned}
U_{n+1} &= U_n + \frac{h}{6}(k_1 + 2k_2 + 2k_3 + k_4) \\
&= U_n + \frac{h}{6}\left(2U_n + 4U_n(1+h) + 4U_n(1+h+h^2) + 2U_n(1+2h+2h^2+2h^3)\right) \\
&= U_n + U_n\frac{h}{6}\left(2 + 4(1+h) + 4(1+h+h^2) + 2(1+2h+2h^2+2h^3)\right) \\
&= U_n + U_n\frac{h}{6}\left(2+4+4+2 + h(4+4+4) + h^2(4+4) + 4h^3\right) \\
&= U_n + U_n\frac{h}{6}\left(12 + 12h + 8h^2 + 4h^3\right) \\
&= U_n\left(1 + \frac{h}{6}(12 + 12h + 8h^2 + 4h^3)\right) \\
&= U_n\left(1 + 2h + 2h^2 + \frac{4}{3}h^3 + \frac{2}{3}h^4\right)
\end{aligned}
$$

SCHEDULE TEST