**Question 2**

**Part 1**

Using the law of mass action, write down four equations for the rate of changes of the four species, *E*, *S*, *ES*, and *P*.

1.=k3\*[ES]

=k1[E][S]-k2[ES]-k3[ES]

3.=-k1[E][S] + k2[ES]

4.=-k1[E][S] + K2 [ES] +k3[P]

Given that:

The rate constant are:

K1 = 100/ μM /min

K2 = 600/min

K3 = 150/min

The initial concentrations are:

[E]0=1 μM

[S]0 = 10 μM

[ES]0= 0 μM

[P] 0 = 0 μM

**Part 2**

Text

Description automatically generated

Text

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Text

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Graphical user interface, text

Description automatically generated

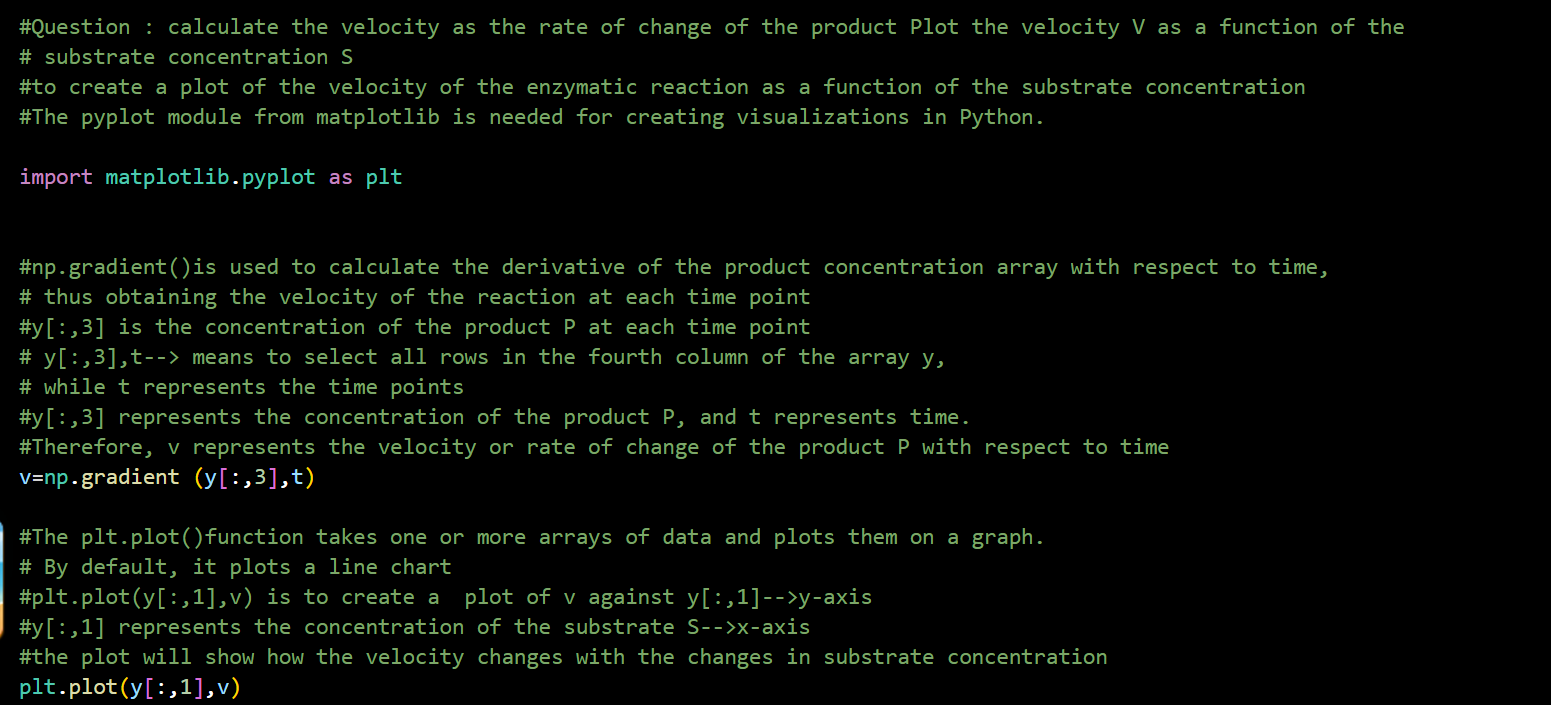
Text

Description automatically generated

Text

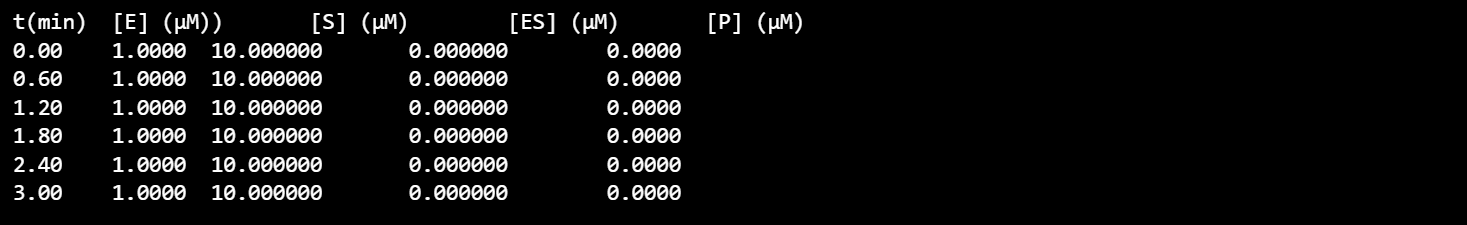
Description automatically generated with medium confidence

**Part 3**



Text

Description automatically generated



Chart

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A screenshot of a computer

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