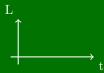
Monta Lokmane

1819-108-C2-W5-GreenBoard-Final

February 2019

## Week 2

- 1. To Do
  - R course on DataCamp
  - HW 1 code on GITHUB
- 2. Deadlines
  - 2019-02-06 23:55
  - conpute CLASS JOBS
- 3. 2019-02-13 14:30
  - Upload HW1 (made using R)



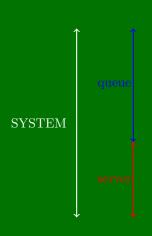
$$\Box = [job * time]$$

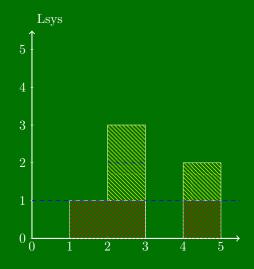
3) 
$$\frac{6}{5} = \frac{L_{SYS}}{time} = \frac{job * time}{time} = job$$

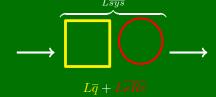
$$2) \ \frac{3}{5} = L\overline{q} \qquad \qquad [\frac{\Box}{time} = job]$$

1) 
$$\frac{3}{5} = \frac{\Box}{LSRv}$$
  $\left[\frac{\Box}{time} = job\right]$ 

$$L\overline{sys} = L\overline{q} + L\overline{sRv}$$







```
\documentclass{report}
 usepackage { xcolor }
 definecolor\{bookColor\}\{cmyk\}\{0\ ,\ 0\ ,\ 0\ ,\ 0\}\ \%\ 0.90\
 color { bookColor }
 usepackage[paperheight=150mm, paperwidth=350mm, margin=20mm, heightrounded]{geometry}
 usepackage [colorlinks] { hyperref }
 usepackage { scalerel , amssymb}
\def\mcirc{\mathrm{color}\{red\}\scalebox\{4\}[4]\{\scalerel*{\big|bigcirc}\}\{j\}\}}
 \label{lem:def_msquare} $$ def\msquare{\mathord\color{yellow}{\scalebox{3}[3]{\scalerel*{\Box}{\strut}}}}$$
\node[shape=rectangle,color=white,draw,inner_sep=7pt] (char) {#1}
; } }
usepackage [utf8] {inputenc}
 usepackage {amsmath}
 usepackage{lipsum}
 usepackage {amssymb}
 usepackage { etaremune }
 usepackage { enumitem }
 usepackage { multicol }
 usepackage{tikz}
 usepackage { geometry }
usepackage { graphicx }
```

```
\begin{document}
\verb|\title {$\color{black}{1819}-108-C2-W5-GreenBoard-Final}}|
\author{\color{black}{Monta Lokmane}}
\date{\color{black}{February 2019}}
\ maketitle
\includegraphics [width=\textwidth]
 \usetikzlibrary { patterns }
\mbox{renewcommand} {\arrayrulewidth} {0pt}
 \setminus begin\{multicols\}\{3\}
%\centering
   \item Week 2
   \begin {enumerate}
    \item To Do
    \begin{itemize}
```

```
\item R course on DataCamp
      \item HW 1 code on GITHUB
      \end{itemize}
      \item Deadlines
      \begin{itemize}
           \item 2019-02-06 23:55
              \end{itemize}
      \begin{itemize}
       \item conpute CLASS JOBS
         \end{itemize}
    \item 2019-02-13 14:30
      \begin{itemize}
    \item Upload HW1 (made using R)
       \end{itemize}
\end{enumerate}
\begin{tikzpicture}
\frac{1}{2} \operatorname{draw} [\operatorname{thick}, ->] (-0.2, 0) - -(0, 0) - -(2, 0) \operatorname{node} [\operatorname{anchor=north} \operatorname{west}] \{t\};
\frac{\text{draw}[\text{thick}, ->](0, -0.2) - -(0,0) - -(0,1) \text{node}}{\text{[anchor=south east]}\{L\};}
\end{tikzpicture}
\begin { tabular }
\{|\,p\,\{0.1\,cm\,\}\,|\,|\,p\,\{0.1\,cm\,\}\,|\,p\,\{0.5\,cm\,\}\,|\,p\,\{1\,cm\,\}\,|\,p\,\{4\,cm\,\}\,|\,\}
\ hline
\mbox{\mbox{multicolumn}} \{5\}\{|c|\}\{\$\\mbox{\square}\{\}\} = [job*time] \}
```

```
\backslash \backslash [1 ex]
\hline\hline
$$3) $$ & $$\frac{6}{5}$$ & $$=$$ &
$${\color{blue}L\overline{sys}}$$ &
$$ [\frac{\square{}}{time}=
\frac{frac \{job*time\}\{time\}=job \}}{
\ hline
\$\$2) \$\$ \& \$\frac{3}{5} \$\$ \& \$\$=\$\$ \& \$\{\setminus \{\{\}\}\}\} \$\$ \& \$\{\{\}\}\}
\ hline
$$1) $$ & $$\frac{3}{5}$$ & $$=$$ & $${\color{red}L\overline{sRv}}$$$ & $$[\frac{\square{}}{time}=job]$$\\
\ hline
 \begin{tikzpicture}
\squared \{ \{ \color \{ white \} L \color \{ white \} \} \color \{ white \} L \color \{ white \} \} \
\end{tikzpicture}
\end{tabular}
\columnbreak
%\columnbreak
          \raggedleft
\begin{tikzpicture}
\frac{\det \left[ \operatorname{thick}, - \right]}{0,0} - (5.5,0) \quad \operatorname{node} \left[ \operatorname{anchor} - \operatorname{north} \operatorname{west} \right] \left\{ \right\};
```

```
\frac{\det \left[ \operatorname{thick}, - \right](0,0) -- (0,5.5) \operatorname{node} \left[ \operatorname{anchor} = \operatorname{south} \operatorname{west} \right] \left\{ \operatorname{Lsys} \right\}}{}
\foreach \x in \{0,1,2,3,4,5\}
                          \operatorname{draw}(x \operatorname{cm}, 1\operatorname{pt}) -- (x \operatorname{cm}, 1\operatorname{pt}) \operatorname{node} [\operatorname{anchor=north}] \{\$x\$\};
                  \foreach \v in \{0,1,2,3,4,5\}
                                  \frac{1}{t} \cdot \frac{1}
 \frac{\text{draw} [dashed, blue](0,1) - (5.5,1)}{}
 \frac{\text{draw}}{\text{dashed}}, blue \frac{1}{2}(2,2) - \frac{1}{2}(3,2):
\operatorname{draw} (1,0) \longrightarrow (1,1) \longrightarrow (3,1) \longrightarrow (3,0) \longrightarrow (3,0);
  \operatorname{draw}(2,1) - (2,3) - (3,3) - (3,0) - (2,0);
  \operatorname{draw} (4,1) - (4,2) - (5,2) - (5,1) - (5,1);
   \operatorname{draw} (4.0) \longrightarrow (4.1) \longrightarrow (5.1) \longrightarrow (5.0) - (5.0):
    fill [pattern=north east lines, pattern color=red ] (1,0) -- (1,1) -- (3,1) -- (3,0)-- (3,0);
     fill [pattern=north west lines, pattern color=yellow ] (2,1) — (2,3) — (3,3) — (3,1)— (3.1):
    fill [pattern=north west lines, pattern color=yellow] (4,1) — (4,2) — (5,2) — (5,1)— (5,1);
    fill [pattern=north east lines, pattern color=red] (4,0) — (4,1) — (5,1) — (5,0)— (5,0):
       \frac{\text{draw}}{\text{dashed}}, \text{blue}(0,1) - (5.5,1);
   \frac{\text{draw}}{\text{draw}} = \frac{1}{3} + \frac{
   \langle draw[thick, color=blue, <->] (-2,2) -- (-2,5);
   \frac{\text{draw}}{\text{thick}}, \frac{\text{color}=\text{red}}{\text{color}} = \frac{(-2,2)}{(-2,2)} - \frac{(-2,0)}{(-2,2)}
   \frac{\text{draw } [\text{color=blue}](-2.5,3.5) \text{ node } \{\text{queue}\};}{}
   \frac{\text{draw } [\text{color}=\text{red}](-2.5.1) \text{ node } \{\text{server}\}:}{}
  \langle draw[thick, <->] (-3.5,0) -- (-3.5,5);
  \langle draw(-4.5, 2.5) \text{ node } \{SYSTEM\} \}
```

(4.4) - (4.1) - (5.1) - (5.3) - (5.4) - (6.4) - (6.1) - (7.1):

```
definecolor\{green\}\{rgb\}\{0, 0.45, 0\}
\pagecolor { green }
 \end{tikzpicture}
%\begin{equation}
\hfill \break
\begin{tikzpicture}
\text{draw} [->, \text{ ultra thick}] (2,2) -- (3,2);
\end{tikzpicture}
\overbrace \msquare\mcirc \^{L\overline \{ sys \}}
\begin{tikzpicture}
\langle \text{draw} [->, \text{ultra thick}] (2,2) -- (3,2);
\end{tikzpicture}
%\end{equation}
\thispagestyle {empty}
%\end{tabular}
 \end{multicols}
 \thispagestyle {empty}
```

```
\begin{lstlisting}{\pagecolor{white}\color{black}}
\documentclass{report}
 usepackage { xcolor }
 definecolor\{bookColor\}\{cmyk\}\{0, 0, 0, 0\}
color { bookColor }
 usepackage[paperheight=150mm, paperwidth=350mm, margin=20mm, heightrounded]{geometry}
 usepackage [colorlinks] { hyperref }
 usepackage { scalerel , amssymb}
 def\mcirc{\mathbin\color{red}\scalebox{4}[4]{\scalerel*{\bigcirc}{j}}}
 def\msquare\{\mathord\color\{yellow\}\{\scalebox\{3\}[3]\{\scalerel*\{\Box\}\{\strut\}\}\}\}
\newcommand*\squared[1]{\tikz[baseline=(char.base)]{
\node[shape=rectangle,color=white,draw,inner_sep=7pt] (char) {#1}
; } }
usepackage{listings}
 usepackage [utf8] {inputenc}
 usepackage {amsmath}
 usepackage { lipsum }
 usepackage {amssymb}
 usepackage { etaremune }
 usepackage { enumitem }
usepackage { multicol }
```

```
\usepackage{tikz}
  usepackage { geometry }
 \usepackage { graphicx }
 \begin{document}
 \title {\color{black}{1819-108-C2-W5-GreenBoard-Final}}
 \author{\color{black}{Monta Lokmane}} \date{\color{black}{February 2019}}
 \ maketitle
 \includegraphics [width=\textwidth]
\  \  \, \verb|\usetikzlibrary{patterns}| \\ \{\%
 \setminus begin\{multicols\}\{3\}
 %\centering
    \item Week 2
```

```
\begin{enumerate}
      \item To Do
      \begin{itemize}
      \item R course on DataCamp
      \item HW 1 code on GITHUB
      \end{itemize}
      \item Deadlines
      \begin{itemize}
           \item 2019-02-06 23:55
              \end{itemize}
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       \item conpute CLASS JOBS
         \end{itemize}
    \item 2019-02-13 14:30
      \begin{itemize}
    \item Upload HW1 (made using R)
       \end{itemize}
\end{enumerate}
\begin{tikzpicture}
 \frac{\mathrm{draw}[\,\mathrm{thick}\,,->](\,-0.2\,,0)--(0\,,0)--(2\,,0)\,\mathrm{node}}{\mathrm{[\,anchor=north\,\,west]\{\,t\,\};}}
 \frac{1}{2} \operatorname{draw} [\operatorname{thick}, ->] (0, -0.2) - -(0, 0) - -(0, 1) \operatorname{node} [\operatorname{anchor} = \operatorname{south} \operatorname{east}] \{L\};
\end{tikzpicture}
%&
```

```
\begin{tabular}
   \{|p\{0.1cm\}||p\{0.1cm\}||p\{0.5cm\}||p\{1cm\}||p\{4cm\}|\}
    \mbox{multicolumn } \{5\}\{|c|\}\{\$\backslash square\{\}\}\}=[job*time]\$\}
 \backslash [1 ex]
 \hline\hline
$$3) $$ & $$\frac{6}{5}$$ & $$=$$ &
${\color{blue}L\overline{sys}}$$ &
$$ [\ frac {\ square {}} { time}=
\frac{\int frac \{job*time\}\{time\}=job\}}{\$}
 \ hline
\$$2) \$ & \$ \frac{3}{5} & \$ = \$ & \$ \frac{1}{\text{color}} \| \text{yellow} \| \text{color} \| \text{yellow} \| \text{color} \| \text{yellow} \| \text{color} \| \text{yellow} \|
\ hline
$$1) $$ & $$\frac{3}{5}$$ & $$=$$ & $${\color{red}L\overline{sRv}}$$$ & $$[\frac{\square{}}{time}=job]$$\\
 \ hline
   \begin{tikzpicture}
   \end{tikzpicture}
   \end{tabular}
 \columnbreak
%\columnbreak
```

```
\raggedleft
\begin{tikzpicture}
  \frac{\mathrm{draw}[\mathrm{thick}, ->](0,0)}{--}(5.5,0)} node \frac{\mathrm{nchor}=\mathrm{north}}{--} west \frac{1}{2};
  \frac{\mathrm{draw}[\mathrm{thick}, ->](0,0)}{\mathrm{draw}[\mathrm{thick}, ->](0,0)} - (0,5.5) \text{ node}[\mathrm{anchor=south west}] \{\mathrm{Lsys}\};
 \foreach \x in \{0, 1, 2, 3, 4, 5\}
              \operatorname{draw}(x \operatorname{cm}, 1\operatorname{pt}) -- (x \operatorname{cm}, 1\operatorname{pt}) \operatorname{node} [\operatorname{anchor=north}] \{\$x\$\};
          \foreach \y in \{0,1,2,3,4,5\}
                   \operatorname{draw}(1 \operatorname{pt}, y \operatorname{cm}) -- (-1 \operatorname{pt}, y \operatorname{cm}) \operatorname{node} [\operatorname{anchor} = \operatorname{ast}] \{\$y\$\};
 \frac{\text{draw} [dashed, blue](0,1) - (5.5,1)}{}
 \draw[dashed, blue](2,2) - -(3,2);
\operatorname{draw} (1,0) -- (1,1) -- (3,1) -- (3,0) -- (3,0):
 \operatorname{draw}(2.1) - (2.3) - (3.3) - (3.0) - (2.0):
  \operatorname{draw} (4.1) - (4.2) - (5.2) - (5.1) - (5.1):
 \operatorname{draw}(4,0) - (4,1) - (5,1) - (5,0) - (5,0):
  fill [pattern=north east lines, pattern color=red ] (1,0) -- (1,1) -- (3,1) -- (3,0)-- (3,0);
   fill [pattern=north west lines, pattern color=yellow ](2,1) -- (2,3) -- (3,3) -- (3,1)-- (3,1);
   fill [pattern=north west lines, pattern color=yellow] (4,1) -- (4,2) -- (5,2) -- (5,1)-- (5,1);
   (4,0) - (4,1) - (5,1) - (5,0) - (5,0)
     \frac{\text{draw} [dashed, blue](0,1) - (5.5,1)}{}
  \frac{\text{draw}}{\text{draw}} \frac{1}{\text{dashed}} \cdot \text{blue} \frac{1}{2} \cdot (2,2) - -(3,2):
  \operatorname{draw}[\operatorname{thick}, \operatorname{color=blue}, <->] (-2,2) -- (-2,5);
  \frac{1}{2} \frac{1}
 \frac{\text{draw } [\text{color=blue}](-2.5,3.5) \text{ node } \{\text{queue}\};}{}
 \frac{\text{draw } [\text{color}=\text{red}](-2.5,1) \text{ node } \{\text{server}\};}
```

```
\langle draw[thick, <->] (-3.5,0) -- (-3.5,5);
\langle draw(-4.5, 2.5) \text{ node } \{SYSTEM\};
(4,4) - -(4,1) - -(5,1) - -(5,3) - -(5,4) - -(6,4) - -(6,1) - -(7,1);
\definecolor\{green\}\{rgb\}\{0, 0.45, 0\}
\pagecolor { green }
 \end{tikzpicture}
%\begin{equation}
\hfill \break
\begin{tikzpicture}
\langle \text{draw} [->, \text{ ultra thick}] (2,2) -- (3,2);
\end{tikzpicture}
\overbrace \{\msquare \mcirc \}^{\left\} \left\{ L\overline \{ sys \}\}
\begin{tikzpicture}
\langle \text{draw} [->, \text{ultra thick}] (2,2) -- (3,2);
\end{tikzpicture}
%\end{equation}
\thispagestyle {empty}
```

```
%\end{tabular}
     \end{multicols}
      \thispagestyle {empty}
     \newpage
\end{document}
\begin{lstlisting}{\pagecolor{white}\color{black}}
   documentclass { report }
   usepackage { xcolor }
   definecolor{bookColor}{cmyk}{0 , 0 , 0 , 0} \% 0.90\% of black
   color { bookColor }
   usepackage[paperheight=150mm, paperwidth=350mm, margin=20mm, heightrounded]{geometry}
   usepackage [colorlinks] { hyperref }
   usepackage { scalerel , amssymb }
   (def\mcirc{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\mcirc}{\
   def\msquare\{\mathord\color\{\yellow\}\{\scalebox\{3\}[3]\{\scalerel*\{\Box\}\{\strut\}\}\}\}
  \node[shape=rectangle,color=white,draw,inner_sep=7pt] (char) {#1}
;}}
```

```
\usepackage [utf8] {inputenc}
 usepackage {amsmath}
 usepackage { lipsum }
 usepackage {amssymb}
 usepackage { etaremune }
 usepackage {enumitem}
 usepackage { multicol }
 usepackage { tikz }
 usepackage { geometry }
\usepackage{graphicx}
\begin{document}
\verb|\title {$\color{black}{1819}-108-C2-W5-GreenBoard-Final}}|
\author{\color{black}{Monta Lokmane}} \date{\color{black}{February 2019}}
\ maketitle
\includegraphics [width=\textwidth]
```

```
\usetikzlibrary { patterns }
\setminus begin\{multicols\}\{3\}
%\centering
  \item Week 2
  \begin{enumerate}
   \item To Do
    \begin{itemize}
    \item R course on DataCamp
    item HW 1 code on GITHUB
   \end{itemize}
   \item Deadlines
    \begin{itemize}
       \item 2019-02-06 23:55
         \end{itemize}
    \begin{itemize}
    \item conpute CLASS JOBS
      \end{itemize}
  \item 2019-02-13 14:30
   \begin{itemize}
  \item Upload HW1 (made using R)
    \end{itemize}
```

```
\end{enumerate}
\begin{tikzpicture}
  \frac{1}{2} \operatorname{draw} [\operatorname{thick}, ->] (-0.2, 0) - -(0, 0) - -(2, 0) \operatorname{node} [\operatorname{anchor} = \operatorname{north} \operatorname{west}] \{t\};
  \end{tikzpicture}
\begin { tabular }
 \{|p\{0.1cm\}||p\{0.1cm\}||p\{0.5cm\}||p\{1cm\}||p\{4cm\}|\}
 \ hline
  \mbox{ multicolumn } \{5\}\{|c|\}\{\$\square \{\}\}\}=[job*time]\$\}
 \backslash [1ex]
\hline\hline
$$3) $$ & $$\frac{6}{5}$$ & $$=$$ &
$${\color{blue}L\overline{sys}}$$ &
$$ [\frac {\square {}} { time}=
\frac{frac \{job*time\}\{time\}=job \}}{\$}
\ hline
$$2) $$ & $$\frac{3}{5}$$ & $$=$$ & $${\color{yellow}L\overline{q}}$$ & $$[\frac{\square{}}{time}=job]$$\\
\ hline
$$1) $$ & $$\frac{3}{5}$$ & $$=$$ & $${\color{red}L\overline{sRv}}$$$ & $$[\frac{\square{}}{time}=job]$$\
\ hline
\begin{tikzpicture}
\squared {\{ \color \{ white \}L \setminus squared \{ \color \{ \color \{ white \}L \setminus squared \{ \color \{ \color
```

```
\end{tikzpicture}
\end{tabular}
\columnbreak
%\columnbreak
%&
          \raggedleft
\begin { tikzpicture }
\langle draw[thick, ->](0,0) -- (5.5,0) \text{ node}[anchor=north west]\{\};
 \frac{\operatorname{draw}[\operatorname{thick}, ->](0,0) -- (0,5.5) \operatorname{node}[\operatorname{anchor=south west}]{\operatorname{Lsys}};}
\foreach \x in \{0,1,2,3,4,5\}
     \draw(x cm, 1pt) -- (x cm, 1pt) node [anchor=north] {$\x$};
   \foreach \y in \{0,1,2,3,4,5\}
      \langle draw(1pt, y cm) - (-1pt, y cm) node [anchor=east] { y };
\frac{\text{draw} [dashed, blue](0,1) - (5.5,1)}{};
\frac{\text{draw}}{\text{dashed}}, \text{blue}(2,2) - (3,2);
\operatorname{draw} (1,0) -- (1,1) -- (3,1) -- (3,0) -- (3,0);
 \operatorname{draw} (2,1) - (2,3) - (3,3) - (3,0) - (2,0);
 \operatorname{draw} (4,1) - (4,2) - (5,2) - (5,1) - (5,1):
\operatorname{draw} (4,0) - (4,1) - (5,1) - (5,0) - (5,0);
\ fill [pattern=north east lines, pattern color=red ](1,0) -- (1,1) -- (3,1) -- (3,0)-- (3,0);
\fill[pattern=north west lines, pattern color=yellow](2,1) - (2,3) - (3,3) - (3,1)- (3,1);
```

```
fill[pattern=north west lines, pattern color=yellow] (4,1) -- (4,2) -- (5,2) -- (5,1) -- (5,1);
 fill [pattern=north east lines, pattern color=red] (4,0) - (4,1) - (5,1) - (5,0) - (5,0);
 \frac{\text{draw} [dashed, blue](0,1) - -(5.5,1)}{}
\frac{\text{draw}}{\text{dashed}}, blue (2,2) - (3,2);
 \operatorname{draw}[\operatorname{thick}, \operatorname{color=blue}, <->] (-2,2) -- (-2,5);
\frac{\text{draw}[\text{thick}, \text{color}=\text{red}, <->]}{(-2,2)} -- (-2,0);
\draw [color=blue](-2.5,3.5) node {queue};
\frac{1}{2} draw [color=red](-2.5,1) node \{server\};
\langle draw[thick, <->] (-3.5,0) -- (-3.5,5);
\langle draw(-4.5, 2.5) \text{ node } \{SYSTEM\} \}:
(4,4) - -(4,1) - -(5,1) - -(5,3) - -(5,4) - -(6,4) - -(6,1) - -(7,1);
 definecolor\{green\}\{rgb\}\{0, 0.45, 0\}
\pagecolor { green }
  \end{tikzpicture}
%\begin{equation}
\hfill \break
\begin{tikzpicture}
\text{draw} [->, \text{ ultra thick}] (2,2) -- (3,2);
\end{tikzpicture}
\overbrace {\msquare\mcirc}^{L\overline {sys}}
\begin{tikzpicture}
```