CONTEXT

basicexam

Memoir Ever

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December 13, 2024

1 `t-basicexam`

```
1   \startmodule[basicexam]
2   \unprotect
3   \setupmodule[mode=student,layout=default,footer=default]
4   \def\errorparameter#1{\begingroup
5     \startalignment[center]
6     \framed[align={center,lohi},width=max]{
7     \switchtocolor[blue]\tta
8     There is something Wrong happened at \color[red]{\underbar{parameter:#1}}.\\
9     Please check your code.\\
10    }\stopalignment
11    \endgroup}

12  \newif\iflay_twoup  \lay_twoupfalse
13  \newif\ifhdr_default \hdr_defaultfalse

14  \processallactionsinset[\currentmoduleparameter{mode}][
15    teacher=>{\enablemode[teacher]},
16    student=>{\enablemode[student]},
17     check=>{\enablemode[check]},
18   \v!default=>{\enablemode[student]},
19   \v!unknown=>\errorparameter{mode},
20   ]

21  \processallactionsinset[\currentmoduleparameter{layout}][
22     twoup=>\lay_twouptrue,
23      none=>\relax,
24   \v!default=>\relax,
25   \v!unknown=>\errorparameter{layout},
26   ]

27  \processallactionsinset[\currentmoduleparameter{footer}][
28      none=>{\relax},
29   \v!default=>\hdr_defaulttrue,
30   \v!unknown=>\errorparameter{footer},
31   ]
```

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1 尚未處理的組合

設置頁面 2UP Printing

```
\setuppapersize[user pagesize][real pagesize,real orientation]
\setuparranging[page arrange method]
more info : https://wiki.contextgarden.net/Command/setuparranging
        https://wiki.contextgarden.net/Imposition
```

例如:

```
\setuppapersize[A4][A3,landscape]
\setuparranging[2SIDE]%[2UP]
\setuppagenumbering[alternative=singlesided]%{doublesided}]
```

```
32  \iflay_twoup
33   \setuppapersize[A4][A3,landscape]
34   \setuparranging[2SIDE]% 2SIDE start page at odd [2UP] start at even
35   \setuppagenumbering[alternative={doublesided}]%singlesided]
36  \fi
37  \defineconversion [hiragana]    [あ,い,う,え,お,か,き,く,け,こ,さ,し,す,せ,そ,
38                   た,ち,つ,て,と,な,に,ぬ,ね,の,は,ひ,ふ,へ,ほ,
39                   ま,み,む,め,も,や,ゆ,よ,ら,り,る,れ,ろ,わ,ん]
40  \defineconversion [katakana]    [ア,イ,ウ,エ,オ,カ,キ,ク,ケ,コ,サ,シ,ス,セ,ソ,
41                   タ,チ,ツ,テ,ト,ナ,ニ,ヌ,ネ,ノ,ハ,ヒ,フ,ヘ,ホ,
42                   マ,ミ,ム,メ,モ,ヤ,ユ,ヨ,ラ,リ,ル,レ,ロ,ワ,ン]
43  \defineconversion [hiragana-iroha][い,ろ,は,に,ほ,へ,と,ち,り,ぬ,る,を,わ,か,よ,
44                   た,れ,そ,つ,ね,な,ら,む,う,ゐ,の,お,く,や,ま,
45                   け,ふ,こ,え,て,あ,さ,き,ゆ,め,み,し,ゑ,ひ,も,
46                   せ,す,ん]
47  \defineconversion [katakana-iroha][イ,ロ,ハ,ニ,ホ,ヘ,ト,チ,リ,ヌ,ル,ヲ,ワ,カ,ヨ,
48                   タ,レ,ソ,ツ,ネ,ナ,ラ,ム,ウ,ヰ,ノ,オ,ク,ヤ,マ,
49                   ケ,フ,コ,エ,テ,ア,サ,キ,ユ,メ,ミ,シ,ヱ,ヒ,モ,
50                   セ,ス,ン]
```

2 繪製卷頭

下面的命令簡單地展示了如何定義、設定並繪製一個新卷頭。

- 通過 \definepapertitle[PaperTitleName] 命令可以新建卷頭信息,
- 通過 \setuppapertitle[PaperTitleName] 命令可以設定卷頭信息,
- 通過 \makepapertitle[PaperTitleName] 命令可以繪製卷頭結果。

```
\definepapertitle[papertitles]
% 第一個參數是試卷名稱, 下同。
% 第二個參數是父級試卷名稱, 可以設置父級進行繼承。
% 第三個參數可以直接設定相關樣式和內容。下同。
% 通過 list 參數可以設置順序
% 預設順序為 secret,title,subject,information,notice
\setuppapertitle [papertitles][
  list={secret,title,subject,information,notice},subjectsuffix=学科试卷,
  secretstyle=\ss,
  titlestyle=\ssa,
  subjectstyle=\ssb,
  informationstyle=\ttx,
  noticestyle=\rm\it,
  secretalign=flushleft,
  titlealign=center,
  subjectalign=center,
  informationalign=center,
  noticealign=flushleft,
  secret={绝密 ★ 启用前},
  title={2021 年普通高等学校招生全国统一考试},
  subject={日语},
  information={总分:150 分, 考试时间:120 分钟},
  notice={注意事项:
   \startitemize[n,packed,joinedup]
    \item 答题前, 务必将自己的姓名、准考证号填写在%
        答题卡规定的位置上。%
    \item 答选择题时, 必须使用 2B 铅笔将答题卡上对%
        应题目的答案标号涂黑。如需改动, 用橡皮擦%
        擦干净后, 再选涂其它答案标号。答非选择题%
        时, 必须使用 0.5 毫米黑色签字笔, 将答案%
        书写在答题卡规定的位置上。所有题目必须在答%
        题卡上作答, 在试题卷上答题无效。%
    \item 考试结束后, 将试题卷和答题卡一并交回。
    \stopitemize},
  ]
\makepapertitle [papertitles]% 可以接受第二參數直接設置
```

```
51  \setuplabeltext [cn] [section={第,部分},subsection={第,节},]

52  \definehead [tu]  [chapter]
53  \definehead [ego] [section]    % me latin
54  \definehead [isea] [subsection]  % he or she latin
55  \definehead [heu] [subsubsection] % och
56  \setuphead [tu]  [placehead=empty]
57  \setuphead [ego] [sectionsegments=section,style=\ssa]
```

```
58  \setupheads [isea] [style=\hwa]
59  \setupheads [tu,ego,isea]
60          [indentnext=yes,align=flushleft,
61          before={\blank[quarterline]},
62          after={\blank[quarterline]},
63          sectionconversionset=examnum]
64  \definelist[tu]
65  \setuplist [tu][style={\feature[+][tabularnumbers]}]
66  \definestructureconversionset[examnum][chinesenumerals][chinesenumerals]
67  \installnamespace    {papertitle}
68  \installcommandhandler \????papertitle {papertitle} \????papertitle

69  \definemarking[title]
70  \definemarking[subject]

71  \setuppapertitle [list={secret,title,subject,information,signinformation,notice},
72   subjectsuffix=学科试卷]
73  \setuppapertitle [
74    secretstyle=\ss,
75    titlestyle=\ssa,
76    subjectstyle=\ssb,
77    informationstyle=\ttx,
78    noticestyle=\rm\it,
79    secretalign=flushleft,
80    titlealign=center,
81    subjectalign=center,
82    informationalign=center,
83    noticealign=flushleft,
84    secret={绝密 ★ 启用前},
85    title={2024年普通高等学校招生全国统一考试},
86    subject={英语学科},
87    signinformation={{姓名:  }{\blackrule[width=4em,height=.2pt]}
88            {准考证号: }{\blackrule[width=4em,height=.2pt]}},
89    information={全卷共12页，满分150分，考试时间120分钟。},
90    notice={考生注意:
91      \startitemize[n,packed,joinedup]
92      \item 答题前，请务必将自己的姓名、准考证号用黑色字迹的签字笔
93          或钢笔分别填写在试题卷和答题纸规定的位置上。 %
94      \item 答题时，请按照答题纸上"注意事项"的要求，在答题纸相应的
95          位置上规范作答，在本试题卷上的作答一律无效。 %
96      \stopitemize},
97  ]

98  \def\doifemptyelsex#1#2{\doifelse{#1}{}{#2}{#1}}
99  \def\definepapertitlevariable#1{\begingroup% #1=element name
100   \parindent0pt\relax\par%
101   \doifelse{\namedpapertitleparameter{\currentpapertitle}{#1align}}{}%
102       {\setupalign[center]}%
103       {\setupalign[\namedpapertitleparameter{\currentpapertitle}{#1align}]}%
104   \doifemptyelsex{\namedpapertitleparameter{\currentpapertitle}{before#1}}{}%
105   \doifemptyelsex{\namedpapertitleparameter{\currentpapertitle}{#1style}}{}%
```

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```
106        \expandafter\begincsname\namedpapertitleparameter{\currentpapertitle}{#1color}
107         \endcsname
108        \doifemptyelsex{\namedpapertitleparameter{\currentpapertitle}{#1}}%
109            {\writestatus{module exam}{warning: #1 is empty ! please input #1.
110              or maybe you have some value is undefined}}%
111        \doifemptyelsex{\namedpapertitleparameter{\currentpapertitle}{after#1}}{}%
112        \par\endgroup}

113   \tolerant\def\makepapertitle[#1][#2]%
114    {\begingroup\edef\currentpapertitle{#1}%
115     \ifarguments\or\or\setuppapertitle[#1][#2]\fi
116     \edef\currentlist{\namedpapertitleparameter\currentpapertitle\c!list}
117     \edef\currenttitle{\namedpapertitleparameter\currentpapertitle\c!title}
118     \expandafter\expandafter\expandafter\tu\expandafter{\currenttitle}
119     \processcommacommand[\currentlist]\definepapertitlevariable
120     \marking[subject]{\namedpapertitleparameter\currentpapertitle{subject}
121            \namedpapertitleparameter\currentpapertitle{subjectsuffix}}
122     \marking[title]{\namedpapertitleparameter\currentpapertitle\c!title}
123    \endgroup}

124   \definepapertitle[newpaper]
125   \setuppapertitle[newpaper][
126        secretstyle=\ss,
127         titlestyle=\ssa,
128       subjectstyle=\ssb,
129     informationstyle=\ttx,
130        noticestyle=\rm\it,
131       secretalign=flushleft,
132        titlealign=center,
133      subjectalign=center,
134    informationalign=center,
135       noticealign=flushleft,
136          secret={绝密 ★ 启用前},
137         title={\currentdate[year] 年普通高等学校招生全国统一考试},
138       subject={SubJect},
139     information={总分:150 分，考试时间:120 分钟},
140       notice={注意事项:
141          \startitemize[n,packed,joinedup]
142           \item 答题前，务必将自己的姓名、准考证号填写在%
143             答题卡规定的位置上。%
144           \item 答选择题时，必须使用 2B 铅笔将答题卡上对%
145             应题目的答案标号涂黑。如需改动，用橡皮擦%
146             擦干净后，再选涂其它答案标号。答非选择题%
147             时，必须使用 0.5 毫米黑色签字笔，将答案%
148             书写在答题卡规定的位置上。所有题目必须在答%
149             题卡上作答，在试题卷上答题无效。 %
150           \item 考试结束后，将试题卷和答题卡一并交回。
151          \stopitemize},
152    ]

153   \setuplabeltext[cn] [totalpage={共,页}]
154   \setuplabeltext[hans][totalpage={共,页}] % work with memos
```

```
155  \setuplabeltext[hant][totalpage={共,頁}] % work with memos
156  \setuplabeltext[ja] [totalpage={共,ページ}]

157  \ifhdr_default
158   \definedelimitedtext  [paren] [location=text]
159   \setupdelimitedtext   [paren:1] [left={ (\nobreak}, right={\nobreak) }]
160   \setupdelimitedtext   [paren:2] [left={\,[~}, right={~]\,}]
161   \setupdelimitedtext   [paren:3] [left={\,\{~}, right={~\}\,}]
162   \setupmarking[subject][expansion=yes]
163   \setupfooter [state=start]
164   \startsetups hdr:infos
165   \framed[height=max,align=lohi,frame=off]{%
166    \getmarking[subject][page][current]
167    \paren{\labeltexts{page}{\pagenumber},\ %
168        \labeltexts{totalpage}{\lastpagenumber}}%
169    }
170   \stopsetups
171   \setupfootertexts[\setups{hdr:infos}]
172  \fi
```

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3 定义其后环境所需命令

定义关键词

```
173  \startinterface all
174  \setinterfaceconstant {true}      {true}
175  \setinterfaceconstant {false}     {false}
176  \setinterfaceconstant {showanswer} {showanswer}
177  \setinterfaceconstant {showpoint}  {showpoint}
178  \setinterfaceconstant {answer}     {answer}
179  \setinterfaceconstant {answerstyle} {answerstyle}
180  \setinterfaceconstant {answercolor} {answercolor}
181  \setinterfaceconstant {point}      {point}
182  \setinterfaceconstant {pointstyle} {pointstyle}
183  \setinterfaceconstant {pointcolor} {pointcolor}
184  \setinterfaceconstant {label}      {label}
185  \setinterfaceconstant {labelstyle} {labelstyle}
186  \setinterfaceconstant {labelcolor} {labelcolor}
187  \stopinterface
```

安装定义命名空间和环境助手

```
188  \installnamespace     {question}
189  \installcommandhandler \????question {question} \????question
190  \installnamespace     {problem}
191  \installcommandhandler \????problem {problem} \????problem
192  \installnamespace     {choice}
193  \installcommandhandler \????choice  {choice} \????choice
194  \installnamespace     {writing}
195  \installcommandhandler \????writing {writing} \????writing
196  \installnamespace     {subwriting}
197  \installcommandhandler \????subwriting{subwriting}\????subwriting
198  \installnamespace     {answer}
199  \installcommandhandler \????answer  {answer} \????answer
200  \installnamespace     {close}
201  \installcommandhandler \????close   {close}  \????close
202  \installnamespace     {pitem}
203  \installcommandhandler \????pitem   {pitem}  \????pitem
204  \installnamespace     {citem}
205  \installcommandhandler \????citem   {citem}  \????citem
206  \installnamespace     {ocitem}
207  \installcommandhandler \????ocitem  {ocitem} \????ocitem
208  \installnamespace     {fillin}
209  \installcommandhandler \????fillin  {fillin} \????fillin
210  \installnamespace     {material}
211  \installcommandhandler \????material {material} \????material
212  \installcounterassociation {material}
213  \appendtoks
214   \registermaterialcounter\currentmaterial
215   \definecounter[\currentmaterial]%
216  \to \everydefinematerial
217  \appendtoks
```

```
218    \synchronizematerialcounters
219  \to \everysetupmaterial
220  \definematerial [material]
221  \definematerial [number]
222  \definematerial [indicator]
223  \definematerial [indicator_helper]
224  \newif\ifmode_quickcheck \mode_quickcheckfalse
225  \newif\ifmode_check    \mode_checkfalse
226  \newif\ifmode_showanswer \mode_showanswerfalse
227  \newif\ifmode_showpoint \mode_showpointfalse
228  \newif\ifmode_showscript \mode_showscriptfalse
229  \newif\ifmode_example   \mode_examplefalse
230  \newif\ifenv_question   \env_questionfalse
231  \newif\ifenv_problem    \env_problemfalse
232  \newif\ifenv_choice    \env_choicefalse
233  \newif\ifenv_material   \env_materialfalse
234  \newif\ifenv_close     \env_closefalse
235  \newif\ifenv_writing    \env_writingfalse
236  \newif\ifenv_subwriting \env_subwritingfalse
237  \newif\ifenv_answer    \env_answerfalse
238  \newif\ifenv_toplevel   \env_topleveltrue
239  \newif\ifenv_botlevel   \env_botlevelfalse
240  \newif\ifitem_pitem    \item_pitemfalse
241  \newif\ifitem_fillin   \item_fillinfalse
242  \newif\ifchoice_check   \choice_checkfalse
243  \newif\ifcontinue_counter \continue_counterfalse
244  \newif\ifclose_counter_reset\close_counter_resetfalse

245  \newdimen\width_cit
246  \newdimen\width_cit_max
247  \newdimen\choice_max_compared_width%
248  \newdimen\width_max_with_label
249  \newdimen\label_width
250  \newcount\totalchoicenumber%
251  \newcount\currentchoicenumber%
252  \newcount\totalpitemnumber%
253  \newcount\currentpitemnumber%
254  \newcount\cnt_step_point% for point calculate
255  \newcount\cnt_step_point_temp%
256  \newcount\current_total_choice_number% 當前選項 ABCD 總計數
257  \newcount\current_available_columns%可排版的最多列數
258  \newcount\cnt_closetest
259  \newcount\cnt_closetest_tempa
260  \newcount\tempa\newcount\tempb
261  \newcount\cnt_example_question

262  \definecounter[Unicode][way=bychapter]
263  \definecounter[Unicode_toplevel]   % for level 1 : question or problem
264  \definecounter[Unicode_midlevel]   % for level 2 : problem or level 1
265  \definecounter[Unicode_botlevel]   % for level 3 : only for level 2
266  \definecounter[strc_close_counter]  % 为 close 环境可以继续 question 序号而设置
```

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```
267    \def\save_question_order{\setcounter[strc_close_counter][\currentitemnumber]
268     \savecounter[strc_close_counter]}
269    \def\restore_question_order{\restorecounter[strc_close_counter]\scratchcounter
270     \rawcountervalue[strc_close_counter]}
271    \def\EQuestionID{E-\somenamedheadnumber{chapter}{current}-\number
272     \cnt_example_question}
273    \def\QuestionID{\ifmode_example\EQuestionID\else\somenamedheadnumber{chapter}{
274     current}-\rawcountervalue[Unicode]\fi}
275    \def\HelperID{\namedheadnumber{chapter}-\rawcountervalue[Unicode_toplevel]}
276    \def\increaseEQuestionID{\advance\cnt_example_question by 1\relax}
277    \def\decreaseEQuestionID{\advance\cnt_example_question by -1\relax}
278    \def\increaseQuestionID{\ifmode_example\increaseEQuestionID\else\incrementcounter
279     [Unicode]\fi}
280    \def\decreaseQuestionID{\ifmode_example\decreaseEQuestionID\else\decrementcounter
281     [Unicode]\fi}

282    \definedataset[Answer_collector]
283    \definedataset[Answer_collectorhelper]
284    \definedataset[Choice_collector]
285    \definedataset[Subwriting_collector]

286    \definetextbackground[env_answer]
287    \defineitemgroup   [env_question] %
288    \setupitemgroup    [env_question] [each] [n,packed,joinedup,nowhite,continue]
289    \defineitemgroup   [env_choice]  %
290    \setupitemgroup    [env_choice] [each] [A,packed,joinedup,nowhite]
291    \definebar         [fillin_text]
292    \defineoverlay     [normalframeOL]
293            [\useMPgraphic{normalframeMP}]
294    \startuseMPgraphic{normalframeMP}
295     draw unitsquare xyscaled (\overlaywidth, \overlayheight);
296    \stopuseMPgraphic
297    \startuseMPgraphic{rules:under:wave}
298      vardef lsin primary x =
299        lua("mp.print(math.sin(" & decimal x & "))")
300      enddef ;
301      draw function(1, "x", "lsin(1.2*x)", 0, RuleWidth, .1pt)
302        shifted (0,RuleFactor*RuleOffset+RuleDepth)
303        withpen pencircle scaled RuleThickness
304        withcolor RuleColor ;
305      setbounds currentpicture to unitsquare xysized(RuleWidth,RuleHeight) ;
306    \stopuseMPgraphic
```

4　设定一些可能用得到的符号

需要注意,这些符号需要预先安装字体 NotoSansSymbols2。

\symbol{marksquare}	□	\symbol{markcircle}	○
\symbol{markcheck}	✓	\symbol{markcross}	✗
\symbol{markheavycheck}	✓	\symbol{markheavycross}	✗
\symbol{marksquarecheck}	☑	\symbol{marksquarecross}	☒
\symbol{marksquareheavycheck}	☑	\symbol{marksquareheavycross}	☒
\symbol{markcirclecheck}	⊘	\symbol{markcirclecross}	⊘
\symbol{markcircleheavycheck}	⊘	\symbol{markcircleheavycross}	⊗
\symbol{marknotcheck}	✓		

```
307  \doifelsefontpresent{NotoSansSymbols2-Regular}{}{
308   \writestatus{Warning}{Symbol Font is not Found,Please install NotoSansSymbols2
309    font.}
310  }
311  \definefontsynonym[NotoSansSymbols2][file:NotoSansSymbols2-Regular]
312  \def\notosymb#1{\getglyphstyled{NotoSansSymbols2}{\tochar{n:#1}}}

313  \definesymbol[marksquare]      [\notosymb{}]
314  \definesymbol[markcircle]      [\notosymb{○}]
315  \definesymbol[marknotcheck]    [\notosymb{}]
316  \definesymbol[markcheck]       [\notosymb{}]
317  \definesymbol[markheavycheck]   [\notosymb{}]
318  \definesymbol[marksquarecheck]  [\notosymb{\hbox to 1em{\kern-.7em\relax\raise.2
319   em\hbox{}}}]
320  \definesymbol[marksquareheavycheck][\notosymb{\hbox to 1em{\kern-.7em\relax\raise
321   .2em\hbox{}}}]
322  \definesymbol[markcirclecheck]   [\notosymb{\hbox to 1em{○\kern-.7em\relax\raise.
323   2em\hbox{}}}]
324  \definesymbol[markcircleheavycheck][\notosymb{\hbox to 1em{○\kern-.7em\relax
325   \raise.2em\hbox{}}}]
326  \definesymbol[markcross]       [\notosymb{}]
327  \definesymbol[markheavycross]   [\notosymb{}]
328  \definesymbol[marksquarecross]  [\notosymb{\hbox to 1em{\kern-.75em\relax\raise.1
329   em\hbox{}}}]
330  \definesymbol[marksquareheavycross][\notosymb{\hbox to 1em{\kern-.75em\relax
331   \raise.1em\hbox{}}}]
332  \definesymbol[markcirclecross]   [\notosymb{\hbox to 1em{○\kern-.75em\relax\raise
333   .2em\hbox{}}}]
334  \definesymbol[markcircleheavycross][\notosymb{\hbox to 1em{○\kern-.75em\relax
335   \raise.2em\hbox{}}}]
336  \def\choice_availablecolumns{ \unskip\datasetvariable{Choice_collector}{
337   \QuestionID}{availablecolumns}}
338  \def\choice_itemmaxwidth{  \unskip\datasetvariable{Choice_collector}{\QuestionID}
339   {itemmaxwidth}}
340  \def\choice_totalchoicenumber{\unskip\datasetvariable{Choice_collector}{
341   \QuestionID}{totalchoicenumber}}
342  \def\choice_answer{      \unskip\datasetvariable{Choice_collector}{\QuestionID}{
343   answer}}
```

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```
344  \def\choice_answerstatus{   \unskip\datasetvariable{Choice_collector}{\QuestionID}
345  {answerstatus}}
346  \def\item_totalnumber{    \unskip\datasetvariable{Answer_collectorhelper}{
347  \HelperID}{totalpitemnumber}}
348  \def\item_totalpoint{     \unskip\datasetvariable{Answer_collectorhelper}{
349  \HelperID}{totalpoint}}
350  \def\answer_id{        \unskip\datasetvariable{Answer_collector}{\QuestionID}{id}}
351  \def\answer_envid{      \unskip\datasetvariable{Answer_collector}{\QuestionID}{
352  envid}}
353  \def\answer_order{       \unskip\datasetvariable{Answer_collector}{\QuestionID}{
354  order}}
355  \def\answer_userorder{    \unskip\datasetvariable{Answer_collector}{\QuestionID}{
356  userorder}}
357  \def\answer_answer{       \unskip\ifmode_example You're in EXAMPLE MODE!\else%
358            \unskip\datasetvariable{Answer_collector}{\QuestionID}{answer}\fi}
359  \def\answer_point{      \unskip\datasetvariable{Answer_collector}{\QuestionID}{
360  point}}
361  \def\answer_totalnumber{   \unskip\datasetvariable{Answer_collector}{\QuestionID}
362  {totalnumber}}
363  \def\point_point{       \unskip\datasetvariable{Answer_collector}{\QuestionID}{
364  point}}
365  \def\point_totalpoint{    \unskip\datasetvariable{Answer_collector}{\QuestionID}{
366  totalpoint}}
367  \def\show_check_info{
368   \ifmode_quickcheck
369    \par\framed[width=\textwidth,align=flushleft]%
370    {\answer_id\ ** \answer_answer\ ** \mode_status}\par
371   \else%
372      \ifmode_check\show_check_infos\else\fi%
373    \fi}

374  \def\show_check_infos{\begingroup\par\leftskip 0pt\relax\noindent%
375   \ifdefined\currentorder%
376   \let\old_currentorder\currentorder
377   \let\old_currentorder\currentuserorder
378   \else%
379   \def\currentorder{  {\ttx currentorder didn't define}}
380   \def\currentuserorder{{\ttx currentorder didn't define}}
381   \fi%
382   \setupinterlinespace[line=2ex]%
383   \framed[align=flushleft]{\language[en]%
384    \hfil \ttx {\bf NOTICE: MODE CHECK IS ON}    \hfil\par\ifmode_example
385    \hfil   {\bf NOTICE: MODE EXAMPLE IS ON}     \hfil\par\fi
386    \hfil \ttx Notice,{\bf Cinfos} only show choice env information \hfil\par
387    \hfil   {\bf CU} means 'current' , if CUuserorder ≠ CUorder, \hfil\par
388    \hfil   It maybe because START parameter is enabled.    \hfil\par
389    \ifmode_example
390    \hfil   Notice,{\bf MODE EXAMPLE} wont provide data infos  \hfil\par\fi
391   \setuptabulate[bodyfont={tt,9pt}]
392   \starttabulate[|rp(.2\textwidth)|lp(.25\textwidth)|rp(.2\textwidth)|lp(.25
393   \textwidth)|lwlB|]
```

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```
394      \NC {\bf Name}  \NC {\bf Content}      \NC {\bf Cinfos} \NC {\bf Content}
395       \NC\NR\HL
396      \NC CUitemgroup \NC \currentitemgroup   \NC CUQuestionID \NC \QuestionID
397       \NC\NR
398      \NC CUparen    \NC \currentparentitemgroup \NC CUCmaxwidth \NC
399       \choice_itemmaxwidth   \NC\NR
400      \NC CUorder    \NC \currentorder     \NC totalCnumber \NC \choice_totalchoicenumber
401       \NC\NR
402      \NC CUuserorder \NC \currentuserorder   \NC Cavailable \NC \choice_availablecolumns
403       \NC\NR
404      \NC answer     \NC \answer_answer     \NC Canswer   \NC \choice_answer      \NC
405       \NR
406      \NC CUpoint    \NC \point_point      \NC       \NC             \NC\NR\HL
407      \NC mode.status \NC \mode_status      \NC CUHelperID \NC \HelperID        \NC
408       \NR
409      \NC level.check \NC \level_status     \NC totalnumber \NC \item_totalnumber
410       \NC\NR
411      \NC Canswerstatus \NC \choice_answerstatus  \NC totalpoint \NC
412       \item_totalpoint     \NC\NR
413    \stoptabulate}
414    \par\endgroup}

415    \def\dimtonum #1{\number\numexpr \dimexpr #1\relax*635/65536\relax }
416    \newcount\cnt_floor
417    \def\floor#1{\floorhelper#1.\relax}
418    \def\floorhelper#1.#2\relax{\ifx\relax#2\relax#1%
419      \else\if.#2#1\else\floorhelphelper{#1}#2\fi\fi}
420    \def\floorhelphelper#1#2.{\ifnum#2>0%
421      \floorhelphelphelper#1\relax\relax\relax\else#1\fi}
422    \def\floorhelphelphelper#1#2\relax{%
423    \if-#1\relax-\cnt_floor=0#2\relax%
424    \advance\cnt_floor by 1\relax%
425    \number\cnt_floor\relax%
426    \else\cnt_floor=0#1#2\relax%
427    \number\cnt_floor\relax\fi%
428    }

429    \def\initcollectanswer{\directlua{MultiAnswerCollector = {}}}
430    \def\collectanswer#1{%if want show collect,show #1
431      \directlua{table.insert(MultiAnswerCollector, [[#1]])}}
432    \def\collectedanswer{\directlua{
433      tex.sprint(table.concat(MultiAnswerCollector, " "))
434    }}

435    \newcount\c_envcounter_toggle
436    \def\example_toggle[#1]% 专用于测试是否开启了 example mode
437      {\doif{\csname #1parameter\endcsname}{example}}{true}%
438        {\mode_exampletrue\global\c_envcounter_toggle=999\relax}}

439    \def\set_envitem_counter{%
440    \initcollectanswer% 初始化多项答案收集器
441    \global\c_envcounter_toggle=1\relax% 默認就是question環境
```

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```
442    \ifenv_question  \global\c_envcounter_toggle=1\relax\fi
443    \ifenv_problem   \global\c_envcounter_toggle=2\relax\fi
444    \ifenv_choice    \global\c_envcounter_toggle=3\relax\fi
445    \ifenv_material  \global\c_envcounter_toggle=4\relax\fi
446    \ifenv_close     \global\c_envcounter_toggle=5\relax\fi
447    \ifenv_writing   \global\c_envcounter_toggle=6\relax\fi
448    \ifenv_subwriting \global\c_envcounter_toggle=7\relax\fi
449    \ifenv_answer    \global\advance\c_envcounter_toggle by 10\relax\fi}

450    \def\level_status{\ifenv_toplevel <env_toplevel>\else%
451            \ifenv_botlevel <env_botlevel>\else
452                    <env_midlevel>\fi\fi}

453    \def\mode_status{ \ifmode_check   <M:C>\fi%check
454            \ifmode_showanswer <M:A>\fi%answer
455            \ifmode_showpoint <M:P>\fi%point
456            \ifmode_example  <M:E>\fi}

457    \newcount\parentitemnumber% \parentitemnumber 会等于父级列表环境的序号
458    \def\set_currentuserorder[#1]{% set order that user setted
459      \ifcsname #1order\endcsname\else%
460      \expandafter\newcount\csname #1order\endcsname\fi%
461      \ifenv_toplevel\csname #1order\endcsname=\currentitemnumber\relax
462      \else     \csname #1order\endcsname=\parentitemnumber \relax
463      \fi}%专为子级设计来获取父级序号，否则直接获取当前序号

464    \def\current_user_order#1{% get user order which can by changed by START
465      \number\csname #1order\endcsname% 獲得的結果類似於 2(4)
466      \ifnum\rawcountervalue[Unicode_botlevel]=0\relax\else%
467      (\rawcountervalue[Unicode_botlevel])\fi}

468    \tolerant\def\set_count_envlevel[#1]#*[#2]{% #1 對比頂級環境項，#2 定義 #2order
469      \setcounter[Unicode_midlevel][0]%
470      \setcounter[Unicode_botlevel][0]%
471      \doifincsnameelse{#1}{\currentitemgroup}%
472            {\env_topleveltrue{}}%如果 #1 等于当前环境设为顶级
473            {\env_toplevelfalse{}}%
474      \ifenv_toplevel\incrementcounter[Unicode_toplevel]%
475            \else\incrementcounter[Unicode_midlevel]\fi%
476    \parentitemnumber=\currentitemnumber\relax
477    \set_currentuserorder[#2]% 创建 #2order 以备使用
478      \edef\currentid{\QuestionID}%
479      \edef\currentorder{% get unique order ( no chapter number )
480      \somenamedheadnumber{chapter}{current}-%
481      \rawcountervalue[Unicode_toplevel]-%
482      \rawcountervalue[Unicode_midlevel]-%
483      \rawcountervalue[Unicode_botlevel]}%
484      \edef\currentuserorder{\current_user_order{#2}}%获取上面定义的 #2order
485    \show_check_info%
486    }

487    \tolerant\def\set_count_itemlevel[#1]#*[#2]{%
488    \env_toplevelfalse%
```

```
489    \doifcsnameelse{#1}{\currentitemgroup}%
490           {\env_botleveltrue{}}%
491           {\env_botlevelfalse{}}%
492    \ifenv_botlevel\incrementcounter[Unicode_botlevel]%
493        \else\incrementcounter[Unicode_midlevel]\fi%
494    \set_currentuserorder[#2]%
495    \ifenv_subwriting\env_botleveltrue\else\fi%
496    \edef\currentid{\QuestionID}%
497    \edef\currentorder{% get unique order ( no chapter number )
498     \somenamedheadnumber{chapter}{current}-%
499     \rawcountervalue[Unicode_toplevel]-%
500     \rawcountervalue[Unicode_midlevel]-%
501     \rawcountervalue[Unicode_botlevel]}%
502    \edef\currentuserorder{\current_user_order{#2}}%
503    \show_check_info%
504    }

505    \def\installdatacollector{%
506      \setdataset [Answer_collector][\QuestionID]%收集答案並在未來展開
507           [id={\QuestionID},%
508            envid={\currentitemgroup},%
509            order={\number\currentorder},%
510            userorder={\currentuserorder},%
511            answer={\pass_parameter_answer},%
512            point={\currentpoint},
513            totalpoint={\item_totalpoint},]}

514    \def\installdatacollectorhelper{%
515     \setdataset [Answer_collectorhelper][\HelperID]%收集信息並在未來展開
516           [totalpitemnumber={\the\totalpitemnumber},
517            totalpoint={\currenttotalpoint},]%
518    }

519    \def\pass_parameter_answer{%
520     \ifenv_choice%
521      \get_choice_answer%
522     \else%
523      \ifenv_writing%
524       \get_writing_answer%
525      \else%
526        \currentanswer%
527      \fi%
528     \fi}

529    \def\check_env_answer[#1][#2][#3]{%
530     \doifsomethingelse{\datasetvariable{#2}{#3}{answer}}%
531     {\datasetvariable{#2}{#3}{answer}}%
532     {\tt no \color[red]{\bf #1 answer} value here,or no need here.}%
533    }

534    \def\check_parameter_answer[#1]{%
535     \doifsomethingelse{\csname #1parameter\endcsname\c!answer}%
```

```
536     {\csname #1parameter\endcsname\c!answer}%
537     {\tt no \color[red]{\bf #1 answer} value here,or no need here.}%
538   }

539   \def\get_choice_answer{%
540     \increaseQuestionID%
541     \check_env_answer[choice][Choice_collector][\QuestionID]%
542     \decrementcounter[Unicode]}
543   \let\getanswerfromchoice\get_choice_answer

544   \def\getanswerforanswer{% used for answer env to auto get answer
545    \ifenv_writing% 因为写作环境的答案一般比较长，在获取答案时，answer 环境会获取显示的很长。
546     \ifx\current_writing_answer\empty%判断环境，并确认 writing 环境是否已经设置 answer 键
547       值
548      \datasetvariable{Answer_collector}{\QuestionID}{answer}%若是，直接获取 writing 环
549        境的
550     \else \current_writing_answer\fi%answer 键值，若否，则按照 QID 获取答案。
551    \else \datasetvariable{Answer_collector}{\QuestionID}{answer}\fi}
552   \def\getpointforanswer{% used for answer env to auto get point
553    \datasetvariable{Answer_collector}{\QuestionID}{point}}

554   \def\check_choice_answerstatus{
555     \ifchoice_check checked!%
556     \else%
557     \color[red]{unchecked!}\\
558     please set the answer manually
559     by add \[*\] parameter to {\tt citem} command.\\
560     \fi}

561   \def\paren#1{(#1)}

562   \def\install_point[#1]{%
563    \ifx\currentmode\c!point%
564     \ifenv_subwriting%
565      \edef\currentpoint{\namedwritingparameter{subwriting}\c!point}%
566     \else%
567      \edef\currentpoint{\csname #1parameter\endcsname\c!point}%
568     \fi%
569    \ifempty\currentpoint% 抓取当前分数值
570      \scratchcounter\zerocount%
571     \else%
572      \scratchcounter\currentpoint%
573     \fi%
574    \ifenv_toplevel% 重置分数計算
575      \cnt_step_point\scratchcounter\relax
576      \cnt_step_point_temp\scratchcounter\relax
577     \fi%
578     \global\cnt_step_point_temp\scratchcounter\relax
579     \ifnum\cnt_step_point=\scratchcounter\relax
580      \global\cnt_step_point=\cnt_step_point_temp\relax
581     \else%
582      \global\cnt_step_point=\numexpr\cnt_step_point+\cnt_step_point_temp\relax
```

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```
583    \fi% 遞歸出總分數
584    \ifenv_toplevel%
585     \gdef\currenttotalpoint{\currentpoint}%
586    \else%
587     \gdef\currenttotalpoint{\the\cnt_step_point}%
588    \fi%
589    \fi}

590  \def\install_answer[#1]{%
591   \ifx\currentmode\c!answer
592    \ifdefined\currentanswer\edef\prevanswer{\currentanswer}\fi%
593    \edef\current_answer{\csname #1parameter\endcsname\c!answer}%暫時定義
594    \ifenv_subwriting%
595     \edef\current_answer{\namedwritingparameter{subwriting}\c!answer}%暫時定義
596    \fi%
597    \ifempty\current_answer%
598     \edef\currentanswer{\prevanswer}%
599    \else%
600     \edef\currentanswer{\csname #1parameter\endcsname\c!answer}%
601    \fi%
602   \fi}

603  \tolerant\def\installpointoranswer[#1]#*[#2]{%#1 parameter %#2 modename
604    \edef\currentmode{#2}% check point or answer
605    \processaction[\csname  #1parameter\endcsname{show#2}][%
606       true=>\csname mode_show#2true\endcsname,
607      false=>\csname mode_show#2false\endcsname,]%
608   \install_point[#1]\install_answer[#1]\begingroup%%
609    \csname ifmode_show#2\endcsname%
610     \csname #1parameter\endcsname{#2style}%
611     \switchtocolor[\csname #1parameter\endcsname{#2color}]%
612     \paren {\csname #1parameter\endcsname{#2prelabel}% like=>answer : blabla
613      \ifx\currentmode\c!point% if #2 = point
614       \ifenv_toplevel\point_totalpoint%
615       \else\currentpoint\fi%
616      \else% if #2 = answer。因为 currentXXXanswer 是有定义内容的,
617       \ifempty\current_answer\answer_answer% 直接獲取當前 QID 答案
618       \else\currentanswer\fi% 如果非空, 取設置好的答案值
619      \fi%
620     \csname #1parameter\endcsname{#2label}}\hairspace%
621    \fi\endgroup}

622  \defineconversion[tnum][\addff{tabularnumbers}]
623  \def\installitemgroupoption[#1][#2]{
624    \setupcounter [itemgroup:env_#1]
625         [ way=\csname #2parameter\endcsname\c!way]
626    \setupitemgroup[env_#1]
627         [ left=\csname #2parameter\endcsname\c!left,
628          right=\csname #2parameter\endcsname\c!right,
629        stopper=\csname #2parameter\endcsname\c!stopper,
630       distance=\csname #2parameter\endcsname\c!distance,
631         before=\csname #2parameter\endcsname\c!before,
```

```
632            after=\csname #2parameter\endcsname\c!after,
633            width=\csname #2parameter\endcsname\c!width,
634            align=\csname #2parameter\endcsname\c!align,
635        indenting=\csname #2parameter\endcsname\c!indenting,
636         symalign=\csname #2parameter\endcsname\c!symalign,
637           symbol=\csname #2parameter\endcsname\c!symbol,
638         itemalign=\csname #2parameter\endcsname\c!itemalign,
639           option=\csname #2parameter\endcsname\c!option,
640            style=\csname #2parameter\endcsname\c!style,
641            color=\csname #2parameter\endcsname\c!color,
642  numberconversion=\csname #2parameter\endcsname\c!numberconversion,
643              ]%
644  }
```

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5 设置 problem 环境

\problem 環境命令可以設置多個聚合問題,該環境具有一個特定的子命令 \pitem 來列明每個問題。可以用來設置填空、問答等題目。

```
\startproblem
\startpitem 該環境位於 \currentitemgroup 。 \stoppitem
\startpitem 該環境位於 \currentitemgroup 。 \stoppitem
\startpitem 該環境位於 \currentitemgroup 。 \stoppitem
\stopproblem
```

1. (0分)該環境位於 env_question:1。
2. (0分)該環境位於 env_question:1。
3. (0分)該環境位於 env_question:1。

```
645  \setupproblem [left={}, %%%%%% follow is itemize option
646         right={},
647         stopper={.~},
648         distance=.5em,
649         %before=,
650         %after=,
651         width=.5em,
652         %align=,
653         indenting=no,
654         %symalign=,
655         %symbol=,
656         %itemalign=,
657         option={packed,joinedup,nowhite},
658         way=bysection,
659         numberconversion=tnum,]
660  \installitemgroupoption[question][problem]
```

problem 只继承了部分 itemgroup 的键值,并没有新的键值设定。在当前(v20241023)中已经删去了设置答案和分值的设置。因为,problem 环境下一般有许多 pitem,每个题目都可能有自己的分值和答案。因此,出於設計目的,每個問題的答案和分數等直接通過 \pitem 來設定。

```
\startproblem
\startpitem[showpoint=true,point=5]     該環境位於 \currentitemgroup 。 \stoppitem
\startpitem[showanswer=true,answer={newer}] 該環境位於 \currentitemgroup 。
\stoppitem
\startpitem[]                該環境位於 \currentitemgroup 。 \stoppitem
\stopproblem
```

4. (5分) 該環境位於 env_question:1。
5. (0分)(newer) 該環境位於 env_question:1。
6. (0分) 該環境位於 env_question:1。

不同於 \question 環境所有的序號都是連續的,\problem 環境每次開始後都是重新進行計數。

如果想要爲 \problem 環境添加題幹,可以將 \problem 環境放置在 \question 環境之中。

```
\startquestion
 該環境位於 \currentitemgroup 。
  \startproblem[left={(},right={)},distance=1em,stopper={}]
  \startpitem 該環境位於 \currentitemgroup 。 \stoppitem
  \startpitem 該環境位於 \currentitemgroup 。 \stoppitem
  \startpitem 該環境位於 \currentitemgroup 。 \stoppitem
  \stopproblem
\stopquestion
```

7. （0分）該環境位於 env_question:1。
   (1)   （0分）該環境位於 env_question:2。
   (2)   （0分）該環境位於 env_question:2。
   (3)   （0分）該環境位於 env_question:2。

如果想要設置填空題,可以使用 \fillin 命令。同時,\getanswerfromfillin命令會獲取臨近 \fillin 的內容,並輸出爲答案。

```
\setupanswer[showanswer=true]
\startquestion
 該環境位於 \currentitemgroup 。
  \setuppitem[showanswer=true]
  \startproblem[left={(},right={)},distance=1em,stopper={}]
  \startpitem 該環境位於 \fillin{env_question:1}。 \stoppitem
  \startanswer
    \input knuthmath
  \stopanswer
  \startpitem 該環境位於 \fillin[mp=rules:under:wave]{env_question:1}。 \stoppitem
  \startanswer
    \input knuthmath
  \stopanswer
  \startpitem
    該環境位於 \fillin[empty=number]{env_question:2}。
  \stoppitem
  \startanswer
    \input knuthmath
  \stopanswer
  \startpitem 該環境位於 \fillin[empty=yes]{env_question:3}。 \stoppitem
  \startanswer
    \input knuthmath
  \stopanswer
  \startpitem 該環境位於 \fillin[empty=yes,left={(},right={)}]{env_question:4}。
 \stoppitem
  \startanswer
    \input knuthmath
  \stopanswer
  \stopproblem
\stopquestion
```

8. (0分) 該環境位於 env_question:1。

   (1)   (0分) **(env_question:1)** 該環境位於 ⦀env_question:1⦀。 env_question:1

> 答案: *(0分)env_question:1*
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

   (2)   (0分) **(env_question:1)** 該環境位於 ⦀env_question:1⦀。 env_question:1

> 答案: *(0分)env_question:1*
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

   (3)   (0分) **(env_question:2)** 該環境位於 ⦀3⦀。 env_question:2

> 答案: *(0分)env_question:2*
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

   (4)   (0分) **(env_question:3)** 該環境位於 ⦀ ⦀。 env_question:3

> 答案: *(0分)env_question:3*
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

   (5)   (0分) **(env_question:4)** 該環境位於 (⦀ ⦀)。 env_question:4

> 答案: *(0分)env_question:4*
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

```
661  \tolerant\protected\def\startproblem[#1]{%
662  \scratchcounterone\currentitemnumber\relax
663  \begingroup\env_problemtrue\set_envitem_counter%
664  \iffirstargument\setupproblem[#1]\fi%
665  \edef\p_start{\problemparameter\c!start}%
666  \edef\p_conversion{\problemparameter\c!numberconversion}%
667  \ifempty\p_start% 避免 continue 和 start 属性冲突
668    \startitemgroup[env_question]%
669          [\p_conversion,continue,#1]%
670          [#1]%
671  \else\startitemgroup[env_question]%
672          [\p_conversion,#1]%
673          [#1]%
674  \fi\currentpitemnumber=0\relax%
675  \setupproblem[showanswer=false,showpoint=false,]%
676  \set_count_envlevel [env_question:1][problem]%
677  \installpointoranswer[problem]   [point]%
678  \installpointoranswer[problem]   [answer]%
```

```
679  \ifenv_toplevel\else%
680    \decreaseQuestionID%
681    \parentitemnumber=\scratchcounterone\relax% 直接获取 question 的 ID
682  \fi}

683  \def\stopproblem{%
684  \ifnum\totalpitemnumber > \currentpitemnumber%
685      \totalpitemnumber = \totalpitemnumber%
686  \else \totalpitemnumber = \numexpr\currentpitemnumber-1\relax%
687  \fi%遞歸出總序號
688  \installdatacollectorhelper%
689  \stopitemgroup%
690  \endgroup}
```

6 设置 question 环境

\question 環境命令可以用來設置題幹。只需將題幹包裹在 \startquestion \stopquestion 命令之間即可。

```
\startquestion
 該環境位於 \currentitemgroup 。
\stopquestion
\startquestion
 該環境位於 \currentitemgroup 。
\stopquestion
```

> 9. （分）該環境位於 env_question:1。
> 10. （分）該環境位於 env_question:1。

\question 環境命令繼承了大部分 \itemgroup 環境的選項設置。因此,可以像修改 \itemgroup 一樣,使用 \setupquestion 來修改該環境。

```
\setupquestion[color=green,style=\ss,start=22]
\startquestion
 該環境位於 \currentitemgroup 。
\stopquestion
```

> 1. （分）該環境位於 env_question:1。

question 环境可以设置**答案**和**分值**。该键值详细的设置如下:

showanswer	answer	answerstyle	answercolor
		answerprelabel	answerlabel
showpoint	point	pointstyle	pointcolor
		pointprelabel	pointlabel

```
\startquestion[showpoint=true,point=5,pointlabel={points},
        showanswer=true,answer={new answer},answerstyle={\tt},]
 該環境位於 \currentitemgroup 。
\stopquestion
```

> 2. (5points) (new answer) 該環境位於 env_question:1。

此外,question 設置了一個特殊的鍵值 example=true,可以是當前題目不被录入答案。在(v20241023)中,通过不太正常的方式設置了 example 后的题目可以自动重置回到序数 1。或许,可以设置一个新的键值,来设定 example 之后的题目是重置为 1 还是接续上一个序号。此外,由于 question 内置了一个 item,因此可以使用 reference 来创建引用。

關於 point 和 answer 的設定: point 的分值默認是一整個題目的總分數。如果當前字環境為 problem,只要為每個 pitem 設計了 point 的分值,該模塊就會自動計算,並通過 \getpointfrompitem 來獲取計算後的 point。answer 的獲取也是一樣。可以通過 \getanswerfromchoice 來獲取當前環境的選項答案。需要注意的是,並沒有設計 \getanswerfrompitem。在設計時, pitem 默認是擁有多個同級項目的。也就是說,會在同一個 question 環境中,有多個子答案。我們無法獲知應該使用哪一個作為當前環境的答案。同樣的道理,每個

question 環境內只有一個 choice 環境,只需要直接為 question 環境配置分值即可。choice 環境並不能配置分數。

```
691  \setupquestion [%showpoint=false,
692          %point=,
693          pointstyle=\ttx,
694          %pointcolor=,
695          %pointprelabel=,
696          pointlabel={分},
697          %showanswer=false,
698          %answer=,
699          %answerlabel=,
700          %answerprelabel=,
701          answerstyle=\ss,
702          answercolor=red,
703          %example=,
704          left={}, %%%%% follow is itemize option
705          right={},
706          stopper={.~},
707          distance=0em,
708          option={packed,joinedup,nowhite},
709          %before=,
710          %after=,
711          width=1.5em,
712          %align=,
713          indenting=no,
714          %symalign=,
715          %symbol=,
716          %itemalign=,
717          way=bychapter,%wont work if continue on
718          numberconversion=tnum,]
719  \installitemgroupoption[question][question]

720  \tolerant\protected\def\startquestion[#1]%
721  {\begingroup\env_questiontrue\set_envitem_counter%%
722  \iffirstargument\setupquestion[#1]\fi%
723  \example_toggle[question]% 用於測試是否開啟 example_mode
724  \edef\p_start{\questionparameter\c!start}%
725  \edef\p_conversion{\questionparameter\c!numberconversion}%
726  \ifempty\p_start% 避免 continue 和 start 屬性冲突
727    \startitemgroup[env_question]%
728          [\p_conversion,continue,#1]%
729          [#1]%
730  \else\startitemgroup[env_question]%
731          [\p_conversion,#1]%
732          [#1]%
733  \fi\item[\questionparameter\c!reference]%
734  \increaseQuestionID% 具有獨立答案, 增長 QID
735  \set_count_envlevel [env_question:1][question]%
736  \installpointoranswer[question]  [point]%
737  \installpointoranswer[question]   [answer]%
```

```
738    \save_question_order}

739  \def\stopquestion{%
740    \ifnum\c_envcounter_toggle=1\relax
741    \installdatacollector%
742    \installdatacollectorhelper\fi%
743    \stopitemgroup\endgroup%
744    \ifnum\c_envcounter_toggle=999\relax%
745    \resetcounter [itemgroup:env_question]%
746    \fi}
```

Memoir Ever

7 设置 choice 环境

該環境命令只能置於 \question 環境之下。該環境有一個子項目： \startcitem \stopcitem。

```
\startcitem {選項內容} \stopcitem
```

可以通過 [*] 來標記正確答案。如果想要設置多選題,只需要對每個正確答案添加 [*] 即可。

```
\setupquestion[showanswer=true]
\startquestion[answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup 。
  \startchoice
    \startcitem[*]{Some Words}\stopcitem
    \startcitem{Some Words}\stopcitem
    \startcitem[*]{Some Words}\stopcitem
    \startcitem{Some Words}\stopcitem
  \stopchoice
\stopquestion
\startquestion[answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup 。
  \startchoice
    \startcitem{Some More Words}\stopcitem
    \startcitem{Some More Words}\stopcitem
    \startcitem[*]{Some More Words}\stopcitem
    \startcitem[*]{Some More Words}\stopcitem
  \stopchoice
\stopquestion
\startquestion[answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup 。
  \startchoice
    \startcitem{Some More More Words}\stopcitem
    \startcitem[*]{Some More More Words}\stopcitem
    \startcitem{Some More More Words}\stopcitem
    \startcitem[*]{Some More More Words}\stopcitem
  \stopchoice
\stopquestion
```

---

3. （分）(A C) 該環境位於 env_question:1。
   A. Some Words   B. Some Words   C. Some Words   D. Some Words
4. （分）(C D) 該環境位於 env_question:1。
   A. Some More Words   B. Some More Words   C. Some More Words   D. Some More Words
5. （分）(B D) 該環境位於 env_question:1。
   A. Some More More Words   B. Some More More Words
   C. Some More More Words   D. Some More More Words

同時為 \startcitem\stopcitem 定義了同義命令 \citem 和 \fragilecitem。 \fragilecitem命令可以不通過界定花括號來排版選項,但可能會引發未知問題,特別是選項中含有空格時。\citem 則需要將選項包裹在花括號中。

```
\citem {選項內容}
\fragilecitem 選項內容
```

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该环境继承了一部分 itemgroup 的键值,就如同前两个命令一样。不同于 question 具有answer 和 point 两种键值,该环境只具有 answer 相关的键值,来特别地设置是否显示答案和配置答案样式。因为 choice 环境的特殊性,point 键值通过 question 环境来显示。和 question 環境的區別是 question 环境的 answer 控制答案是否显示在题干以及设置相关样式。 choice 环境的 answer 控制答案是否显示在选项以及设置相关样式。

另外,choice 環境有一個特別的值: maxiwidth key is for calcaluted max width of choice and waited to be compare, notice this key is maxiwidth ,and difference from maxwidth which for setupitemgroup command

```
747  \setupchoice [answer=\get_choice_answer,
748        answerstyle=\ss\tf,
749        answercolor=red,
750        left={}, %%%%% follow is itemize option
751        right={},
752        stopper={.~},
753        distance=.5em,
754        option={packed,joinedup,nowhite},
755        %before=,
756        %after=,
757        width=1em,
758        maxiwidth=.9\textwidth,
759        start=1,
760        %align=,
761        indenting=no,
762        %symalign=,
763        %symbol=,
764        %itemalign=,
765        way=bysection,
766        numberconversion=A,]
767  \installitemgroupoption[choice][choice]

768  \tolerant\protected\def\startchoice[#1]%
769  {\begingroup\env_choicetrue\set_envitem_counter%%
770  \doifelsesomething{\datasetvariable{Choice_collector}{\QuestionID}{
771   totalchoicenumber}}% arg_1
772   {\scratchcounter\datasetvariable{Choice_collector}{\QuestionID}{
773    totalchoicenumber}}% arg_2
774   {\scratchcounter\zerocount}% arg_3
775  \current_total_choice_number=\number\scratchcounter\relax%
776  \doifelsesomething{\datasetvariable{Choice_collector}{\QuestionID}{
777   availablecolumns}}%
778   {\scratchcounter\datasetvariable{Choice_collector}{\QuestionID}{
779    availablecolumns}}%
780   {\scratchcounter\zerocount}%
781  \current_available_columns=\number\scratchcounter\relax%
782  \startluacode
783  tbl_num_temp = {"one","two","three","four",
784        "five","six","senven","eight","nine"}
785  local  tbl_cit_count   = tex.count['current_total_choice_number']
786  local  available_columns  = tex.count['current_available_columns']
787     available_columns_arg = ""
788  if  (tbl_cit_count == 3) and (available_columns < tbl_cit_count)
```

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```
789    then  available_columns_arg = "one"
790    elseif (tbl_cit_count > 1) and (available_columns >= tbl_cit_count)
791    then  available_columns_arg = "horizontal," .. tbl_num_temp[tbl_cit_count]
792    elseif (tbl_cit_count >= 1) and (available_columns <=     1 )
793    then  available_columns_arg = "one"
794    else  available_columns_arg = "horizontal,two"
795    end
796    \stopluacode
797    \iffirstargument\setupchoice[#1]\fi%
798    \startitemgroup[env_choice]%
799          [\choiceparameter{numberconversion},#1,%
800          \ctxlua{context(available_columns_arg,"")},]%
801          [#1]%
802    \processaction [\choiceparameter{showanswer}][%
803          true=>\mode_showanswertrue,
804          false=>\mode_showanswerfalse,]%
805    \totalchoicenumber  = 0\relax%
806    \currentchoicenumber = 0\relax%
807    }

808    \def\stopchoice{%
809      \width_max_with_label   = \dimexpr\width_cit_max + %
810                \d_strc_itemgroups_list_width\relax%
811      \currentchoicenumber    = \numexpr\currentchoicenumber-1\relax%
812      \ifnum \totalchoicenumber > \currentchoicenumber%
813          \totalchoicenumber = \totalchoicenumber%
814      \else \totalchoicenumber = \currentchoicenumber%
815      \fi%遞歸出總序號
816      \choice_max_compared_width = \choiceparameter{maxiwidth}\relax%
817      \tempa          = \dimtonum{\choice_max_compared_width}\relax%
818      \tempb          = \dimtonum{\the\width_max_with_label}\relax%
819      \startluacode
820      local a = tex.count['tempa']
821      local b = tex.count['tempb']
822        c = math.floor(a/b)
823      \stopluacode
824      \ifdefined\currentuserorder\show_check_info\else%
825          \doifincsnameelse{env_choice:2}{\currentitemgroup}%
826            {}%
827            {\set_count_envlevel[env_choice:1][choice]}\fi%
828      \edef\currentchoiceanswer{\collectedanswer}%
829      \ifempty\currentchoiceanswer%
830      \let\prevanswer\currentanswer%
831      \edef\currentanswer{\prevanswer}%
832      \else%
833      \edef\currentanswer{\collectedanswer}%
834      \fi%
835      \setdataset [Choice_collector][\QuestionID][%收集選項信息,傳遞給下面的總收集處
836          id={\QuestionID},%
837        envid={\currentitemgroup},%
838        order={\number\currentorder},%
```

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```
839          userorder={\currentuserorder},%
840    availablecolumns={\ctxlua{context(c,"")}},
841      itemmaxwidth={\the\width_cit_max},
842   totalchoicenumber={\number\totalchoicenumber},
843          point={\questionparameter\c!point},
844     answerstatus={\check_choice_answerstatus},
845        answer={\currentanswer},]%
846   \edef\currentpoint{\questionparameter\c!point}%
847   \edef\currenttotalpoint{\questionparameter\c!point}%
848   \installdatacollector%
849   \installdatacollectorhelper%
850   \stopitemgroup\endgroup}
```

8 设置 writing 环境

目前该环境只是初步的设计。如果只有同级的多个作文题目,只需要使用 writing 环境即可。但是,当一个作文体下面有多个子题目时,需要将子题目放到 subwriting 环境当中。

该环境目前关于 itemgroup 的设置是直接继承自 question 环境。直接通过 \setupquestion 来进行设置皆可。

如果含有 subwriting 环境,可以使用 \getanswerfromsubwriting 来获取总分数。

```
\setupwriting[showanswer=true,showpoint=true]
\startwriting[point=45]
 作文题目说明
 \startanswer
  参考作文 1
 \stopanswer
\stopwriting

\startwriting
作文题目说明
 \startsubwriting[point=450]
  sub 作文题目说明
  \startanswer
   参考作文 2
  \stopanswer
 \stopsubwriting
 \startsubwriting[point=4588]
  sub 作文题目说明
  \startanswer
  参考作文 3
  \stopanswer
 \stopsubwriting
\stopwriting
```

6. (45分)(参见参考作文。) 作文题目说明

> 答案: *(45分)参考作文 1*
> 参考作文 1

7. (5038分)(参见参考作文。) 作文题目说明
   1. (450分)(参见参考作文。) sub 作文题目说明

> 答案: *(450分)参考作文 2*
> 参考作文 2

   2. (4588分)(参见参考作文。) sub 作文题目说明

> 答案: *(4588分)参考作文 3*
> 参考作文 3

```
851  \setupwriting[answer={参见参考作文。},
852      pointlabel={分},
853      left={}, %%%%%% follow is itemize option
```

```
854        right={},
855        stopper={.~},
856        distance=0em,
857        option={packed,joinedup,nowhite},
858        %before=,
859        %after=,
860        width=1.5em,
861        %align=,
862        indenting=no,
863        %symalign=,
864        %symbol=,
865        %itemalign=,
866        way=bychapter,%wont work if continue on
867        numberconversion=tnum,]
868 \setupsubwriting[answer={参见参考作文。},point=0,pointlabel={分}]
869 \definewriting[subwriting]
870 \installitemgroupoption[question][writing]

871 \tolerant\protected\def\startwriting[#1]{\begingroup%
872  \env_writingtrue\set_envitem_counter%%
873  \setupanswer[showanswer=false]%
874  \iffirstargument\setupwriting[#1]\fi%注意，writing 没有单独的 itemgroup 环境
875  \edef\current_writing_answer{\writingparameter\c!answer}%
876  \edef\p_start{\writingparameter\c!start}%
877  \edef\p_conversion{\writingparameter\c!numberconversion}%
878  \ifempty\p_start% 避免 continue 和 start 属性冲突
879     \startitemgroup[env_question]%
880            [\p_conversion,continue,#1]%
881            [#1]%
882  \else\startitemgroup[env_question]%
883            [\p_conversion,#1]%
884            [#1]%
885  \fi\item[\writingparameter\c!reference]%
886  \increaseQuestionID%
887  \installpointoranswer[writing][point]%
888  \installpointoranswer[writing][answer]%
889  \set_count_envlevel[env_question:1][writing]%
890  \save_question_order}

891 \def\stopwriting{%
892  \ifenv_subwriting\else%
893   \installdatacollector%
894   \installdatacollectorhelper%
895  \fi\stopitemgroup\endgroup}

896 \tolerant\protected\def\startsubwriting[#1]{%
897  \env_subwritingtrue% 必須處在外圍才可以正常判斷環境，收集信息。
898  \begingroup\env_toplevelfalse\set_envitem_counter%%
899  \iffirstargument\setupwriting[subwriting][#1]\fi
900  \edef\p_start{\namedwritingparameter{subwriting}\c!start}%
901  \edef\p_conversion{\namedwritingparameter{subwriting}\c!numberconversion}%
902  \ifempty\p_start% 避免 continue 和 start 属性冲突
```

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```
903        \startitemgroup[env_question]%
904               [\p_conversion,continue,#1]%
905               [#1]%
906     \else\startitemgroup[env_question]%
907               [\p_conversion,#1]%
908               [#1]%
909     \fi\item%
910     \ifnum\currentitemnumber=1\relax
911        \decreaseQuestionID\increaseQuestionID%
912     \else\increaseQuestionID\fi%
913     %当具有多个子写作环境时，才增长 QID ，否则削减至父级 QID（相当于继承）
914     \set_count_itemlevel[env_question:2][subwriting]%
915     \installpointoranswer[subwriting][point]%
916     \installpointoranswer[subwriting][answer]%
917     \def\current_writing_answer{\subwritingparameter\c!answer}%
918     \save_question_order}
919  \def\stopsubwriting{\installdatacollector\installdatacollectorhelper
920     \stopitemgroup\endgroup}
```

37 `t-basicexam`

9 设置 answer 环境

在(v20241023)中,删除了 answer 环境的标签通过 description 来进行设置。整体环境通过 textbackground 环境进行设置。该环境具有 answer 和 point 的全部键值。同时,通过 label labelstyle labelcolor 来设置答案环境的标签。此外,還提供了一個特殊的鍵值 sctipt,該鍵值主要用於創建答題區域。該鍵值和 answer 鍵值是互斥的,不應該同時啟用。

\answer 是爲師生兩版設置的命令。但目前該命令和相關設置還具有諸多不足之處。只需要將該環境置於題目下方,即可獲取當前題目設定

```
\startquestion[showanswer=true,answer={answer for \currentitemgroup }]
  該環境位於 \currentitemgroup 。注意: \tex{answer} 可以獲取父環境或同級環境的答案而不必再
次設置。
  \startanswer[point=12]
  \input knuthmath
  \stopanswer
\stopquestion
\startquestion[showanswer=true,answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup 。注意: \tex{answer} 可以獲取父環境或同級環境的答案而不必再
次設置。
  \startchoice
    \startcitem{Some Words}\stopcitem
    \startcitem{Some Words}\stopcitem
    \startcitem[*]{Some Words}\stopcitem
    \startcitem{Some Words}\stopcitem
  \stopchoice
  \startanswer[point=1]
  \input knuthmath
  \stopanswer
\stopquestion
```

8. （分） (answer for env_question:1) 該環境位於 env_question:1。注意: \answer 可以獲取父環境或同級環境的答案而不必再次設置。

> 答案: (分)
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

9. （分） (C) 該環境位於 env_question:1。注意: \answer 可以獲取父環境或同級環境的答案而不必再次設置。

A. Some Words　　B. Some Words　　C. Some Words　　D. Some Words

> 答案: (分)C
> *Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by "blah" or some other grunting noise.*

```
\startquestion[showanswer=true]
  該環境位於 \currentitemgroup 。
  \startproblem[showanswer=true,left={(},right={)},distance=1em,stopper={}]
```

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```
    \startpitem[showanswer=true,answer={Pitem 1}] 該環境位於 \currentitemgroup 。
  \stoppitem
    \startanswer[point=10]
    \input knuthmath
    \stopanswer
    \startpitem[showanswer=true,answer={Pitem 2}] 該環境位於 \currentitemgroup 。
  \stoppitem
    \startanswer[point=20]
    \input knuthmath
    \stopanswer
    \startpitem[showanswer=true,answer={Pitem 3}] 該環境位於 \currentitemgroup 。
  \stoppitem
    \startanswer[point=30]
    \input knuthmath
    \stopanswer
    \stopproblem
  \stopquestion
```

10. (0分)(Pitem 1) 該環境位於 env_question:1。

    (1)   (0分)(Pitem 1) 該環境位於 env_question:2。

    (2)   (0分)(Pitem 2) 該環境位於 env_question:2。

    (3)   (0分)(Pitem 3) 該環境位於 env_question:2。

```
921  \setuptextbackground[env_answer]
922          [location=paragraph,width=local,
923          leftoffset=1ex,rightoffset=1ex,
924          %topoffset=.5ex,bottomoffset=.5ex,
925          before={\leftskip=0pt\startnarrower},
926          after={\stopnarrower},
927          background=\answerparameter\c!background,
928          backgroundcolor=\answerparameter\c!backgroundcolor,
929          corner=\answerparameter\c!corner,
930          frame=\answerparameter\c!frame,
931          framecolor=\answerparameter\c!framecolor,
932          rulethickness=\answerparameter\c!rulethickness,
933          ]

934  \setupanswer[showanswer=true,
935      showpoint=true,
936      answer=\getanswerforanswer,
937      point=\getpointforanswer,
938      label={答案 : },
939      pointlabel={分},
940      pointstyle=\answerparameter\c!style,
941      pointcolor=\answerparameter\c!color,
942      answerstyle=\answerparameter\c!style,
943      answercolor=\answerparameter\c!color,
944      style=\ss\it,
945      before=\blank[halfline],
```

```
946        after=\blank[halfline],
947        afteranswer={\par},
948        showscript=false,
949        %scriptcontent={},
950        %scriptbefore={},
951        %scriptafter={},
952        background=normalframeOL,
953        %backgroundcolor=,
954        %corner=,
955        frame=on,
956        %framecolor=,
957        %rulethickness=,
958        ]

959  \tolerant\protected\def\startanswer[#1]#:#2\stopanswer{%
960    \begingroup\lettonothing\currentanswer%释放currentanswer
961    \env_answertrue\set_envitem_counter%
962    \xdef\get_writing_answer{#2}% only for writing env
963    \iffirstargument\setupanswer[#1]\fi%
964    \doif{\answerparameter{showscript}}{true}{\mode_showscripttrue}%
965    \doif{\answerparameter\c!showanswer}{true}{\mode_showanswertrue}%
966    \doif{\answerparameter\c!showpoint}{true}{\mode_showpointtrue}%
967    \answerparameter{before}%
968    \ifenv_material
969      \startenv_answer
970      \useanswerstyleandcolor\c!style\c!color%
971      #2
972      \stopenv_answer
973    \else%
974      \ifmode_showscript%
975        \startenv_answer%
976        \answerparameter{scriptbefore}%
977        \answerparameter{scriptcontent}%
978        \answerparameter{scriptafter}%
979        \stopenv_answer%
980      \fi%
981      \ifmode_showanswer%
982        \startenv_answer%
983        \bgroup
984          \answerparameter\c!answerstyle%
985          \switchtocolor[\answerparameter{answercolor}]%
986          \answerparameter\c!label%
987          \ifmode_showpoint%
988            \paren{\answerparameter\c!pointstyle%
989              \switchtocolor[\answerparameter{pointcolor}]%
990              \point_point\answerparameter{pointlabel}}%
991          \fi%
992        \answer_answer%
993        \answerparameter{afteranswer}%
994        \egroup%
995      \useanswerstyleandcolor\c!style\c!color%
```

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```
 996        #2
 997        \stopenv_answer%
 998      \fi%
 999    \fi
1000    \answerparameter{after}%
1001    \endgroup}
```

10 设置 pitem,citem 命令

仅具有 answer point 和 reference 键值。

請注意,不要同時為單個 pitem 或者 fillin 命令同時設置答案,這可能會引起答案無法正確獲取。

```
1002  \setuppitem  [%showpoint=false,
1003          point=0,% 必須有預設值, 否則出現計數器錯誤(missing number)
1004          pointstyle=\ttx,
1005          %pointcolor=,
1006          pointlabel={分},
1007          %showanswer=false,
1008          %answer=,
1009          answerstyle=\ss,
1010          answercolor=red,
1011          %reference=,
1012          ]
1013  \tolerant\protected\def\startpitem[#1]{\begingroup%
1014   \item_pitemtrue\increaseQuestionID%
1015   \iffirstargument\setuppitem[#1]\fi%
1016   \startitem[\pitemparameter{reference}]%
1017    \ifnum\currentpitemnumber=0\currentpitemnumber=1\relax\fi%
1018    \ifenv_question% 設計上的問題, 此時 pitem 處於 botlevel, 否則處於 toplevel。
1019    \set_count_itemlevel [env_question:2] [pitem]\else\ifenv_problem%
1020    \set_count_envlevel [env_question:2] [pitem]\fi\fi%
1021    \installpointoranswer[pitem]      [point]%
1022    \installpointoranswer[pitem]      [answer]%
1023   }

1024  \def\stoppitem{%
1025   \ifitem_fillin%
1026    \edef\currentfillinanswer{\collectedanswer}
1027    \ifempty\currentfillinanswer\relax\else%
1028     \edef\currentanswer{\collectedanswer}\currentanswer\fi\fi%
1029   \installdatacollector%
1030   \installdatacollectorhelper%
1031   \initcollectanswer% 清空收集 fillin 的答案
1032   \stopitem\global\advance\currentpitemnumber by 1\relax
1033   \endgroup}
```

choice 只具有 showanswer 和 [*](用于标记正确答案) 两个设置

```
1034  \def\correct_choice#1#2{%
1035   \ifmode_showanswer%
1036   \doif{#1}{*}{%
1037    {\doifelse{\choiceparameter\c!answerstyle}{}%
1038         {\choiceparameter\c!answerstyle}%
1039         {\questionparameter\c!answerstyle}%
1040     \doifelse{\choiceparameter\c!answercolor}{}%
1041         {\switchtocolor[\choiceparameter\c!answercolor]}%
1042         {\switchtocolor[\questionparameter\c!answercolor]}%
1043     #2}}%%correct choice
```

```
1044    \else #2\fi}
1045  \def\get_citem_text[#1]{\setbox0=\hbox{#1}%
1046    \width_cit = \the\wd0\relax%relax is neccessary
1047    \ifdim \width_cit_max > \width_cit%
1048        \width_cit_max = \width_cit_max%
1049    \else \width_cit_max = \width_cit%
1050    \fi}%%%% 遞歸計算出最大寬度

1051  \tolerant\protected\def\startcitem[#1]#*[#2]#:#3\stopcitem{% #1 correct answer
1052    \ifsecondargument\setupcitem[#2]\fi%          #2 options
1053    \get_citem_text[#3]%                    #3 choice content
1054    \processaction[\choiceparameter{showanswer}][%
1055      true=>\mode_showanswertrue,
1056      false=>\mode_showanswerfalse,]%
1057    \doif{#1}{*}{\choice_checktrue}%
1058    \ifnum\currentchoicenumber < 1\relax
1059        \currentchoicenumber = 1\relax\fi%
1060    \ifconditional\c_strc_itemgroups_horizontal% mode_horizontal
1061     \doif{#1}{*}{\collectanswer{\convertnumber%
1062          {\choiceparameter{numberconversion}}%
1063          {\currentchoicenumber}}}%
1064    \fi%
1065    \startitem[\citemparameter\c!reference]
1066    \ifconditional\c_strc_itemgroups_horizontal% mode_horizontal
1067     \doifelse{#1}{*}{\correct_choice{#1}{#3}}{#3}%
1068    % 如果 * 被設置，將該選項設為正確選項，否則顯示為其他選項
1069    \else%
1070     \doifelse{#1}{*}{\correct_choice{#1}{#3}}{#3}%
1071     \doif{#1}{*}{\collectanswer{\convertnumber%
1072          {\choiceparameter{numberconversion}}%
1073          {\currentchoicenumber}}}%
1074    \fi%
1075    \stopitem%
1076    \advance\currentchoicenumber by 1\relax%
1077  }
```

11 定义同义命令

```
1078  \def\pitem{\dosingleempty\pitem_indeed}
1079  \def\pitem_indeed[#1]#2{
1080    \startpitem[#1]{#2}\stoppitem
1081  }
1082  \def\citem{\dosingleempty\citem_indeed}
1083  \def\citem_indeed[#1]#2{%
1084    \startcitem[#1]{#2}\stopcitem%
1085  }
```

谨慎使用下面的 fragilecitem,他并不安全。很有可能导致错误

```
1086  \bgroup
1087  \obeylines
1088  \gdef\xcitem{\bgroup\obeylines\dosingleempty\doxcitem}%
1089  \gdef\doxcitem[#1]#2
1090    {\egroup%
1091    \doifsomethingelse{#1}%
1092    {\startcitem[*]#2\stopcitem}%
1093    {\startcitem #2\stopcitem}%
1094    }%
1095  \egroup

1096  \let\fragilecitem\xcitem
```

Memoir Ever

`t-basicexam`

12 設置 fillin 命令

該命令建議在 pitem 環境內進行使用。當然,同時由於 pitem 本身也有 answer 鍵值,可以通過該鍵值進行設定。

fillin 命令主要依靠 bar 命令實現的。基本上按照修改 bar 命令即可修改 fillin 命令。 fillin 命令有兩個參考 textnote 的參數： empty 和 n。 empty=yes,隱藏答案；empty=number 顯示數字； empty=none 顯示答案。 n=* 隱藏答案； n=NUMBER 控制 bar 的長度。

bar 主要有四種樣式,可以通過 mp 參數進行設置： rules:under:dots rules:under:dash

新增一个 align=autoright 来让 fillin 对齐右方。但必须同时设置 n=0 才会正常工作。

```
1097  \setupbar[fillin_text]
1098      [ rulethickness=\fillinparameter{rulethickness},
1099      foregroundcolor=\fillinparameter{foregroundcolor},
1100      foregroundstyle=\fillinparameter{foregroundstyle},
1101        continue=\fillinparameter{continue},
1102          unit=\fillinparameter{unit},
1103         order=\fillinparameter{order},
1104        method=\fillinparameter{method},
1105          dy=\fillinparameter{dy},
1106         max=\fillinparameter{max},
1107        width=\fillinparameter{width},
1108         left=\fillinparameter{left},
1109        right=\fillinparameter{right},
1110       repeat=\fillinparameter{repeat},
1111        color=\fillinparameter{color},
1112       offset=\fillinparameter{offset},
1113        empty=\fillinparameter{empty},
1114          mp=\fillinparameter{mp}]
1115  \setupfillin[%foregroundcolor=,
1116        %before=,after=,
1117        %left=,right=,
1118        %repeat=,mp=
1119        rule=fillin_text,% 引用 bar 命令
1120        empty=none,
1121        continue=yes,
1122        unit=em,
1123        order=foreground,
1124        method=0,
1125        %color=gray,
1126        width=4em,
1127        n=10,
1128        dy=-0.4,
1129        max=3,
1130        offset=-.1,
1131        rulethickness=.05,
1132        foregroundstyle=\ss,]

1133  \newcount\c_fillin_number
1134  \tolerant\protected\def\fillin[#1]#:#2{%
1135   \item_pitemfalse\item_fillintrue%
```

```
1136    \begingroup%
1137    \iffirstargument\setupfillin[#1]\fi%
1138    \removeunwantedspaces%
1139    \global\advance\c_fillin_number by 1\relax
1140    \edef\p_n{\fillinparameter\c!n}%
1141    \edef\p_empty{\fillinparameter\c!empty}%
1142    \edef\p_number{\number\c_fillin_number}%
1143    \edef\currentbar{\fillinparameter\c!rule}%
1144    \edef\fillin_align{\fillinparameter\c!align}
1145    \ifmode_showanswer\setupfillin[empty=none]%
1146    \else\setupfillin[empty=yes]\fi
1147    \doifelse{\fillin_align}{autoright}%
1148        {\unskip\nobreak\hfill\penalty20\hskip2em\hbox{}\nobreak\hfill}{\relax}%
1149    \fillinparameter\c!before\fillinparameter\c!left%
1150    \ifx\p_n\wildcardsymbol
1151      \donefalse
1152      \ifx\p_empty\v!yes
1153       \donetrue
1154      \else\ifx\p_empty\v!number
1155       \donetrue
1156      \else\ifx\p_empty\v!none
1157       \donetrue
1158      \fi\fi\fi
1159      \ifdone
1160       \setupbar[\currentbar][\c!empty=\v!yes]%
1161      \fi%
1162      \inlinebar[\currentbar]\bgroup
1163       \wordboundary#2%
1164       \ifx\p_empty\v!yes
1165       \else\ifx\p_empty\v!number
1166       \else\ifx\p_empty\v!none
1167       \fi\fi\fi
1168      \egroup
1169     \else
1170      \inlinebar[\currentbar]\bgroup
1171      \wordboundary
1172      \scratchcounter\numexpr\p_n\relax
1173      \ifx\p_empty\v!yes
1174        \interwordspacesbefore\scratchcounter
1175        \interwordspacesafter\scratchcounter
1176      \else\ifx\p_empty\v!number
1177        \interwordspacesbefore\scratchcounter
1178        \zwnj\runninghbox{\resetbar\p_number}\zwnj
1179        \interwordspacesafter\scratchcounter
1180      \else\ifx\p_empty\v!none
1181        \scratchcounter\numexpr\p_n/\plustwo\relax
1182        \interwordspacesbefore\scratchcounter
1183        \zwnj\runninghbox{\resetbar{#2}}\zwnj
1184        \interwordspacesafter\scratchcounter
1185      \else
1186       #2%
```

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```
1187    \fi\fi\fi%
1188     \egroup%
1189    \fi%
1190  \fillinparameter\c!right\fillinparameter\c!after%
1191  \doifelse{\fillin_align}{autoright}%
1192      {\parfillskip=0pt \finalhyphendemerits=0 \par}{}%
1193  \endgroup% 因為答案被保存在組內，必須提取出來
1194  \edef\currentfillinanswer{#2}% 如果 fillin 为空，而 pitem 含有含有答案，
1195  \ifempty\currentfillinanswer\else% 应当使用 pitem 而非 fillin
1196   \collectanswer{#2}
1197   \edef\currentanswer{#2}%
1198   \fi}
```

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13 設置 material 環境

顧名思義,\material 環境用來放置大段文本材料。該環境比較特殊,它設置了多個子實例來進行更完善的設置。除了 \setupmaterial[number] 這個實例繼承了 \setupcounter 的全部鍵值之外,其他實例都是新定義的鍵值。

這些實例分別是:
- \setupmaterial[number] 設置該環境標題的**序號**;
- \setupmaterial[title] 設置該環境的**標題**相關的樣式;
- \setupmaterial[author] 設置該環境文章的**作者**相關的樣式;
- \setupmaterial[source] 設置該環境文章的**具體來源**的相關樣式。
- \setupmaterial[indicator] 設置該環境文章的**畫線序號文字**的相關樣式。

此外,title,author,source 的名稱是通過 \setupmaterial 來直接設置。此外,該環境具有一個特殊的子命令 \indicator 來標記文章中的提問的部分並進行添加數字標識—(一)畫線文字。因此,\setupmaterial 還具有一個鍵值 indicator 通過 indicator=reset 對 indicator 進行重置,每當開啓一個新的 material 環境。通過 indicator=continue 對 indicator 取消重置,它將持續計數。當然,也可以直接通過 \setupmaterial[indicator][reset=true] 來啓用重新計數

以上所有實例都具有以下鍵值: before after align style color 此外,\setupmaterial 可以通過 spacebefore 和spaceafter 來控制环境前后的垂直距离

notice , if you want change [start = number] after a chapter , you should use \reset-count[COUNTER_NAME] to reset current counter to the number of start you've setted. otherwise, you need put [start = number] before the chapter you want to reset the counter.

```
\setupmaterial[title][color=green]
\startmaterial[title={Knuth},author={Mos},source={Yelu}]
\input knuth
\stopmaterial
```

(一) Knuth

Mos

Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large–scale user; the designer should also write the first user manual.

The separation of any of these four components would have hurt TEX significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.

But a system cannot be successful if it is too strongly influenced by a single person. Once the initial design is complete and fairly robust, the real test begins as people with many different viewpoints undertake their own experiments.

Yelu

```
1199  \setupmaterial [\c!align=center,
1200        %\c!color=,
1201        %\c!style=,
1202        \c!spacebefore=1em,
1203        \c!spaceafter=1em,
1204        %\c!title=,
1205        %\c!author=,
1206        %\c!source=,
```

```
1207            \c!indicator=continue,
1208            indent={first,always,2em},]
1209  \setupmaterial [\c!number] [\c!before={(},\c!after={)},
1210              \c!prefix=no,\c!start=0,
1211              \c!style=\namedmaterialparameter\c!title\c!style,
1212              \c!color=\namedmaterialparameter\c!title\c!color,
1213              \c!numberconversion=cn,\c!way=\v!by\v!chapter]
1214  \setupmaterial [\c!title] [\c!style=\ss\tfa,\c!color=,\c!align=center,
1215              \c!before=,]
1216  \setupmaterial [\c!author] [\c!style=\tf,\c!color=,\c!align=flushright]
1217  \setupmaterial [\c!source] [\c!before=\par,\c!align=flushright]
1218  \setupmaterial [indicator,indicator_helper]
1219          [style=\ss\bf,before={ (~},after={~) },prefix=no,
1220          numberconversion=cn,type=line,reset=false]

1221  \def\material_counter_parameter#1%
1222   {\begingroup
1223   \def\currentmaterial{#1}%
1224   \setupalign[\namedmaterialparameter\c!title\c!align]
1225   \usematerialstyleandcolor\c!style\c!color
1226   \namedmaterialparameter\currentmaterial\c!before
1227   \incrementcounter[#1]\convertedcounter[#1]%
1228   \namedmaterialparameter\currentmaterial\c!after
1229   \endgroup}

1230  \def\material_parameter#1%creat new element in material
1231   {{\begingroup
1232   \def\currentmaterial{#1}%
1233   \setupalign[\namedmaterialparameter\currentmaterial\c!align]
1234   \usematerialstyleandcolor\c!style\c!color
1235   \namedmaterialparameter\currentmaterial\c!before
1236   \rootmaterialparameter\currentmaterial
1237   \namedmaterialparameter\currentmaterial\c!after
1238   \par\endgroup}}

1239  \tolerant\protected\def\startmaterial[#1]{\begingroup%
1240   \lettonothing\currentmaterial%%
1241   \edef\p_indicator{\rootmaterialparameter\c!indicator}
1242   \edef\p_reset{\namedmaterialparameter{indicator}\c!reset}
1243   \processaction[\p_indicator][
1244    reset=>\let\indicator_reset_helper\resetindicators,
1245    continue=>\continue_countertrue\let\indicator_reset_helper\relax,]
1246   \processaction[\p_reset][
1247    true=>\let\indicator_reset_helper\resetindicators,
1248    false=>\continue_countertrue\let\indicator_reset_helper\relax,]
1249   \env_materialtrue\set_envitem_counter%
1250   \iffirstargument\setupcurrentmaterial[#1]\fi
1251   \indicator_reset_helper
1252   \usematerialstyleandcolor\c!style\c!color%
1253   \blank[\rootmaterialparameter\c!spacebefore]
1254   \startalignment[\rootmaterialparameter\c!align]
1255     \material_counter_parameter\c!number
```

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```
1256        \material_parameter\c!title
1257        \material_parameter\c!author
1258      \stopalignment
1259      \blank[\rootmaterialparameter\c!spaceafter]
1260      \setupindenting[\rootmaterialparameter{indent}]
1261    }
1262  \def\stopmaterial{%
1263    \material_parameter\c!source
1264    \indicator_reset_helper
1265    \endgroup}

1266  \tolerant\protected\def\indicator[#1]#:#2{\begingroup%
1267    \def\currentmaterial{indicator}
1268    \iffirstargument\setupmaterial[indicator][#1]\fi%
1269    \edef\indicator_type{\namedmaterialparameter\currentmaterial\c!type}%
1270    \edef\indicator_reset{\namedmaterialparameter\currentmaterial\c!reset}%
1271    \processaction[\indicator_type]%
1272        [line=>\let\indicator_type\underbar,%
1273         none=>\let\indicator_type\relax]%
1274    \usematerialstyleandcolor\c!style\c!color%
1275    \indicator_type{%
1276    \namedmaterialparameter\currentmaterial\c!before%
1277    \ifmode_check%
1278    \ifenv_material\color[red]{material}\else\color[red]{\currentitemgroup}\fi%
1279    \ifcontinue_counter\color[red]{continue}\fi%
1280    \fi%
1281    \ifenv_material%
1282    \ifmode_check\color[red]{::indicator}\fi%
1283    \incrementcounter[\currentmaterial]%
1284    \convertedcounter[\currentmaterial]%
1285    \else%
1286    \ifmode_check\color[red]{::helper}\fi%
1287    \incrementcounter[indicator_helper]%
1288    \convertedcounter[indicator_helper]%
1289    \fi%
1290    \namedmaterialparameter\currentmaterial\c!after%
1291    #2}
1292  \endgroup}

1293  \def\indicators{\convertedcounter[indicator]%%% TODO 增强该命令的用法
1294        \incrementcounter[indicator]}
1295  \def\resetindicators{\setcounter[indicator][0]%
1296        \setcounter[indicator_helper] [0]}
```

14 设置 close 环境

```
1297  \cnt_closetest=1\relax
1298  \tolerant\protected\def\closebar#1{
1299   \startbar[underbar]
1300    \scratchcounter\numexpr16/\plustwo\relax
1301    \interwordspacesbefore\scratchcounter
1302     \zwj\runninghbox{\resetbar{#1}}\zwj
1303    \interwordspacesafter\scratchcounter
1304   \stopbar}
```

close 環境近乎是單獨設計的。還需要改進: 直接使用 itemgroup 重置,該環境主要使用兩個命令:
\startclose 和 \stopclose 用來創建該環境, \closechoice 用來標記環境內的選項,該命令隨行文放置即
可。選項無須再次在文章後放置, \stopclose 會自行放置。因為 close 環境的子項目 \closechoice 是通過
choice 環境設置的。因此,可以通過 [*] 來標記正確答案。

close 環境同樣繼承了 answer 的鍵值。此外設置了 reset 鍵來選擇是否每一篇重置選項的題號,其他的鍵值:
barcolor barstyle 設置下劃線樣式 before after style color 用於整體環境 width frame stopper distance 用於
選項前題號樣式

```
\startclose
On Oct. 11, hundreds of runners competed in a cross-country race in Minnesota.
Melanie Bailey should have \closechoice[designed,followed,changed,finished] the
course earlier than she did. Her \closechoice[delay,chance,trouble,excuse] came
because she was carrying a \closechoice[judge,volunteer,classmate,competitor]
across the finish line.

As reported by a local newspaper, Bailey was more than two-thirds of the way
through her \closechoice[race,school,town,training] when a runner in front of
her began crying in pain. She \closechoice[agreed,returned,stopped,promised]
to help her fellow runner, Danielle Lenoue. Bailey took her arm to see if she
could walk forward with \closechoice[courage,aid,patience,advice] . She couldn't.
Bailey then \closechoice[went away,stood up,stepped aside,bent down] to let Lenoue
climb onto her back and carried her all the way to the finish line, then another
300 feet to where Lenoue could get \closechoice[medical,public,constant,equal]
attention.

Once there, Lenoue was \closechoice[interrupted,assessed,identified,appreciated]
and later taken to a hospital, where she learned that she had serious injuries in
one of her knees. She would have struggled with extreme
\closechoice[hunger,pain,cold,tiredness]
to make it to that aid checkpoint without Bailey's help.

As for Bailey, she is more \closechoice[worried,ashamed,confused,discouraged]
about why her act is considered a big \closechoice[game,problem,lesson,deal] .
"She was just crying. I couldn't \closechoice[leave,cure,bother,understand] her,"
Bailey told the reporter. "I feel like I was just doing the right thing."

Although the two young women were strangers before the
\closechoice[ride,test,meet,show] ,
they've since become friends. Neither won the race, but the
\closechoice[secret,display,benefit,exchange]
```

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```
of human kindness won the day.
\stopclose
```

On Oct. 11, hundreds of runners competed in a cross-country race in Minnesota. Melanie Bailey should have ⑴ the course earlier than she did. Her ⑵ came because she was carrying a ⑶ across the finish line.

As reported by a local newspaper, Bailey was more than two-thirds of the way through her ⑷ when a runner in front of her began crying in pain. She ⑸ to help her fellow runner, Danielle Lenoue. Bailey took her arm to see if she could walk forward with ⑹. She couldn't. Bailey then ⑺ to let Lenoue climb onto her back and carried her all the way to the finish line, then another 300 feet to where Lenoue could get ⑻ attention.

Once there, Lenoue was ⑼ and later taken to a hospital, where she learned that she had serious injuries in one of her knees. She would have struggled with extreme ⑽ to make it to that aid checkpoint without Bailey's help.

As for Bailey, she is more ⑾ about why her act is considered a big ⑿. "She was just crying. I couldn't ⒀ her," Bailey told the reporter. "I feel like I was just doing the right thing." Although the two young women were strangers before the ⒁, they've since become friends. Neither won the race, but the ⒂ of human kindness won the day.

1. A. designed   B. followed   C. changed   D. finished
2. A. delay   B. chance   C. trouble   D. excuse
3. A. judge   B. volunteer   C. classmate   D. competitor
4. A. race   B. school   C. town   D. training
5. A. agreed   B. returned   C. stopped   D. promised
6. A. courage   B. aid   C. patience   D. advice
7. A. went away   B. stood up   C. stepped aside   D. bent down
8. A. medical   B. public   C. constant   D. equal
9. A. interrupted   B. assessed   C. identified   D. appreciated
10. A. hunger   B. pain   C. cold   D. tiredness
11. A. worried   B. ashamed   C. confused   D. discouraged
12. A. game   B. problem   C. lesson   D. deal
13. A. leave   B. cure   C. bother   D. understand
14. A. ride   B. test   C. meet   D. show
15. A. secret   B. display   C. benefit   D. exchange

```
1305  \setupclose[%showanswer=false,
1306      answer=\getanswerfromchoice,
1307      reset=true,
1308      %mp=,
1309      answerstyle=\ss,
1310      answercolor=red,
1311      width=2em,% set order width
1312      frame=off,% set order frame
1313      stopper=.,% set order stopper
1314      distance=.5em,% set order distance
1315      after=\blank[halfline]]

1316  \def\closechoice[#1]{%定義文章內的序號。這是用戶命令，用來記錄選項(定義選項列表)
1317   \expandafter\gdef\csname close:\romannumerals\cnt_closetest\endcsname{#1}%
1318  % cnt_closetest 用於標記選項列表，會隨著選項題目增加，無論是否啓用重置，該計數器都會記錄並自
1319    增
1320  % 在生成選項序列時，該計數器可以進行：(1) 是否設置了選項 (2) 遞增出選項序列
```

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```
1321    % 該計數器屬於局域，每篇文章都會重置回 1。
1322    \ifclose_counter_reset%
1323     \begingroup%
1324      \switchtocolor[\closeparameter{barcolor}]%
1325      \closeparameter{barstyle}%
1326      \closebar{\number\cnt_closetest}%
1327     \endgroup%
1328    \else%
1329     \begingroup\let\par\relax% 將其封裝在局域，避免 par 命令失效
1330      \switchtocolor[\closeparameter{barcolor}]%
1331      \closeparameter{barstyle}%
1332      \startitemgroup[env_question][n,continue,text,nostopper]%
1333                    [lefttext=\closebar,righttext=]%
1334      \item \save_question_order%
1335      \stopitemgroup%
1336     \endgroup%
1337    \fi\advance\cnt_closetest by 1\relax}

1338    \def\docloseitem#1{\startcitem #1\stopcitem}
1339    \def\close_order{%選項前的序號樣式，序號通過 tempa 設定
1340     \noindent\unskip%
1341     \inframed[width=\closeparameter\c!width,
1342         frame=\closeparameter\c!frame,
1343         foreground=color,
1344         foregroundcolor=\closeparameter\c!color,
1345         foregroundstyle=\closeparameter\c!style]{%
1346      \convertnumber{n}{\number\cnt_closetest_tempa}%
1347      \closeparameter\c!stopper%
1348      \increaseQuestionID%
1349      \installpointoranswer[close][answer]}%
1350     \hskip\closeparameter\c!distance\relax
1351     \global\advance\cnt_closetest_tempa by 1\relax
1352     \unskip}

1353    \def\placeclosechoice{%
1354     \ifnum\cnt_closetest=1\relax
1355        \color[red]{it seems that there is no
1356             "closechoice" be setted,
1357             please check it!}%
1358     \fi%
1359     \scratchcounter\numexpr\cnt_closetest-1\relax
1360     \cnt_closetest=1\relax%
1361     \def\closetest_list{\csname close:\romannumerals\cnt_closetest\endcsname}%
1362     \useclosestyleandcolor\c!style\c!color%
1363     \dorecurse{\number\scratchcounter}{%
1364      \hbox{%
1365       \hsize=\textwidth%
1366       \edef\currentitemnumber{\the\cnt_closetest_tempa}
1367       \edef\currentcloseuserorder{%
1368        \number\cnt_closetest_tempa%放置在這裡才能正確獲取題號
1369        \ifnum\rawcountervalue[Unicode_botlevel]=0\relax\else% 抽出 order 定義，
```

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```
1370      (\rawcountervalue[Unicode_botlevel])\fi}% 因為該環境沒有上級 question 環境
1371     \hbox{\close_order}
1372     \hbox{%
1373      \vtop{%
1374       \startchoice%
1375        \processcommacommand[\closetest_list]\docloseitem%
1376       \stopchoice%
1377      }
1378     }
1379    }%
1380    \advance\cnt_closetest by 1\relax}%
1381    \cnt_closetest=1\relax%
1382    }

1383    \tolerant\protected\def\startclose[#1]{\begingroup%
1384    \env_closetrue\set_envitem_counter%%
1385    \iffirstargument\setupclose[#1]\fi%
1386    \edef\p_reset{\closeparameter\c!reset}
1387    \ifx\p_reset\c!true%
1388      \close_counter_resettrue%
1389    \else\close_counter_resetfalse\fi%
1390    \restore_question_order%
1391    \ifclose_counter_reset\cnt_closetest_tempa=1\relax\else%
1392     \cnt_closetest_tempa=\number\scratchcounter%tempa 标记文章内的序号和选项前的序号
1393     \cnt_closetest_tempa=\numexpr\cnt_closetest_tempa+1\relax
1394    \fi\closeparameter\c!before%
1395    }
1396    \def\stopclose{%
1397    \closeparameter\c!after%
1398    \placeclosechoice%
1399    \endgroup%
1400    }
```

15 設置 optclose 環境

該環境是 close 環境的變體,但目前並未對該環境進行更多的設置。該環境的主要命令有兩個:
\startoptclose 和 \stopoptclose 用來創建該環境, \ocitem 用來標記環境內的選項,該命令隨行文放置
即可。 \ocitem[answer=blabla]blablabla

此外,還有一個特殊的命令,\specialocitem 僅具有 answer 鍵值。可以通過 \setupocitem 來調整該命令的
樣式。該命令標記答案,且無須任何環境包裹。

```
1401  \setupocitem [%answer=,
1402        %color=,
1403        %point=,
1404        %showanswer=false,
1405        answerprelabel={answer: },
1406        answercolor=red,answerstyle=\ss,]

1407  \tolerant\protected\def\startoptclose[#1]{%
1408  \begingroup\env_closetrue\set_envitem_counter%%
1409  \iffirstargument\setupclose[#1]\fi%
1410  \edef\p_reset{\closeparameter\c!reset}%
1411  \ifx\p_reset\c!true\resetcounter [itemgroup:env_question]\fi%
1412  \useclosestyleandcolor\c!style\c!color%
1413  \startitemgroup[env_question][n,continue,text,nostopper][lefttext=\closebar,
1414   righttext=]%
1415  \leftskip=0pt\relax\set_count_envlevel[env_question:1][question]}

1416  \def\stopoptclose{\stopitemgroup\endgroup}

1417  \tolerant\protected\def\ocitem[#1]#:#2
1418   {\begingroup%
1419   \iffirstargument\setupocitem[#1]\fi%
1420   \useocitemstyleandcolor\c!style\c!color%
1421   \let\par\relax\increaseQuestionID%         %%%% 必須命令, 自增序號以備調用
1422   \item \parentitemnumber=\currentitemnumber\relax
1423     \set_count_itemlevel[env_question:2][ocitem]%%%% 必須命令, 設定序號
1424     % 注意, 此時 toplevel 并没有正确的关闭, 因此最终的结果依然是 toplevel。
1425     % 但是该环境本身就被视为 toplevel        => 5
1426     % 如果该环境被视为子项目时, 则需要关闭 toplevel。==> 5(1)
1427     % 另外, 关闭 toplevel 需要在 set_count_itemlevel 命令之前才会生效。
1428     \allowbreak\doifsomethingelse{#2}{(#2)}{}%
1429     \installpointoranswer[ocitem][point]%
1430     \installpointoranswer[ocitem][answer]%
1431     \installdatacollector%      %%%% 必須命令, 設定可調用信息
1432     \save_question_order%
1433   \endgroup}

1434  \tolerant\protected\def\specialocitem[#1]{%
1435  \begingroup\let\par\relax%
1436  \iffirstargument\setupocitem[#1]\fi%
1437  \useocitemstyleandcolor\c!style\c!color%
1438  \startitemgroup[env_question][n,continue,text,nostopper][lefttext=\closebar,
1439   righttext=]%
1440  \item \parentitemnumber=\currentitemnumber\relax
```

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```
1441        \increaseQuestionID%
1442        %\installpointoranswer[ocitem][point]%
1443        \set_count_itemlevel[env_question:2][ocitem]%
1444        % 关于 toplevel 的问题参见 ocitem 的解释。
1445        % 是否需要设置子项目还有待考虑。
1446        \installpointoranswer[ocitem][point]%
1447        \installpointoranswer[ocitem][answer]%
1448        \installdatacollector%
1449        \save_question_order%
1450    \stopitemgroup\removeunwantedspaces\endgroup}
```

16   score

放置在 answer 環境內標記得分。

```
score\score{3}\\
score\score[type=dotfill]{30}\\
\resetscore\\
score\score[type=cdotfill]{30}\\
\setupscore[score=calculation]
score\score[type=space]{3}\\
score\score[type=hfill]{3}\\
```

```
1451  \newcount\cnt_step_score
1452  \def\score_calc#1{% only show number
1453    \newcount\cnt_step_score_temp%
1454    \global\cnt_step_score_temp=#1\relax%
1455    \ifnum\cnt_step_score=0\global\cnt_step_score=#1\relax\else%
1456    \global\cnt_step_score=\numexpr\cnt_step_score+\cnt_step_score_temp\relax%
1457    \fi\number\cnt_step_score%
1458  }
1459  \def\dotfill{\leavevmode%
1460    \xleaders\hbox to 0.25em{\hfil.\hfil}%
1461    \hfill\kern 0pt\relax}
1462  \def\cdotfill{\leavevmode%
1463    \xleaders\hbox to 0.25em{\hfil$\cdot$\hfil}%
1464    \hfill\kern 0pt\relax}

1465  \installnamespace        {score}
1466  \installcommandhandler \????score {score} \????score
1467  \setupscore[style=\ssa,color=red,dotstyle=\ss,dotcolor=red,score=]

1468  \tolerant\protected\def\score[#1]#:#2{\begingroup% format style
1469    \iffirstargument\setupscore[#1]\fi%
1470    \scoreparameter\c!before%
1471    \usescorestyleandcolor\c!style\c!color%
1472    \start\space\scoreparameter{dotstyle}%
1473    \switchtocolor[\scoreparameter{dotcolor}]%
1474    \doif{\scoreparameter\c!type}{}{\dotfill}%
1475    \doif{\scoreparameter\c!type}{space}{}%
1476    \doif{\scoreparameter\c!type}{hfill}{\unskip\hfill}%
1477    \doif{\scoreparameter\c!type}{dotfill}{\dotfill}%
1478    \doif{\scoreparameter\c!type}{cdotfill}{\cdotfill}%
1479    \space\stop\scoreparameter\c!left%
1480    \doif{\scoreparameter{score}}{}{     {#2}%
1481    \doif{\scoreparameter{score}}{default}  {#2}%
1482    \doif{\scoreparameter{score}}{calculation}{\score_calc{#2}}%
1483    \doif{\scoreparameter{score}}{complex}  {#2 : \score_calc{#2}}%
1484    \scoreparameter\c!right\scoreparameter\c!after%
1485  \par\endgroup}
1486  \def\resetscore{%
1487    \cnt_step_score_temp=0\relax%
1488    \cnt_step_score=0\relax%
```

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```
1489  }
1490  \installnamespace      {writingbox}
1491  \installcommandhandler \????writingbox  {writingbox}  \????writingbox
1492  \setupwritingbox[row=10,column=18,width=2em,height=2em,midheight=1em]
1493  \newcount \tbl_row
1494  \newcount \tbl_col
1495  \def\makewritingbox{\dosingleempty\makewritingbox_indeed}
1496  \def\makewritingbox_indeed[#1]{\begingroup%
1497    \tbl_row=\writingboxparameter{row} % yoko
1498    \tbl_col=\writingboxparameter{column} % tate
1499    \setupTABLE[split=yes]
1500    \setupTABLE[column][width=\writingboxparameter{width}]
1501    \setupTABLE[row][odd][height=\writingboxparameter{midheight}]
1502    \setupTABLE[row][even][height=\writingboxparameter{height}]
1503    \bTABLE
1504      \bTR \bTD[nc=\number\tbl_col] {} \eTD \eTR
1505      \dorecurse{\number\tbl_row}{
1506      \bTR
1507        \dorecurse{\number\tbl_col}{\bTD {} \eTD}
1508      \eTR
1509      \bTR \bTD[nc=\number\tbl_col] {} \eTD \eTR}
1510    \eTABLE
1511  \endgroup}
```

17   模拟例子

1512 **\dorecurse**{2000}{% 提高这个数字，可以提升可生成例子的总数。所有例子共用一个总数
1513 **\expandafter\getrandomnumber \csname** n_\romannumeral\recurselevel\endcsname {1} {
1514   20}}}

1515 **\dorecurse**{2000}{% 一旦总例子数超过，则无法继续生成，并抛出错误。
1516 **\expandafter\getrandomnumber \csname** nn_\romannumeral\recurselevel\endcsname {1}
1517   {20}}}

1518 **\def**\longtesttxt[#1]{%%1. \longtesttxt[\romannumeral 1]
1519 **\ifcase\csname** n_#1**\endcsname**%
1520 就像按 S 来响应错误一样。**\or**%0
1521 这个例子不太完整，因为页码没有存储在有用的地方。**\or**%1
1522 TeX 处理数学显示后，它将以下项目添加到当前垂直列表中：惩罚、胶水、实际显示、胶水和惩罚。**\or**
1523   %2
1524 然而，它显示了一种增加或减少计数器的方法，并设置数字中的数字或相当于数字的罗马数字中的字母。**\or**
1525   %3
1526 基本问题是"对 TeXbook 的页面引用应该如何出现在参考页面的描述区域中？"这个例子显示了三种可能
1527   性。**\or**%4
1528 正如 TeX 不会随机连字符单词一样，它也不会在段落中的行之间随机打断数学表达式。**\or**%5
1529 TeX 仅考虑在关系（例如 = 或 < ）或二进制操作（例如 + 或 × ）之后进行中断。**\or**%6
1530 此命令提供对当前字体中所有字符的访问。号码应该在 0 -- 255 范围内。**\or**%7
1531 Junkjunk.tex文件不包含任何有用的东西，但这些行说明了一种读取辅助文件的方法。**\or**%8
1532 此命令将框寄存器中的列表副本添加到当前列表中。**\or**%9
1533 请注意，每个寄存器在创建后都会被初始化。**\or**%0
1534 此命令提供了一种直接指定分隔符的方法。**\or**%1
1535 数字应该是七个十六进制数字。**\or**%2
1536 它的前导数字必须在 0-7 范围内。该数字用作类号，其余六位数字用作 **\type**{\delcode} 值。**\or**%3
1537 Plain TeX 有二十多个定义，类似于：`**\type**{\def\rceil{\delimiter}**"5265307 }}'。**\or**%4
1538 这个定义意味着 **\type**{\rceil} 在家庭5（关闭），其小形式在家庭2位置"65，其大形式在家庭3位置"0
1539   7"。**\or**%5
1540 **\type**{\Delimiter} 指定了一个数学符号，并以两种方式工作。**\or**%6
1541 当 TeX 寻找分隔符时（例如，在 **\type**{\left} 之后），它忽略了类数字，并使用剩余的六位数字作为
1542   **\type**{\delcode}。**\or**%7
1543 但是，当分隔符在其他上下文中出现时，右三位数字被删除，其余四位数字成为符号的 **\type**{\mathcode
1544   }。**\or**%8
1545 对于 **\type**{\rceil}，这意味着 **\type**{\delcode} 是"265307，**\type**{\mathcode} 是"5265"。
1546   **\or**%9
1547 它首先计算子公式在轴上方和下延伸的距离。接下来，它使 y 等于刚刚计算的最大距离的两倍。**\fi**}

1548 **\def**\shorttesttxt[#1]{%%1. \shorttesttxt[i]
1549 **\ifcase\csname** nn_#1**\endcsname**%
1550 悬挂压痕的数量**\or**%0
1551 段落中正线的宽度**\or**%1
1552 开始一个没有缩进的新段落**\or**%2
1553 告诉TeX尝试增加或减少段落中的行数**\or**%3
1554 扩展令牌，但在到达非空间令牌之前什么都不做**\or**%4
1555 只有当主垂直列表为空时，它才会结束当前工作**\or**%5
1556 该命令在内部垂直模式下是不允许的**\or**%6
1557 任意中断由三个字符序列组成**\or**%7

```
1558        另一个无效号码被传递了\or%8
1559        来自假部分的条件命令\or%9
1560        线路需要转移的金额\or%0
1561        用于指定显示样式\or%1
1562        关系后断线的惩罚\or%2
1563        此命令定义了宏\or%3
1564        家庭的脚本字体\or%4
1565        尺寸没有变化\or%5
1566        额外的空间\or%6
1567        左边的段落\or%7
1568        当前线宽\or%8
1569        文本样式\or%9
1570        序列\fi}

1571    \def\choicenum[#1][#2][#3]{
1572      \ifnum\csname nn_#1\endcsname < 6
1573        \expandafter\startcitem[*]{\shorttesttxt[\romannumeral #2]} \stopcitem
1574      \else
1575        \expandafter\startcitem{\shorttesttxt[\romannumeral #3]} \stopcitem
1576      \fi
1577    }

1578    \newcount\LNUM\LNUM=1\relax
1579    \newcount\CNUM\CNUM=1\relax
1580    \newcount\DNUM\DNUM=1\relax
1581    \newcount\ENUM\ENUM=2\relax

1582    \def\example@choice#1{
1583      \setupquestion[point=2]
1584      \dorecurse{#1}{
1585      \startquestion
1586      \longtesttxt[\romannumeral\LNUM]\global\advance\LNUM by 1\relax
1587        \startchoice
1588        \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1589        \global\advance\CNUM by 1\relax\global\advance\DNUM by 2\relax\global
1590         \advance\ENUM by 2\relax
1591        \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1592        \advance\CNUM by 1\relax\advance\DNUM by 1\relax\advance\ENUM by 2\relax
1593        \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1594        \advance\CNUM by 1\relax\advance\DNUM by 1\relax\advance\ENUM by 2\relax
1595        \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1596        \advance\CNUM by 1\relax\advance\DNUM by 1\relax\advance\ENUM by 2\relax
1597        \stopchoice
1598        \startanswer
1599        \input knuthmath
1600        \stopanswer
1601      \stopquestion}
1602    }
1603    \def\example@fillin#1{
1604      \setuppitem [point=3]
1605      \startquestion
1606       \longtesttxt[\romannumeral\LNUM]
```

```
1607       \def\fillinanswer{\shorttesttxt[\romannumeral\CNUM]}
1608       \startproblem
1609       \dorecurse{#1}{
1610        \startpitem
1611         \ifmode_showanswer DDD \else XXXX\fi
1612         \longtesttxt[\romannumeral\CNUM]\fillin[]{\fillinanswer}
1613        \stoppitem
1614        \startanswer
1615           \ifmode_showanswer DDD \else XXXX\fi
1616           \input knuthmath
1617          \stopanswer
1618        \global\advance\CNUM by 1\relax}
1619       \stopproblem
1620       \stopquestion
1621    }
1622    \def\example@pitem#1{
1623      \startquestion
1624      \longtesttxt[\romannumeral\LNUM]
1625      \def\fillinanswer{\shorttesttxt[\romannumeral\CNUM]}
1626      \startproblem
1627      \dorecurse{#1}{
1628       \startpitem[answer={answer : \recurselevel},point={\number\CNUM\relax}]
1629       \longtesttxt[\romannumeral\CNUM]\stoppitem
1630       \startanswer
1631          \input knuthmath
1632       \stopanswer
1633       \global\advance\CNUM by 1\relax}
1634      \stopproblem
1635      \stopquestion
1636    }
1637    \def\example@material#1{
1638      \startmaterial
1639      \input knuthmath
1640      \stopmaterial
1641      \setupquestion[point=6]
1642      \dorecurse{#1}{
1643       \startquestion
1644       \longtesttxt[\romannumeral\LNUM]\global\advance\LNUM by 1\relax
1645          \startchoice
1646          \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1647          \global\advance\CNUM by 1\relax%
1648          \global\advance\DNUM by 2\relax%
1649          \global\advance\ENUM by 2\relax%
1650          \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1651          \advance\CNUM by 1\relax%
1652          \advance\DNUM by 1\relax%
1653          \advance\ENUM by 2\relax%
1654          \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1655          \advance\CNUM by 1\relax%
1656          \advance\DNUM by 1\relax%
1657          \advance\ENUM by 2\relax%
```

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```
1658        \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1659        \advance\CNUM by 1\relax%
1660        \advance\DNUM by 1\relax%
1661        \advance\ENUM by 2\relax%
1662        \stopchoice
1663        \startanswer
1664         \input knuthmath
1665        \stopanswer
1666      \stopquestion}
1667   }
1668   \def\example@close#1{
1669     \startclose
1670     \def\closechoicex{\shorttesttxt[\romannumeral\DNUM]\global\advance\DNUM by 1
1671      \relax}
1672     \dorecurse{#1}{
1673       \dorecurse{3}{
1674        \longtesttxt[\romannumeral\CNUM]
1675       \global\advance\CNUM by 1\relax
1676       }\closechoice[\closechoicex,{[*]\closechoicex},\closechoicex]
1677      \longtesttxt[\romannumeral\CNUM]}
1678     \stopclose
1679   }

1680   \def\example@optclose#1{
1681     \startoptclose
1682     \def\closechoicex{{\ss\shorttesttxt[\romannumeral\DNUM]\global\advance\DNUM by
1683      1\relax}}
1684     \dorecurse{#1}{
1685       \dorecurse{3}{
1686        \longtesttxt[\romannumeral\CNUM]
1687       \global\advance\CNUM by 1\relax
1688       }\ocitem[answer={\shorttesttxt[\romannumeral\DNUM]}]{\closechoicex,
1689        \closechoicex,\closechoicex}
1690      \longtesttxt[\romannumeral\CNUM]}
1691     \stopoptclose
1692   }

1693   \def\example@specialoptclose#1{
1694     \def\closechoicex{\shorttesttxt[\romannumeral\DNUM]\global\advance\DNUM by 1
1695      \relax}
1696     \dorecurse{#1}{
1697       \dorecurse{3}{
1698        \longtesttxt[\romannumeral\CNUM]
1699       \global\advance\CNUM by 1\relax
1700       }\specialocitem[answer={\closechoicex}]
1701      \longtesttxt[\romannumeral\CNUM]}
1702   }

1703   \newcount\qid_in_chap\qid_in_chap=1\relax
1704   \def\resetanswerid{\qid_in_chap=1\relax}
1705   \def\typeanswerbychap{\dosingleempty\typeanswerbychap_indeed}
```

```
1706  \def\typeanswerbychap_indeed[#1]#2{% #1 = chapter number, 該命令會自行遞增計數器來獲取
1707      答案
1708      \iffirstargument\qid_in_chap=#1\relax\fi%
1709      \datasetvariable{Answer_collector}{#2-\the\qid_in_chap}{answer}%
1710      \advance\qid_in_chap by 1\relax}
1711  \def\typeanswerdirect#1{% #1 = qid, 需要自行輸入來獲取某個題目的答案
1712      \datasetvariable{Answer_collector}{#1}{answer}}
1713  \def\typeanswerlist{\dodoubleempty\typeanswerlist_indeed}
1714  \def\typeanswerlist_indeed[#1][#2]#3{%#1 = chapter number
1715      \ifsecondargument\qid_in_chap=#2\fi% #2 = from which question to start
1716      \dorecurse{#3}{% answer amount
1717      \datasetvariable{Answer_collector}{#1-\the\qid_in_chap}{answer}%
1718      \advance\qid_in_chap by 1\relax}
1719  }

1720  \newcount\answer@seq@tempa\answer@seq@tempa=0\relax%
1721  \newcount\answer@seq@tempb\answer@seq@tempb=0\relax%
1722  \newcount\answer@seq@tempc
1723  \def\type@answer@i[#1*#2,#3,#4]{% #1 for row #2 for column %
1724                  % #3 chapter number #4 last answer id%
1725      \answer@seq@tempc=\numexpr#4-1\relax%
1726      \bTABLE
1727      \dorecurse{#1}{\bTR
1728       \dorecurse{#2}{%
1729       \ifnum\answer@seq@tempa>\answer@seq@tempc \bTD\eTD\relax\else%
1730          \advance\answer@seq@tempa by 1\relax%
1731           \expanded{\bTD
1732           \datasetvariable{Answer_collector}{#3-\the\answer@seq@tempa}{userorder}
1733      \eTD}\fi}
1734      \eTR\bTR
1735       \dorecurse{#2}{%
1736        \ifnum\answer@seq@tempb>\answer@seq@tempc \bTD\eTD\relax\else%
1737       \advance\answer@seq@tempb by 1\relax%
1738         \expanded{\bTD
1739         \datasetvariable{Answer_collector}{#3-\the\answer@seq@tempb}{answer}
1740      \eTD}\fi}
1741      \eTR}
1742     \eTABLE
1743  }

1744  \def\type@answer@ii{
1745  \answer_seq=0\relax
1746  \bTABLE
1747  \dorecurse{4}{\bTR
1748   \dorecurse{5}{
1749      \advance\answer_seq by 1\relax%
1750        \expanded{\bTD\the\answer_seq\eTD}
1751      \expanded{\bTD
1752      \datasetvariable{Answer_collector}{\the\answer_seq}{answer}
1753     \eTD}}
1754  \eTR}
1755  \eTABLE}
```

Memoir Ever

`t-basicexam`

18 模式设置

```
1756  \definemode[teacher][keep]
1757  \definemode[student][keep]
1758  \definemode[check] [keep]
1759  \startmode[teacher]
1760   \mode_showanswertrue
1761   \mode_showpointtrue
1762   \setupquestion[showanswer=true,showpoint=true]
1763   \setupchoice [showanswer=true,showpoint=true]
1764   \setupcitem [showanswer=true,showpoint=true]
1765   \setuppitem [showanswer=true,showpoint=true]
1766   \setupclose [showanswer=true,showpoint=true]
1767   \setupocitem [showanswer=true,showpoint=true]
1768   \setupanswer [showanswer=true,showpoint=true,showscript=false]
1769  \stopmode
1770  \startmode[student]
1771   \mode_showanswerfalse
1772   \mode_showpointfalse
1773   \setupquestion[showanswer=false,showpoint=true]
1774   \setupchoice [showanswer=false,showpoint=true]
1775   \setupcitem [showanswer=false,showpoint=true]
1776   \setuppitem [showanswer=false,showpoint=true]
1777   \setupclose [showanswer=false,showpoint=true]
1778   \setupocitem [showanswer=false,showpoint=true]
1779   \setupanswer [showanswer=false,showpoint=true,showscript=false]
1780  \stopmode
1781  \startmode[check]
1782   \mode_checktrue
1783  \stopmode
1784  \def\showanswer{\mode_showanswertrue\setupanswer[showscript=false]}
1785  \def\hideanswer{\mode_showanswerfalse\setupanswer[showscript=true]}
1786  \let\showpoint\mode_showpointtrue
1787  \let\hidepoint\mode_showanswerfalse
1788  \let\showchekinfo\mode_checktrue
1789  \protect
1790  \stopmodule
1791  \endinput
```