

EXTENSION DE STYLE T_EX JAZZ-ASKREPLY

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RÉSUMÉ

L'extension de style T_EX « *askreply* » a pour objet de gérer l'affichage des environnements d'exercices et de questionnaires à choix multiples — QCM — au sein d'un document, de même que leurs contreparties respectives : environnements de solutions et de réponses. Chaque environnement peut être enregistré pour reporter son affichage, disposer d'une base de données d'exercices et de quiz ou partager leur rédaction avec d'autres contributeurs. Par ailleurs, ce style a été conçu parallèlement à l'extension « *assignpoints* » qui, comme son nom l'indique, permet d'attribuer et de recouvrir des points associés aux exercices et aux questionnaires.

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1 Introduction et usage élémentaire

Cette extension \LaTeX peut s'utiliser pour disposer d'une mise en forme des environnements d'exercices et de questionnaires à choix multiples — QCM ou quiz. Elle propose effectivement une conception graphique fondée sur le très puissant outil PGF/TikZ et le remarquable paquet « **tcolorbox** ».

Sa teneur ne s'arrête bien entendu pas là, car techniquement, le caractère novateur de cette extension est d'exploiter les possibilités du format PDF avec les couches *Optional Content Groups* (OCG), mais surtout *Optional Content Membership Dictionaries* (OCMD) désormais implémentées et accessibles pour \LaTeX depuis peu. Ces fonctionnalités sont au fondement de l'interactivité des quiz (cf. §3.2).

Le style « **askreply** » peut se charger seul ou en conjonction avec l'extension « **assignpoints** » pour gérer la notation des exercices et des quiz. Dans cette hypothèse, « **askreply** » doit être chargée *après* « **assignpoints** ».

1.1 Chargement de l'extension

Pour charger l'extension, il suffit de saisir en préambule de document.

```
\usepackage{texjazz-askreply}
```

Si cela ne fonctionne pas car ce paquet n'est pas disponible dans votre distribution \LaTeX , une copie du fichier « **askreply.sty** » est à placer dans le même répertoire que votre document. Pour une utilisation régulière, il est conseillé de l'installer dans votre arborescence locale, sous le répertoire `/texmf` par exemple, puis de rafraîchir les accès aux fichiers par les commandes `texhash` ou `tlmgr`.

Au risque d'insister, si l'extension « **assignpoints** » est également chargée, il faut impérativement le faire *avant* le style « **askreply** ».

```
\usepackage{texjazz-assignpoints}
\usepackage{texjazz-askreply}
```

Par ailleurs, il faut savoir que l'extension affiche par défaut les entêtes des différents environnements en anglais. Le style « **askreply** » propose les options de langues en français et en allemand (cf. §3.1) :

```
\usepackage[french]{texjazz-askreply}% Français
\usepackage[german]{texjazz-askreply}% Allemand
```

Pour que les différentes références croisées (éléments OCMD) et couches graphiques (éléments PGF/TikZ) s'ajustent, il faut au moins quatre compilations successives (respectivement deux par famille d'éléments).

1.2 Composition d'un premier exercice/quiz

Afin d'illustrer le propos, nous pouvons nous engager dans la composition d'un premier exercice élémentaire.

```
\begin{exercice}[title=Addition simple]
  Que donne 1+1 ? % Exercice avec solution associée
\end{exercice}
```



EXERCICE 1 — ADDITION SIMPLE

Que donne $1 + 1$?

 Solution page 4

`\begin{exercice}[key-value options]`

On constate que la mise en forme est sobre et élégante^a. Le numéro de l'exercice et, le cas échéant, la page où se trouve la solution sont indiqués. Par ailleurs, un titre optionnel peut être introduit pour mentionner le thème de l'exercice. Enfin, un pictogramme affiche en marge le type d'environnement dont il s'agit. Ce visuel peut être^b changé, mais par défaut, il sous-tend un exercice de codage à réaliser avec un ordinateur. Le détail des options possibles est exposé en §3.4 en page 12.

```
\begin{exercice}[symbol=\faPenFancy, title=Addition simple]
  Que donne  $1+1$  ? % Changement de symbole d'appel d'exercice
\end{exercice}
```



EXERCICE 2 — ADDITION SIMPLE

Que donne $1 + 1$?

`\begin{quiz}[key-value options]`

Les environnements de quiz sont tout aussi dépouillés et sont également affublés d'un numéro, d'un titre optionnel et d'un pictogramme modifiable qui, par défaut, symbolise une liste — sous-entendu de questions.

```
\begin{quiz}[title=Formats de couleur]
  Quelles composantes de couleur forment une image RGB ? (Plusieurs choix)
\end{quiz}
```



QUESTIONNAIRE 1 — FORMATS DE COULEUR

Quelles composantes de couleur forment une image RGB ? (Plusieurs choix)

`\begin{solution}[key-value options]`

Comme pendant direct des environnements d'exercice sont offerts des environnements de solution, là encore avec leur signalétique consacrée : pictogramme associé et rappel du titre et de la page de l'énoncé d'exercice.

a. Néanmoins, rien d'exceptionnel en utilisant l'extension « `tcolorbox` ».

b. La police de caractères « `fontawesome` » de l'extension éponyme est ici utilisée.

Dans une utilisation élémentaire, l'environnement de solution n'emploie pas d'option particulière : le titre et le numéro d'exercice auxquels se réfère la solution sont automatiquement détectés. En revanche, dans une configuration plus avancée, les solutions peuvent être ajustées plus précisément (cf. §3.1 et 3.4).

```
\begin{solution}
Après réflexion intense, il semble que  $1+1=2$ 
\end{solution}
```



SOLUTION 1 — ADDITION SIMPLE (page 3)

Après réflexion intense, il semble que $1 + 1 = 2$

Au cas où plusieurs énoncés d'exercice se succèdent sans que certains d'entre eux n'aient de solution, il faut explicitement saisir l'identifiant de l'exercice à partir duquel on recommence la comptabilisation des solutions. Et ainsi de suite si les solutions sont fragmentés au sein du document considéré. Le détail du mécanisme est exposé dans la documentation du paquet « `assignpoints` » et au §3.1.

2 Attribution et récupération de points

Cette section se propose de conduire un rapide rappel des commandes de comptabilisation de point(s). Renvoi est fait à la documentation de l'extension de style « `assignpoints` » pour un descriptif plus avancé.

2.1 Numération et niveaux des environnements

`\points{<points-number>}`

La commande d'attribution des points de notation est `\points{<points-number>}`. En y faisant appel plusieurs fois dans un même environnement, les points s'additionnent. Considérons alors le code qui suit, apportant la composition subséquente.

```
\begin{exercice}[title=Équation simple, level=basic]
Déterminer un nombre  $x$  tel que  $3 \cdot x = 15$  \points{0.5} et expliquer
la démarche adoptée qui a permis d'obtenir ce résultat. \points{1.5}
\end{exercice}
```



EXERCICE 3 — ÉQUATION SIMPLE

2 POINTS



Déterminer un nombre x tel que $3 \cdot x = 15$ et expliquer comment obtenir ce résultat.

Le total des points de l'exercice s'affiche à droite de l'entête. On remarque que si cette somme de points est un entier, la partie décimale « `<int>.0` » est tronquée. En outre, en marge de droite de l'entête, une signalétique de trois petits voyants indiquent le niveau du public auquel s'adresse l'exercice : basique, intermédiaire ou avancé. Les niveaux sont contrôlés par l'option `level=basique/intermédiaire/avancé`.

`\itempoints{<points-number>}`

La commande `\itempoints{<points-number>}` est « silencieuse », dans le sens où elle ne s'affiche pas directement. Dans le cas où l'accumulation de points est structurée en liste explicite (environnements `itemize` ou `enumerate`), il est parfois pratique, au-delà de la comptabilisation, d'indiquer directement les points associés aux items. C'est réalisable par le biais de la commande `\itempoints{<points-number>}`.

```
\begin{exercice}[title=Équation simple, level=basic]
  Résoudre les problèmes suivants.
  \begin{enumerate}
    \item Déterminer un nombre
       $x$  tel que  $3 \cdot x = 15$ . \itempoints{0.5}
    \item Expliquer la démarche adoptée
      pour obtenir ce résultat. \itempoints{1.5}
  \end{enumerate}
\end{exercice}
```



EXERCICE 4 — ÉQUATION SIMPLE

2 POINTS



Résoudre les problèmes suivants.

1. Déterminer un nombre x tel que $3 \cdot x = 15$. (0,5)
2. Expliquer la démarche adoptée pour obtenir ce résultat. (1,5)

`\itempoints*{<points-number>}`

Une même approche s'applique aux quiz. Admettons la saisie de code à venir.

```
\begin{quiz}[title=Formats de couleur]
  Répondre aux questions. Plusieurs assertions possibles.
  \begin{itemize}
    \item Quelles composantes de couleur
      forment une image RGB ? \itempoints*{1.0}
    \item Quelles composantes de couleur
      forment une image CYMK ? \itempoints*{2}
  \end{itemize}
\end{quiz}
```



QUESTIONNAIRE 2 — FORMATS DE COULEUR

3 POINTS

Répondre aux questions. Plusieurs assertions possibles.

- ▶ Quelles composantes de couleur forment une image RGB ? (1 point)
- ▶ Quelles composantes de couleur forment une image CYMK ? (2 points)

En dehors de l'esthétique cousine, on remarque que l'emploi de la version étoilée de la macro `\itempoints*{<points-number>}` permet de rajouter au nombre de point(s) une « unité » de comptabilisation, c.-à-d. « point » et « points » pour respectivement le singulier et le pluriel.

2.2 Recouvrement et synthèse des points

La rédaction des exercices (respectivement des quiz) étant effectuée et l'attribution de points accomplie, les commandes de recouvrement et d'affichage des points peuvent être présentées. Encore une fois, les détails sont disponibles en consultant la documentation de l'extension **assignpoints** ; juste une synthèse est ici menée.

```
\getpoints<*>{\exercise-number}
\getpoints<*>[exercise]{\exercise-number}
\getpoints<*>[quiz]{\quiz-number}
```

<pre>\numberofexercises \exercisetotalpoints \exercisetotalpoints* \getpoints{\ex-nb} \getpoints*{\ex-nb} \getpoints[exercise]{\ex-nb} \getpoints*[exercise]{\ex-nb} \numberofquizzes \quiztotalpoints \quiztotalpoints* \getpoints[quiz]{\qz-nb} \getpoints*[quiz]{\qz-nb}</pre>	<ul style="list-style-type: none"> — <code>\numberofexercises</code> donne le nombre d'exercices dans tout le document ; — <code>\exercisetotalpoints</code> et <code>\exercisetotalpoints*</code> apportent directement la somme de tous les points sur l'ensemble des exercices ; — <code>\getpoints{\langle i \rangle}</code> et <code>\getpoints*{\langle i \rangle}</code> ou <code>\getpoints<*>[exercise]{\langle i \rangle}</code> conduisent au total des points du « $i^{\text{ième}}$ » exercice numéroté. — <code>\numberofquizzes</code> retourne le nombre de questionnaires du document ; — <code>\quiztotalpoints</code> et <code>\quiztotalpoints*</code> récupèrent la somme des points sur l'ensemble des questionnaires du document ; — à l'instar des exercices, <code>\getpoints[quiz]{\langle i \rangle}</code> et <code>\getpoints*[quiz]{\langle i \rangle}</code> fournissent le total des points du « $i^{\text{ième}}$ » questionnaire.
---	---

À noter que l'information nécessaire à ces macros est retrouvée à partir des valeurs enregistrées dans le fichier auxiliaire (extension « **.aux** ») lors de la première compilation \LaTeX . Pour obtenir une notation correctes, il faut sur ces aspects compiler le document au moins une seconde fois. Une compilation à l'issue de laquelle des points d'interrogation s'affichent en italique — ?? — signifie qu'il faut la réitérer. En revanche, un affichage en caractères gras — ?? — indique une erreur de recouvrement dans les valeurs de points.

À titre d'illustration, on donne le code ci-dessous.

```
L'exercice 4 a \getpoints{4} points, il y a \numberofexercises\
exercices avec un total de \exercisetotalpoints*.
En contrepartie, le questionnaire 2 a à son actif
\getpoints*[quiz]{2} et il y a \numberofquizzes\ questionnaires
pour un total de \quiztotalpoints\ points.
```

Après compilation cela produit la phrase suivante : « *L'exercice 4 a 2 points, il y a 5 exercices avec un total de 11 points. En contrepartie, le questionnaire 2 a à son actif 3 points et il y a 3 questionnaires pour un total de 5,5 points* ».

3 Ajustements et options

3.1 Structuration des exercices

À l'occasion, si un exercice (resp. un questionnaire) amène à se présenter avec des sous-parties (par exemple, un sujet général décomposé en plusieurs domaines

subexercice
quizquestion
subsolution

spécifiques), l'extension « askreply » offre la possibilité de segmenter la formulation d'un énoncé en sous-exercices (subexercice) et en questions (quizquestion) pour structurer le document. Comme parallèle aux sous-exercices, l'extension offre des environnements de sous-solutions (subsolution).

```
\begin{subexercice}[key-value options]
\begin{quizquestion}[key-value options]
\begin{subsolution}[key-value options]
```

Ainsi, ces environnements intriqués fonctionnent à l'identique de leurs homologues de rang supérieur, néanmoins ils ne peuvent uniquement s'utiliser qu'au sein de ceux-ci. Un « subexercice » donné est alors contenu dans un « exercice », une « quizquestion » incluse à un « quiz » et une « subsolution » dans une « solution ».

Ce qui suit résulte d'un exemple de structuration d'un exercice en deux sous-parties bien distinctes.



EXERCICE 5 — CALCUL ANALYTIQUE

7 POINTS

Répondre aux problèmes à suivre.

EXERCICE 5.1 — DÉRIVÉES 4 POINTS

Déterminer les dérivées des fonctions suivantes.

1. $f : \mathbb{R} \rightarrow \mathbb{R}, f(x) = x^2 + 2x + 3$
2. $g : \mathbb{R} \rightarrow \mathbb{R}, g(x) = \exp(x^2)$

EXERCICE 5.2 — MAXIMA ET MINIMA 3 POINTS

Caractériser le maximum ou le minimum local de la fonction
 $f : \mathbb{R} \rightarrow \mathbb{R}, f(x) = x^2 + 2x + 3$.

 Solution page 8

```
\begin{exercice}[title=Calcul analytique, level=intermediate]
\begin{subexercice}[title=Dérivées]
Déterminer les dérivées des fonctions suivantes. \points{4}
\begin{enumerate}
\item  $f : \mathbb{R} \rightarrow \mathbb{R}, f(x) = x^2 + 2x + 3$  \itempoints*{1}
\item  $g : \mathbb{R} \rightarrow \mathbb{R}, g(x) = \exp(x^2)$  \itempoints*{3}
\end{enumerate}
\end{subexercice}
\begin{subexercice}[title=Maxima et minima]
Caractériser le maximum ou le minimum local
de la fonction \\\
 $f : \mathbb{R} \rightarrow \mathbb{R}, f(x) = x^2 + 2x + 3$ . \points{3}
\end{subexercice}
\end{exercice}
```

On vérifie alors qu'un « **subexercice** » est bien uniquement inclus au sein d'un exercice et qu'il n'est pas permis d'imbriquer des environnements « **subexercice** » entre eux. L'extension signale une erreur si tel n'est pas le cas.

Pour les environnements de « **solution** » et de « **subsolution** », on a la même correspondance qu'avec les exercices et les sous-exercices. Néanmoins, pour illustrer la comptabilisation des sous-solutions en rapport à l'exercice précédent, on doit explicitement saisir son numéro d'identification, ici 5. En effet, comme les exercices 2 à 4 n'ont pas de solution dans ce document, le comportement par défaut serait d'incrémenter d'une unité le numéro de solution, à savoir ici 2, puisque le premier exercice possède une solution déjà affichée (voir page 4).

```
\begin{solution}[ID=5]
\begin{subsolution}
\begin{enumerate}
\item pour  $f:\mathbb{R} \rightarrow \mathbb{R}$ ,  $f(x) = x^2+2x+3$ 
 $\Rightarrow f'(x) = 2x+2$ 
\item pour  $g:\mathbb{R} \rightarrow \mathbb{R}$ ,  $g(x) = \exp(x^2)$ 
 $\Rightarrow g'(x) = 2x \cdot \exp(x^2)$ 
\end{enumerate}
\end{subsolution}
\begin{subsolution}
Une fonction polynôme de degré 2, à savoir  $p(x)=ax^2+bx+c$ ,
admet un extremum pour  $x=-b/a$ . Donc, pour la fonction
 $f:\mathbb{R} \rightarrow \mathbb{R}$ ,  $f(x) = x^2+2x+3$ , on a  $x_e=-2$ .
\end{subsolution}
\end{solution}
```



SOLUTION 5 — CALCUL ANALYTIQUE (page 7)

7 POINTS

Les résultats attendus sont à suivre.

SOLUTION 5.1 — DÉRIVÉES 4 POINTS

Les dérivées des fonctions suivantes sont :

1. pour $f:\mathbb{R} \rightarrow \mathbb{R}$, $f(x) = x^2 + 2x + 3 \Rightarrow f'(x) = 2x + 2$
2. pour $g:\mathbb{R} \rightarrow \mathbb{R}$, $g(x) = \exp(x^2) \Rightarrow g'(x) = 2x \cdot \exp(x^2)$

SOLUTION 5.2 — MAXIMA ET MINIMA 3 POINTS

Une fonction polynôme de degré 2, à savoir $p(x) = ax^2 + bx + c$, admet un extremum pour $x = -b/a$. Donc, pour la fonction $f:\mathbb{R} \rightarrow \mathbb{R}$, $f(x) = x^2 + 2x + 3$, on a $x_e = -2$.

Qu'il s'agisse des solutions et des sous-solutions, on peut remarquer que les titres et les points qui leurs sont attribués sont automatiquement recouverts et affichés, comme pour exercices, à droite de l'entête. De même, le numéro de page de l'énoncé de l'exercice est rappelé (comme d'ailleurs la page de la solution d'un exercice figure à la fin d'un énoncé, uniquement si elle existe).

3.2 Questionnaires à choix multiples

Dans le principe, la même approche s'applique au tandem d'environnements « `quiz` » et « `quizquestion` ». Néanmoins, le caractère novateur de l'extension `askreply` par rapport à `assignpoints` est de proposer un nouvel environnement `quizquestion` fondé sur les fonctionnalités *Optional Content Groups* (OCG) et *Optional Content Membership Dictionaries* (OCMD) du format PDF. Cela permet une interactivité des quiz avec une interface proche de celles des Mooc (voir par exemple `FUN-MOOC`, France Université numérique). Pour une présentation plus complète des détails techniques, se référer au §3.4 et au code source. Ici est uniquement exposée l'interface utilisateur.

`quizquestion`
`quizquestion*`
`\mcqproposal`

Les questionnaires à choix multiples sont, à l'instar des exercices, structurés en questions possédant un titre optionnel et une numération de points. Ces questions sont elles-mêmes associées à des propositions de réponses via la macro `\mcqproposal`. La syntaxe générale est fournie par le code à suivre.

```
\begin{quiz}[title=<title>]
  \begin{quizquestion}<display>[pos]{correct}{wrong}%
    {questiontitle}(dimx,dimy)<explanation>
    \mcqproposal{text-1}
    ...
    \mcqproposal{text-n}
  \end{quizquestion}
\end{quiz}
```

`\begin{quizquestion}<(displ.)>[<(pos.)>]{<(correct)>}{<(wrong)>}{<(opt. title)>}{<(dimx,dimy)>}<(expl.)>`

Le détail des différents champs de l'environnement `quizquestion` s'appuie sur la logique à suivre pour les arguments obligatoires comme optionnels.

`display mode = <margin|tooltip>`

Par défaut : `<margin>`

Manière optionnelle d'afficher la réponse, en marge (par défaut), `<margin>` ou en infobulle, `<tooltip>`.

`position = [b|c|t]`

Par défaut : `[b]`

Positionnement optionnel de l'encart de réponse : en bas (par défaut) `[b]` pour *bottom*, au centre `[c]` pour *centered* ou en haut `[t]` pour *top*.

`correct answers = {<(comma separated list of proposal numbers)>}`

Numéros obligatoires des propositions correctes, séparés par des virgules.

`wrong answers = {<(comma separated list of proposal numbers)>}`

Numéros obligatoires des propositions fausses, séparés par des virgules.

`optional title = {<(optional title)>}`

(initialement vide)

Titre optionnel.

`dimx,dimy = (dimx,dimy)`

Par défaut : `(6pt,12pt)`

Ajustement optionnel des coordonnées de l'affichage de la réponse (`<tooltip>`).

`explanations = <text>`

Par défaut : `<Sorry, no answer available>`

Texte optionnel mais souhaitable d'explication.

En appliquant la syntaxe à un cas concret, on peut considérer le code donné ci-dessous qui illustre les options essentielles.

```
\begin{quiz}[title=Histoire de couleur]
\begin{quizquestion}{1,3,4}{2,5,6,7}{Modèle RGB/RVB}
<Le modèle « Rouge, Vert, Bleu » correspond aux couleurs primaires d'une image>
Quelles sont les composantes d'une image RGB/RVB ? \\
Plusieurs assertions possibles. \points{1.5}
\mcqproposals{Rouge}
\mcqproposals{Jaune}
\mcqproposals{Vert}
\mcqproposals{Bleu}
\mcqproposals{Cyan}
\mcqproposals{Blanc}
\mcqproposals{Magenta}
\end{quizquestion}
\begin{quizquestion*}<tooltip>{4}{1,2,3,5,6,7}{Cheval de Henry IV}(4pt,24pt)
Quelle est la couleur du cheval blanc de Henry IV ? \points{1}
\mcqproposals{Noire}
\mcqproposals{Jaune}
\mcqproposals{Grise}
\mcqproposals{Blanche}
\mcqproposals{Brune}
\mcqproposals{Orange}
\mcqproposals{Beige}
\end{quizquestion*}
\end{quiz}
```



QUESTIONNAIRE 3 — HISTOIRE DE COULEURS

2,5 POINTS

QUESTIONNAIRE 3.1 — MODÈLE RGB/RVB 1,5 POINTS

Quelles sont les composantes d'une image RGB/RVB ?
Plusieurs assertions possibles.

<input type="checkbox"/>	Rouge
<input type="checkbox"/>	Jaune
<input type="checkbox"/>	Vert
<input type="checkbox"/>	Bleu
<input type="checkbox"/>	Cyan
<input type="checkbox"/>	Blanc
<input type="checkbox"/>	Magenta
<input type="checkbox"/>	Orange

☐ Noir
 ☐ Violet
 ☐ Rose

VÉRIFIER
 AFFICHER LA RÉPONSE
 RÉINITIALISER

QUESTIONNAIRE 3.2 — CHEVAL DE HENRY IV 1 POINT

Quelle est la couleur du cheval blanc de Henry IV ?

☐ Noire
 ☐ Jaune
 ☐ Grise
 ☐ Blanche
 ☐ Brune
 ☐ Orange
 ☐ Beige

VÉRIFIER
 AFFICHER LA RÉPONSE
 RÉINITIALISER

Automatiquement, la composition du questionnaire s'opère avec les boutons d'interaction dont les noms sont explicites : l'utilisateur peut cocher les cases qu'il pense être une bonne réponse, vérifier son choix ou réinitialiser le quiz, et enfin afficher les explications relatives aux propositions valides. Pour le moment, il n'y a pas de compteur de points, ni de bloqueur de visualisation des résultats corrects ; c'est au lecteur de jouer le jeu.

`\begin{quizquestion*}<{displ.}>[<{pos.}>]{<{correct}>}{<{wrong}>}{<{opt. title}>}{<{dimx,dimy}>}<{expl.}>`

On doit aussi noter que la version étoilée de l'environnement `quizquestion*` offre des cercles à cocher au lieu de carrés pour la version sans étoile. En fait, cela correspond à une tradition en IHM — Interface humain-machine — qui veut que lorsque plusieurs choix ou ici réponses sont possibles, les propositions sont affublées d'un carré à cocher (*check box*) alors que dans le cas d'une seule réponse envisageable c'est un cercle à cocher (*radio button*). En outre, c'est pour cela que la syntaxe n'accepte qu'une seule proposition correcte dans ce dernier cas.

3.3 Options linguistiques

Les conventions de langue varient. Évidemment, les mots qui désignent les points et les intitulés de boutons sont différents d'un langage à l'autre, mais également les

séparateurs de décimales des nombres. On peut, là encore, se référer à l'extension **assignpoints**, mais ici trois options de langue sont également possibles : anglais (par défaut), français et allemand.

L'option linguistique est assez logiquement activée par le nom de la langue de composition du document :

- `\usepackage{texjazz-assignpoints}` → anglais par défaut;
- `\usepackage[french]{texjazz-assignpoints}` → français;
- `\usepackage[german]{texjazz-assignpoints}` → allemand.

3.4 Options additionnelles des environnements

La rédaction d'exercice peut parfois s'avérer fastidieuse, sur le fond comme sur la forme. Aussi, afin de se constituer un vivier de problèmes à résoudre et de QCM à remplir ou à partager avec des collègues, il est pratique de les dissocier du document principal en les enregistrant par eux-mêmes dans un répertoire approprié.

`\begin{exercise}[<key-value options>]`

`\begin{quiz}[<key-value options>]`

storing = `true|false`

Par défaut : **true**

L'extension **askreply** inclut l'option **storing=true/false** qui, par défaut est activée. Deux répertoires sont automatiquement créés : « **Exercices-<jobname>** » et « **Quizzes-<jobname>** » pour accueillir d'une part, les exercices et leurs solutions et, d'autre part, les questionnaires à choix multiples.

Les enregistrements comportent deux types de fichiers, ceux intitulés **<jobname>-<environment>-body-<no>.ltx** et ceux nommés **<jobname>-<environment>-<nb>.env**. Les premiers représentent le code \LaTeX du corps de l'environnement concerné et les seconds sont constitués de l'ensemble de l'environnement — le corps de l'environnement est inséré dans l'environnement `\begin{env}...end{env}` — et sont prêts à être incorporés dans un autre document.

display = `true|false`

Par défaut : **true**

Dans la même veine que l'enregistrement, on peut aller piocher dans une collection d'exercices ou de questionnaires à choix multiples déjà saisis, mais ne pas vouloir immédiatement les dévoiler dans un document. L'option **display=true/false** est là pour ce faire. Elle permet la saisie d'exercice, quiz ou solution pour préparer un document final en différant leur affichage.

title = `<optional title>`

(initialement vide)

Comme précédemment évoqué, les environnements d'exercices et de quiz peuvent comporter un titre de manière optionnelle.

before skip = `<length>`

Par défaut : **6pt**

after skip = `<length>`

Par défaut : **6pt**

Enfin, deux autres options permettent de contrôler les espaces verticales, juste avant et juste après un environnement d'exercice, de quiz ou de solution, à savoir : **before skip=<length>** et **after skip=<length>**. Par souci d'harmonie et de simplicité, les noms des clefs sont repris de la syntaxe de l'extension **tcolorbox**.

Le traitement des environnements de solution diffère un peu. Les options d'enregistrement (**storing**) et d'affichage (**display**) restent identiques, mais bénéficient d'un champ additionnel relatif à son numéro d'identification.

`\begin{solution}[{key-value options}]`

`ID =` *<exercise number>* (initialement vide)

Comme déjà mentionné au §3.1, si il y a une discontinuité entre les énoncés d'exercices et leur solution, il faut indiquer explicitement à quel exercice correspond la solution. Sinon, la numérotation s'incrémente d'une unité par rapport à la dernière solution. C'est aussi le cas après avoir « réinitialisé » les solutions.

4 Copyright et licence

Copyright © 2020-2021 ejazz.

This work is part of the T_EXjazz bundle and may be distributed and/or modified under the conditions of the LaTeX Project Public License, either version 1.3 of this license or (at your option) any later version. The latest version of this license is available at <http://www.latex-project.org/lppl.txt> and version 1.3 or later is part of all distributions of LaTeX version 2005/12/01 or later.

This work has the LPPL maintenance status 'maintained'.

The Current Maintainer of this work is ejazz.

This work consists of the files:

'askreply.sty' and 'askreply[-fr].tex'

5 Historique des versions

2021/02/12 — **vo.1h**

Updating French documentation package and harmonizing the release of T_EXjazz bundle.

2021/01/14 — **vo.1g**

Updating package and French documentation class (new "known bug" and "version changes" sections with 'xltabular' package).

2021/01/12 — **vo.1f**

Cleaning up the source code and updating the French documentation (new T_EXjazz documentation class).

2021/01/08 — **vo.1e**

Bug layout correction (introducing a test about number of lines in the environment, but space control with empty contents remains buggy) and updating French documentation.

2021/01/02 — **vo.1d**

Cleaning up the source code and updating French documentation.

2021/01/01 — **vo.1c**

New French documentation.

2020/12/08— **vo.1b**

Cleaning up the source code.

2020/03/20— **vo.1a**

First release based on ‘**tcolorbox**’ package and PGF/TikZ layers. It has been thought as a companion package to ‘**assignpoints**’ package and propose efficient quiz layout by mean of OCG/OCMG.

6 Commentaires circonstanciés (pour mémoire)

In order to solve issues in the writing of this package, some snippets of code have been searched and borrowed to advanced users answers on the [TeX.SX Website](https://tex.stackexchange.com/) — the author of this package is a beginner in \LaTeX packages writing and still not aware with all the subtleties of the internals. The different possible approaches and references are given in this section as a reminder.

6.1 Capturing system commands

The aim is to create new directories for storing exercises, solutions and quizzes. To interact with system commands (shell/bash under Unices), one must use the “shell-escape option” for \LaTeX to be able to create the directories if not already present. For this task, the Enrico Gregorio’s proposal is used, see:

[https://tex.stackexchange.com/questions/16790/\[...\]](https://tex.stackexchange.com/questions/16790/[...])

[...]write18-capturing-shell-script-output-as-command-variable/

Note that this snippet is taken “as is”, because the package author is not yet comfortable with \LaTeX 3 syntax. It is also the case for some other snippets given in the sections below.

With respect to the ‘**ifplatform**’ package to detect the operating system, the presence of these directories is tested and recorded in a command. According to this variable `\status`, the directories are created or not.

```
\ExplSyntaxOn
\NewDocumentCommand{\captureshell}{ s o m }
{
  \askreply_captureshell:Ne \l__askreply_captureshell_out_tl { #3 }
  \IfBooleanT { #1 }
  { % we may need to stringify the result
    \tl_set:Nx \l__askreply_captureshell_out_tl
      { \tl_to_str:N \l__askreply_captureshell_out_tl }
  }
  \IfNoValueTF { #2 }
  {
    \tl_use:N \l__askreply_captureshell_out_tl
  }
  {
    \tl_set_eq:NN #2 \l__askreply_captureshell_out_tl
  }
}
```

```

}
}
\tl_new:N \l__askreply_captureshell_out_tl
\cs_new_protected:Nn \askreply_captureshell:Nn
{
  \sys_get_shell:nnN { #2 } { #1 }
  \tl_trim_spaces:N #1 % remove leading and trailing spaces
}
\cs_generate_variant:Nn \askreply_captureshell:Nn { Ne }
\ExplSyntaxOff
\iflinux
  \typeout{*** The Operating System is a \linuxname\space box ***}
  \captureshell*[\dirstatus][[-d ./Exercises-\jobname/ ] && echo 'Existing' || echo 'Missing']]
  \ifdefstring{\dirstatus}{Existing}%
    {\typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' already exists.}}%
    {\ShellEscape{mkdir Exercises-\jobname}}
    \typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' has been created.}}
  \captureshell*[\dirstatus][[-d ./Quizzes-\jobname/ ] && echo 'Existing' || echo 'Missing']]
  \ifdefstring{\dirstatus}{Existing}%
    {\typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' already exists.}}%
    {\ShellEscape{mkdir Quizzes-\jobname}}
    \typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' has been created.}}
\fi

\newcommand{\exercisedir}{Exercises-\jobname/}
\newcommand{\quizzesdir}{Quizzes-\jobname/}

```

6.2 Verbatim file/environment with options

After creating directories, it is time to store the exercises/solutions and quizzes. All these files are verbatim copies of each environments (with of course also their “subenvironments”). Because this package store both the \LaTeX core of the environments (`.ltx` extension) and each independent files (`.env` extension), we need to have verbatim copies of the environments. The first one (`.ltx`) to display the environment in the document, and the second one to store (`.env`) all environments for further treatment (copying, transferring, etc.).

Based on the ‘`fancyverb`’ package two types of files are defined, firstly by mean of a new verbatim environment, and secondly by adding the beginning and ending syntax for each environment with the help of the ‘`catchfile`’ package. See:

[https://tex.stackexchange.com/questions/219996/\[...\]](https://tex.stackexchange.com/questions/219996/[...])

[...]writing-environments-out-to-files-and-prependding-appending-additional-code

The issue here comes from the fact that the traditional way of managing key-value options (‘`keyval`’, ‘`pgfkeys`’, ect.) with verbatim contents can’t be solved without a workaround if one wants to pass optional arguments ; optional arguments are considered as verbatim inputs and \LaTeX clashes. The exercise environment is taken as an exemple, but in the principle, are also applied to quiz and solution. The actual problem and its solution are given by the first link below. For the record, several

other links are proposed about the sujet. See:

- ▶ [https://tex.stackexchange.com/questions/9035/\[...\]](https://tex.stackexchange.com/questions/9035/[...])
[...][how-to-pass-an-optional-argument-to-an-environment-with-verbatim-content](#)
- ▶ [https://tex.stackexchange.com/questions/486148/\[...\]](https://tex.stackexchange.com/questions/486148/[...])
[...][avoid-passing-an-empty-optional-argument-an-environment-with-verbatim-content](#)
- ▶ [https://tex.stackexchange.com/questions/109030/\[...\]](https://tex.stackexchange.com/questions/109030/[...])
[...][optional-arguments-in-verbatim-environments](#)
- ▶ [https://tex.stackexchange.com/questions/108897/\[...\]](https://tex.stackexchange.com/questions/108897/[...])
[...][verbatim-like-environment-with-optional-arguments-poorly-behaved](#)
- ▶ [https://tex.stackexchange.com/questions/527895/\[...\]](https://tex.stackexchange.com/questions/527895/[...])
[...][environment-with-optional-argument-based-on-verbatim-causes-strange-error](#)
- ▶ [https://tex.stackexchange.com/questions/487828/\[...\]](https://tex.stackexchange.com/questions/487828/[...])
[...][what-is-the-maximum-limit-of-elements-in-a-list-expl3-xparse](#)
- ▶ [https://tex.stackexchange.com/questions/20957/\[...\]](https://tex.stackexchange.com/questions/20957/[...])
[...][how-to-use-a-write-command-inside-a-newenvironment](#)
- ▶ [https://tex.stackexchange.com/questions/113906/\[...\]](https://tex.stackexchange.com/questions/113906/[...])
[...][format-a-verbatim-paragraph](#)

One has to change catcodes at the beginning of the environment and paid attention to report the actual beginning of the environment after options treatments. See explanations of @T.H and Hendrik Vogt in this [link](#) on TeX.SX.

```
\NewDocumentEnvironment{exercise}{ }{% Changing the catcodes to read options (EOL ^M)
  \catcode`\^^M=\active
  \@ifnextchar{%
    {\catcode`\^^M=5 \exercise@start}
    {\catcode`\^^M=5 \exercise@start[]}]
  }{%
    \endVerbatimOut%
    ...
  }
\def\exercise@start[#1]{% Actual beginning of the environment
  \pgfkeys{/askreply/.cd, #1}% Key-value options
  ...
\def\askreply@outfilename{%
  \exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
  \VerbatimOut{\askreply@outfilename}%
}
```

6.3 Background TikZ layer through pages

Because nested ‘tcolorboxes’ are only breakable for the first level, even with the ‘enforce breakable’ option, one must find a different strategy. The subenvironments like subexercise, subsolution or quizquestion have to be breakable too. Thus the simplest way to achieve this goal is to consider the first level boxes (exercise, solution and quiz) as a background for the other ‘tcolorbox’ boxes. This can be done by mean of PGF/TikZ drawing tool and the ‘zref’ extended system cross-referencing tool (in particular the **zref-abspos** module/package which gives the absolute coordinates on

the page). To solve the issue, the `tikzpagenodes` package is also of practical use.

The effective way of doing is inspired by a Martin Scharrer's non official package named '`tikzpagelayer`', which is no more available (see source code and links below):

- ▶ [https://tex.stackexchange.com/questions/377161/\[...\]the-current-state-of-the-art-tikz-underliner/](https://tex.stackexchange.com/questions/377161/[...]the-current-state-of-the-art-tikz-underliner/)
- ▶ [https://tex.stackexchange.com/questions/334528/\[...\]how-to-neatly-correctly-underline-with-a-tikz-rectangle](https://tex.stackexchange.com/questions/334528/[...]how-to-neatly-correctly-underline-with-a-tikz-rectangle)
- ▶ <https://tex.stackexchange.com/questions/335232/stacking-lengths-and-pop-them-off>

6.4 OCG/OCMG

6.5 Custom tooltips (margin/foreground)

6.6 Known bugs

2021/01/14—v0.1g		Status	Priority
Sometimes, the TikZ baground end the tcolorbox title of an exercise (resp. solution and quiz) does not fit correctly. On has to input manually some vertical spaces randomly.	FIX ME	Urgent	
2021/01/14—v0.1g		Status	Priority
If there is a page break inside the <code>quizquestion</code> environment, the reset button and its function only reset the second page proposals.	FIX ME	Urgent	
2021/01/14—v0.1g		Status	Priority
An empty first line within an exercise or a solution leads to spurious vertical space (why?); For example beginning by a subexercise or a subsolution. Workaround: adding a short sentence solves the issue, but it is not satisfying.	FIX ME	Urgent	

7 Implémentation

On one hand, the lines 1–71 have been omitted in the following code. They only repeat the license statement which has already been mentioned in section 4. On the over hand, the specific macros belonging to this package are highlighted in blue, both those for the user interface and for internal control sequences. Numbers, options, conditionals, lengths, counters, external package names and commands are left in black. \TeX , \LaTeX or programming packages commands (like '`etoolbox`', '`xparse`' or PGF/TikZ for graphic tools) are in bold purple.

```

71 \NeedsTeXFormat{LaTeX2e}
72 \ProvidesPackage{texjazz-askreply}%
73 [2021/01/14 v0.1g - Managing exercises/quizzes and their solutions/answers]
74

```

```

75 %-- Loading necessary utilities
76 %-----
77
78 \RequirePackage{xparse}% LaTeX3 syntax parser for LaTeX2e to define advanced commands/environments
79 \RequirePackage{etoolbox}% Swiss knife!
80 \RequirePackage{pgfkeys}% Key-value options management
81
82 \RequirePackage{ifplatform}% Check operating system
83 \RequirePackage{shellesc}% Access system commands from LaTeX (--shell-escape option is needed)
84 \RequirePackage{calc}% Utilities to calculate and length measuring
85
86 \RequirePackage{catchfile}% Managing files in macros
87 \RequirePackage{fancyvrb}% Enhanced verbatim environments
88
89 \RequirePackage{xcolor}% Color settings for layout cosmetics
90 \RequirePackage{tikz}% Graphics amazing tool
91 \usetikzlibrary{backgrounds, calc, fpu, chains, fit, positioning, shapes, shadings}
92 \RequirePackage{atbegshi}% Hooks inserting for code executed before the page shipped out
93 \RequirePackage{zref-abspos}% Making positions on a page available (references)
94 \RequirePackage{tikzpagenodes}% Extended page nodes
95 \RequirePackage{tcolorbox}% Fancy efficient coloured boxes (loads needed TikZ libraries)
96 \tcbuselibrary{breakable, fitting, raster, skins, theorems, xparse, hooks}
97 \RequirePackage{fontawesome5}% Nice and useful symbols
98
99 \RequirePackage{pdfbase}[2017/03/16]% Companion package to ocgx2
100 \RequirePackage{ocgbase}% Companion package to ocgx2
101 \RequirePackage{tikz}[ocgx2]% Awesome package used for quizzes extended OCG/OCMD contents
102
103 \RequirePackage{marginnote}% Managing margin elements
104
105 %- Wrong page reference (correct number, but wrong link), it's normal, one must add \phantomsection:
106 %- https://tex.stackexchange.com/questions/49061/incorrect-target-of-label-link-produced-by-hyperref
107 %- https://tex.stackexchange.com/questions/88468/wrong-page-with-pageref-if-using-thmtools
108 \@ifpackageloaded{hyperref}{}{\RequirePackage{hyperref}}% Hyperref package is needed
109
110 %-- Options
111 %-----
112
113 \newbool{askreply@usefrenchlanguage}
114 \newbool{askreply@usegermanlanguage}
115
116 \DeclareOption{french}{%
117   \booltrue{askreply@usefrenchlanguage}%
118 }
119 \DeclareOption{german}{% German conventions seem to be close to French ones
120   \booltrue{askreply@usegermanlanguage}%
121 }
122
123 \DeclareOption*{% This package does not have any other options

```

```

124 \PackageWarning{askreply}{Unknown option '\CurrentOption'}
125 }
126 \ProcessOptions\relax%
127
128 %-- Checking/creating storage directories for exercises/solutions and quizzes/answers
129 %-----
130
131 %- From: https://tex.stackexchange.com/questions/16790/\[...\]
132 %- [...]write18-capturing-shell-script-output-as-command-variable/
133 \ExplSyntaxOn
134 \NewDocumentCommand{\captureshell}{ s o m }
135 {
136   \askreply_captureshell:Ne \l__askreply_captureshell_out_tl { #3 }
137   \IfBooleanT { #1 }
138     {% we may need to stringify the result
139     \tl_set:Nx \l__askreply_captureshell_out_tl
140       { \tl_to_str:N \l__askreply_captureshell_out_tl }
141     }
142   \IfNoValueTF { #2 }
143   {
144     \tl_use:N \l__askreply_captureshell_out_tl
145   }
146   {
147     \tl_set_eq:NN #2 \l__askreply_captureshell_out_tl
148   }
149 }
150 \tl_new:N \l__askreply_captureshell_out_tl
151 \cs_new_protected:Nn \askreply_captureshell:Nn
152 {
153   \sys_get_shell:nnN { #2 } { } #1
154   \tl_trim_spaces:N #1 % remove leading and trailing spaces
155 }
156 \cs_generate_variant:Nn \askreply_captureshell:Nn { Ne }
157 \ExplSyntaxOff
158
159 \iflinux
160   \typeout{*** The Operating System is a \linuxname\space box ***}
161   \captureshell*[\dirstatus]{[ -d ./Exercises-\jobname/ ] && echo 'Existing' || echo 'Missing'}
162   \ifdefstring{\dirstatus}{Existing}%
163     {\typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' already exists.}}%
164     {\ShellEscape{mkdir Exercises-\jobname}
165      \typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' has been created.}}
166   \captureshell*[\dirstatus]{[ -d ./Quizzes-\jobname/ ] && echo 'Existing' || echo 'Missing'}
167   \ifdefstring{\dirstatus}{Existing}%
168     {\typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' already exists.}}%
169     {\ShellEscape{mkdir Quizzes-\jobname}
170      \typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' has been created.}}
171   %\captureshell*[\dirstatus]{[ -d ./Solutions-\jobname/ ] && echo 'Existing' || echo 'Missing'}
172   %\ifdefstring{\dirstatus}{Existing}%

```

```

173 % {\message{*** \string\jobname.tex' *** Directory `Solutions' already exists.}}%
174 % {\ShellEscape{mkdir Solutions-\jobname}}
175 \fi
176 \ifmacosx
177 \typeout{*** The Operating System is a \macosxname\space box ***}
178 \captureshell*[\dirstatus]{[ -d ./Exercises-\jobname/ ] && echo 'Existing' || echo 'Missing'}
179 \ifdefstring{\dirstatus}{Existing}%
180 {\typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' already exists.}}%
181 {\ShellEscape{mkdir Exercises-\jobname}}
182 \typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' has been created.}}
183 \captureshell*[\dirstatus]{[ -d ./Quizzes-\jobname/ ] && echo 'Existing' || echo 'Missing'}
184 \ifdefstring{\dirstatus}{Existing}%
185 {\typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' already exists.}}%
186 {\ShellEscape{mkdir Quizzes-\jobname}}
187 \typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' has been created.}}
188 \fi
189 \ifwindows
190 \message{*** The Operating System is \windowsname\space ***}
191 % To be continued... But how? We don't know Windows commands. Is the following correct?
192 \captureshell*[\dirstatus]{IF exist Exercises-\jobname (echo Existing) ELSE (echo Missing)}
193 \ifdefstring{\dirstatus}{Existing}%
194 {\typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' already exists.}}%
195 {\ShellEscape{mkdir Exercises-\jobname}}
196 \typeout{*** \string\jobname.tex' *** Directory `Exercises-\jobname' has been created.}}
197 \captureshell*[\dirstatus]{IF exist Quizzes-\jobname (echo Existing) ELSE (echo Missing)}
198 \ifdefstring{\dirstatus}{Existing}%
199 {\typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' already exists.}}%
200 {\ShellEscape{mkdir Exercises-\jobname}}
201 \typeout{*** \string\jobname.tex' *** Directory `Quizzes-\jobname' has been created.}}
202 \fi
203
204 \newcommand{\exercisedir}{Exercises-\jobname/}
205 \newcommand{\quizzesdir}{Quizzes-\jobname/}
206
207 %-- Setting lengths, colors, commands and macros
208 %-----
209
210 %- If \lightbf is defined OK (e.g. medium bold or regular if light font), else \textbf{}
211 \ifcsdef{lightbf}{}{\let\lightbf\textbf}
212
213 %- Colors definitions
214 \definecolor{askreplycolorenvbackground}{gray}{0.95}
215 \definecolor{askreplydarkelectricblue}{RGB}{83, 104, 120}% HTML: #536878 - CMYK: 31, 13, 0, 53
216 \definecolor{askreplyredbrown}{RGB}{153, 25, 25}% #991919ff
217 \definecolor{askreplyteal}{RGB}{0, 128, 128}% medium-saturated blue-green
218 \definecolor{askreplybuttongray}{RGB}{200, 200, 200}
219 \colorlet{askreplyfirstcolor}{askreplydarkelectricblue}
220 \colorlet{askreplysecondcolor}{askreplyredbrown}
221 \colorlet{askreplythirdcolor}{askreplyteal}

```

```

222
223 %- Boxes standard lengths
224 \newlength{\askreplyboxmargins}
225 \setlength{\askreplyboxmargins}{8pt}%24pt
226 \newlength{\askreplyboxvsep}
227 \setlength{\askreplyboxvsep}{6pt}
228 \newlength{\askreplyboxvskip}
229 \setlength{\askreplyboxvskip}{4pt}
230 \newlength{\askreplyboxrule}
231 \setlength{\askreplyboxrule}{0.6pt}
232 \newlength{\askreplyboxarc}
233 \setlength{\askreplyboxarc}{4pt}
234 \newlength{\askreplyshadingradius}
235 \setlength{\askreplyshadingradius}{1.8\baselineskip}
236
237 \newlength{\askreplyparindent}% Because sometimes using \parindent is not effective: WHY?
238 %\setlength{\askreplyparindent}{\parindent}
239 \setlength{\askreplyparindent}{0pt}
240
241 %\newcommand{\tcbphantom}{\vspace*{\dimexpr-\baselineskip-\dp\strutbox\relax}\vphantom{Hg}}
242 \newcommand{\tcbphantom}{\vspace*{-\dp\strutbox}\vphantom{Hg}}
243
244 %- Configuring itemize and enumerate lists (vertical and horizontal skips)
245 \newlength\askreplyitemlabelwidth
246 \newlength\askreplyitemindent
247
248 \ifbool{askreply@usefrenchlanguage}{% Adapted from French-Babel
249   \newcommand*{\askreplyitemlabel}{\textendash} % ou \textendash (tiret plus court)
250   \settowidth{\askreplyitemlabelwidth}{\askreplyitemlabel}
251   \setlength{\askreplyitemindent}{\parindent}
252   %\addtolength{\askreplyitemindent}{\askreplyitemlabelwidth}
253   %\addtolength{\askreplyitemindent}{\labelsep}
254 }{
255   \newcommand*{\askreplyitemlabel}{\tiny\normalfont\faCircle}
256   \settowidth{\askreplyitemlabelwidth}{\askreplyitemlabel}
257   \setlength{\askreplyitemindent}{\parindent}
258   \addtolength{\askreplyitemindent}{\askreplyitemlabelwidth}
259   \addtolength{\askreplyitemindent}{\labelsep}
260 }
261
262 %- For an unknown reason, we failed to configure list environments with the 'enumitem' package
263 %- inside the TikZ box (issue with \hsize/\linewidth?). A workaround is to put the list environment
264 %- into a tcolorbox (see below exercise/quiz def.) or a minipage (avoid "minipage" environment:
265 %- it is not breakable!). Breakable lists are fine inside a TikZ box, but take care that they are
266 %- not breakable inside a "tcolorbox" (here subexercise, and so on...)
267 %- For the moment being, we leave 'enumitem' package and only set the things for French.
268
269 %-- Customising exercise/quiz name (easily overwritten or deleted by main class or other packages)
270 %-

```

```

271
272 \ifbool{askreply@usefrenchlanguage}{%
273   \providecommand{\exercisename}{Exercice}
274   \providecommand{\exercisemenocap}{exercice}
275   %\providecommand{\quizname}{Quiz}
276   \providecommand{\quizname}{Questionnaire}% Maybe better, but Quiz is now current, mostly with MCQ
277   \providecommand{\solutionname}{Solution}
278   \providecommand{\listexercisename}{Liste des exercices}
279   \providecommand{\listquizname}{Liste des questionnaires}
280   \newcommand*{\quizverifname}{Vérifier}
281   \newcommand*{\quizresetname}{Réinitialiser}
282   \newcommand*{\quizselectname}{Tout sélectionner}
283   \newcommand*{\quizshowanswername}{Afficher la réponse}
284   \newcommand*{\quizhideanswername}{Masquer la réponse}
285   \newcommand*{\quizrecordname}{Enregistrer}
286   \newcommand*{\quizexplanationname}{Explications}
287   \newcommand*{\quiztrialnumbername}{Nombre d'essai : }
288 }{%
289 \ifbool{askreply@usegermanlanguage}{%
290   \providecommand{\exercisename}{Ausübung}% Correct?
291   \providecommand{\exercisemenocap}{Ausübung}
292   \providecommand{\quizname}{Quiz}% Correct?
293   \providecommand{\solutionname}{Lösung}% Correct?
294   \providecommand{\listexercisename}{List of Exercises}
295   \providecommand{\listquizname}{List of Quizzes}
296   \newcommand*{\quizverifname}{Verify}
297   \newcommand*{\quizresetname}{Reset}
298   \newcommand*{\quizselectname}{Select all}
299   \newcommand*{\quizshowanswername}{Show answer}
300   \newcommand*{\quizhideanswername}{Hide answer}
301   \newcommand*{\quizrecordname}{Record}
302   \newcommand*{\quizexplanationname}{Explanations}
303   \newcommand*{\quiztrialnumbername}{Number of trial: }
304 }{%
305   \providecommand{\exercisename}{Exercise}
306   \providecommand{\exercisemenocap}{exercise}
307   \providecommand{\quizname}{Quiz}
308   \providecommand{\solutionname}{Solution}
309   \providecommand{\listexercisename}{List of Exercises}
310   \providecommand{\listquizname}{List of Quizzes}
311   \newcommand*{\quizverifname}{Verify}
312   \newcommand*{\quizresetname}{Reset}
313   \newcommand*{\quizselectname}{Select all}
314   \newcommand*{\quizshowanswername}{Show answer}
315   \newcommand*{\quizhideanswername}{Hide answer}
316   \newcommand*{\quizrecordname}{Record}
317   \newcommand*{\quizexplanationname}{Explanations}
318   \newcommand*{\quiztrialnumbername}{Number of trial: }
319 }%

```

```

320 }
321
322 %-- File writing management (as "verbatim.sty" way of doing)
323 %-----
324
325 %- Defining verbatim way to store contents in a file (stolen to `tcolorbox' package)
326 \newwrite\askreply@out% Not in the commands below to avoid "No room for a new \write" error!!!
327
328 %- From tcolorbox package
329 \def\askreplyverbatimwrite#1{%
330   \@bsphack
331   \immediate\openout\askreply@out #1
332   \let\do\@makeother\dospecials
333   \catcode`\^^M\active \catcode`\^^I=12
334   \def\verbatim@processline{%
335     \immediate\write\askreply@out
336     {\the\verbatim@line}}%
337   \verbatim@start}%
338
339 \def\endaskreplyverbatimwrite{%
340   \immediate\closeout\askreply@out
341   \@esphack%
342 }
343
344 %- From: https://tex.stackexchange.com/questions/219996/\[...\]
345 %-      [...]writing-environments-out-to-files-and-prepending-appending-additional-code/
346 \def\askreplyverbatimpreapp{\FV@Environment{}{\askreplyverbatimpreapp}}
347
348 %- Write #2 before and #3 after environment contents
349 \def\FVB@askreplyverbatimpreapp#1#2#3{%
350   \@bsphack
351   \begingroup
352     \FV@UseKeyValues
353     \FV@DefineWhiteSpace
354     \def\FV@Space{\space}%
355     \FV@DefineTabOut
356     \def\FV@ProcessLine{\immediate\write\FV@OutFile}%
357     \immediate\openout\FV@OutFile #1\relax
358     % Added next 2 lines
359     \immediate\write\FV@OutFile{#2}%
360     \def\FV@appendline{#3}%
361     \let\FV@FontScanPrep\relax
362     \let\@noligs\relax
363     \FV@Scan}
364
365 \def\FVE@askreplyverbatimpreapp{%
366   % Added next line
367   \immediate\write\FV@OutFile{\FV@appendline}%
368   \immediate\closeout\FV@OutFile\endgroup\@esphack}

```

```

369
370 \DefineVerbatimEnvironment{askreplyverbatimpreapp}{askreplyverbatimpreapp}{}
371
372 \NewDocumentCommand{\askreply@filecopytoenv}{ m m m m G{} }{%
373   %- Usage - #1 = <src-file>, #2 = <target-file>,
374   %-          #3 = <prepend-stuff>, #4 = <append-stuff>, #5 = [<env-options>]
375   %- Reset the target file to empty (not to add the things twice),
376   %- then process the modifications
377   \IfFileExists{#2}%
378   {\CatchFileDef{\askreply@targetcontent}{#2}{\let\askreply@targetcontent\empty}}{}%
379   \begingroup
380   \IfFileExists{#1}%
381   {\CatchFileDef{\askreply@filecontent}{#1}{%
382     % Keep existing end-of-lines (Original)
383     %\catcode\|=12 \endlinechar=^^J\catcode\endlinechar=12\relax
384     \let\do\makeoother\dospecials% Stuff from verbatim.sty and alike
385     \catcode\^^L\active% What this corresponds to? Line feed?
386     \catcode\^^I=\active% keep tabs? YES!
387     \catcode\ =\active% keep spaces? YES!
388     \catcode\^^M\active% keep end of line? YES
389     }%
390     }%
391     {\let\askreply@filecontent\empty}%
392   \immediate\openout\askreply@out=#2\relax
393   % \newlinechar^^J seems to be LaTeX native end of line
394   % (and ^^M the one of external files? TODO: clarify this!)
395   \ifstrempy{#5}%
396   {\immediate\write\askreply@out{#3^^J\detokenize\expandafter{\askreply@filecontent}#4}}%
397   {\immediate\write\askreply@out{#3#5^^J\detokenize\expandafter{\askreply@filecontent}#4}}%
398   \immediate\closeout\askreply@out
399   \endgroup
400 }
401
402 %-- Defining styles for TikZ and `tcolorbox` boxes
403 %-----
404
405 %- Defining styles for the "first layer" box (TikZ)
406 \tikzset{%
407   askreplyframedbox/.style={%
408     on background layer,
409     draw=askreplyfirstcolor,
410     line width=\askreplyboxrule,
411     fill=askreplycolorenvbackground,
412     rounded corners=\askreplyboxarc,
413   },%
414   askreplyframedtitlebox/.style={%
415     on background layer,
416     fill=askreplyfirstcolor!75!black,
417     rounded corners=\askreplyboxarc,

```



```

418 },
419 }
420
421 \tcbset{askreplybackstageboxtitle/.style={%
422   enhanced,
423   notitle,
424   colback=askreplyfirstcolor!75!black,
425   colframe=askreplyfirstcolor,
426   colupper=white,
427   %fontupper=\normalsize\scshape,
428   arc=\askreplyboxarc,
429   boxsep=2pt, boxrule=0.4pt,
430   left=4pt, right=4pt, top=1.75pt, bottom=1.75pt,
431   sharp corners=south,
432   overlay={%
433     %\node[xshift=(-0.5\envsymbolwidth-4pt)]
434     % at (frame.west) {\textcolor{askreplysecondcolor}{\normalfont\large\envsymbol}};
435     \node[xshift=-10pt] at (frame.west) {% 10pt = 0.5*16pt + 2pt
436       \textcolor{askreplysecondcolor}{\makebox[16pt][c]{\normalfont\large\envsymbol}};
437       \askreply@level@display% Defined below just before the environments definition
438     },
439   before={\par\pagebreak[0]\parindent=0pt},% \parindent=0pt
440   after={\par\vspace*{-2\askreplyboxrule}},
441 }
442 }
443
444 %- Defining styles for the "second layer" (breakabke) boxes: with and without points assignment
445 \tcbset{subexercisepoints/.style={%
446   enhanced,
447   breakable,
448   colback=black!3,
449   colframe=black!30,
450   coltitle=white,%fonttitle=\itshape\scshape,
451   title style={left color=black!65, right color=askreplyfirstcolor!75!black,
452     middle color=askreplyfirstcolor!30!black!75},
453   toptitle=1.0pt, bottomtitle=1.0pt,
454   fontupper=\normalfont,
455   arc=0.5\askreplyboxarc,
456   boxsep=2pt, boxrule=0.4pt,
457   left=4pt, right=4pt, top=4pt, bottom=4pt,
458   title={% Empty versus non-empty subexercise title
459     \iftoggle{assignpoints@checkemptystring}%
460       {\strut\textsf{\textit{\textsc{\lightbf{%
461         \exercisename~\currentexercisenummer.\currentsubexercisenummer}}}}}%
462       {\strut\textsf{\textit{\textsc{\lightbf{%
463         \exercisename~\currentexercisenummer.\currentsubexercisenummer}}}}}%
464       \ifbool{askreply@usefrenchlanguage}%
465         {\textsf{\textsc{\textit{\lightbf{%
466           \enspace\textemdash\enspace\currentsubexercisetitle}}}}}%

```

```

467     {\textsf{\textsc{\textit{\lightbf{%
468         \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
469     }%
470     ~\dotfill~\textsf{\textsc{\textit{\lightbf{\footnotesize%
471         \displaypoints*[exercise]{\currentexercisenum.\currentsubexercisenum}}}}}%
472     },
473     before={\par\pagebreak[0]\vspace{4pt}},% No indent because title box
474     after={\par\vspace{2pt},
475     }
476 }
477
478 \tcbset{subsolutionpoints/.style={%
479     enhanced,
480     breakable,
481     colback=black!3, colframe=black!30,
482     coltitle=white, %fonttitle=\itshape\scshape,
483     title style={left color=black!65, right color=askreplysecondcolor!75!black,
484         middle color=askreplysecondcolor!30!black!75},
485     toptitle=1.0pt, bottomtitle=1.0pt,
486     fontupper=\normalfont,
487     arc=0.5\askreplyboxarc,
488     boxsep=2pt, boxrule=0.4pt,
489     left=4pt, right=4pt, top=4pt, bottom=4pt,
490     title={% Empty versus non-empty subexercise title
491         \iftoggle{assignpoints@checkemptystring}%
492             {\strut\textsf{\textit{\textsc{\lightbf{%
493                 \solutionname~\theassignpoints@solutioncount.\theassignpoints@subsolutioncount}}}}}%
494             {\strut\textsf{\textit{\textsc{\lightbf{%
495                 \solutionname~\theassignpoints@solutioncount.\theassignpoints@subsolutioncount}}}}}%
496             \ifbool{askreply@usefrenchlanguage}%
497                 {\textsf{\textsc{\textit{\lightbf{%
498                     \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
499                 {\textsf{\textsc{\textit{\lightbf{%
500                     \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
501             }%
502             ~\dotfill~\textsf{\textsc{\textit{\lightbf{\footnotesize%
503                 \displaypoints*[exercise]{%
504                     \theassignpoints@solutioncount.\theassignpoints@subsolutioncount}}}}}%
505             },
506     before={\par\pagebreak[0]\vspace{4pt}},% \parindent=0pt
507     %after upper=\tcbphantom\vspace*{\dimexpr-\baselineskip+2pt\relax},
508     after={\par\vspace{2pt},
509     }
510 }
511
512 \tcbset{subexercisenopoint/.style={%
513     enhanced,
514     breakable,
515     colback=black!3,

```

```

516 colframe=black!30,
517 coltitle=white, %fonttitle=|itshape|scshape,
518 title style={left color=black!65, right color=askreplyfirstcolor!75!black,
519             middle color=askreplyfirstcolor!30!black!75},
520 toptitle=1.0pt, bottomtitle=1.0pt,
521 fontupper=\normalfont,
522 arc=0.5\askreplyboxarc,
523 boxsep=2pt, boxrule=0.4pt,
524 left=4pt, right=4pt, top=4pt, bottom=4pt,
525 title={% Empty versus non-empty subexercise title
526 \ifdefempty{\currentsubexercisetitle}%
527 {\strut\textsf{\textit{\textsc{\lightbf{\exercisename~\thesubexercise}}}}}%
528 {\strut\textsf{\textit{\textsc{\lightbf{\exercisename~\thesubexercise}}}}}%
529 \ifbool{askreply@usefrenchlanguage}%
530 {\textsf{\textsc{\textit{\lightbf{%
531 \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
532 {\textsf{\textsc{\textit{\lightbf{%
533 \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
534 }%
535 },
536 before={\par\pagebreak[0]\vspace{4pt}},%\parindent=0pt
537 %after upper=\tcbbphantom\vspace*{\dimexpr-\baselineskip+2pt\relax},
538 after=\tcbbphantom\par\vspace*{4pt},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
539 %after=\par,% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
540 }
541 }
542
543 \tcbbset{subsolutionnopoint/.style={%
544 enhanced,
545 breakable,
546 colback=black!30, colframe=black!30,
547 %colbacktitle=black!65,
548 coltitle=white, %fonttitle=|itshape|scshape,
549 title style={left color=black!65, right color=askreplysecondcolor!75!black,
550             middle color=askreplysecondcolor!30!black!75},
551 toptitle=1.0pt, bottomtitle=1.0pt,
552 %fontupper=\normalfont,
553 arc=0.5\askreplyboxarc,
554 boxsep=2pt, boxrule=0.4pt,
555 top=4pt, bottom=4pt,
556 left=4pt, right=4pt,
557 title={% Empty versus non-empty subexercise title
558 \ifdefempty{\currentsubexercisetitle}%
559 {\strut\textsf{\textit{\textsc{\lightbf{\solutionname~\thesubsolution}}}}}%
560 {\strut\textsf{\textit{\textsc{\lightbf{\solutionname~\thesubsolution}}}}}%
561 \ifbool{askreply@usefrenchlanguage}%
562 {\textsf{\textit{\textsc{\lightbf{%
563 \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
564 {\textsf{\textit{\textsc{\lightbf{%

```

```

565 \enspace\textendash\enspace\currentsubexercisetitle}}}}}%
566 }%
567 },
568 before={\par\pagebreak[0]\vspace{4pt}},%\parindent=0pt
569 %after upper=\tcbphantom\vspace*{\dimexpr-\baselineskip+2pt\relax},
570 %after=\tcbphantom\par\vspace*{4pt},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
571 after={\par\vspace{2pt}},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
572 }
573 }
574
575 %-- Defining quizzes specific styles
576 %-----
577
578 \tikzset{%
579   quizbutton/.style={
580     shape=rectangle, rounded corners=1pt,
581     text=black, draw=#1!90,
582     top color=#1!15!white, bottom color=#1!75,
583     inner xsep=6pt, inner ysep=2pt,
584   },
585 }
586
587 \tcbsset{
588   quizquestionpoints/.style={
589     enhanced jigsaw,
590     breakable,% doc. p.377: A tcolorbox inside a tcolorbox is automatically set to be unbreakable
591     %enforce breakable,% If one really wants the inner box to be breakable, use enforce breakable
592     lowerbox=ignored,
593     colframe=black!30,
594     colback=black!2!white,
595     coltitle=askreplyfirstcolor,
596     %fonttitle={\scshape\fontsize{9pt}{10.8pt}\selectfont\titlingspacedfont},
597     fonttitle={\normalfont\itshape\scshape\strut},
598     attach title to upper={\par\vspace{2pt}},
599     toptitle=0.0pt, bottomtitle=0.0pt,
600     fontupper=\normalfont\small,
601     title={% Empty versus non-empty subexercise title
602       \iftoggle{assignpoints@checkemptystring}%
603         {\textsf{\lightbf{\normalsize\quizname~\currentquiznumber.\currentquizquestionnumber}}}%
604         {\textsf{\lightbf{\normalsize\quizname~\currentquiznumber.\currentquizquestionnumber}}}%
605         \textsf{\lightbf{\normalsize\enspace\textendash\enspace\currentquizquestiontitle}}}%
606         ~\dotfill~\textsf{\lightbf{\footnotesize\scshape%
607           \displaypoints*[quiz]{\currentquiznumber.\currentquizquestionnumber}}}%
608       }%
609     },
610     %overlay={%
611       % \node[xshift=.5\marginparsep, yshift=-.5\baselineskip, anchor=west] at (frame.north east)
612       % {\footnotesize\quiztrialnumbername\themcquiztrialnumber};
613     % },

```

```

614 opacityback=0.0,
615 %opacityfill=0.4,
616 boxsep=0pt, boxrule=0.4pt,
617 arc=0.5\askreplyboxarc,
618 left=6pt, right=6pt,
619 top = 4pt, bottom = 4pt,% default=2mm
620 width=\linewidth,
621 %before skip=4pt, after skip=4pt,
622 before={\par\pagebreak[0]\vspace{0pt}},%\parindent=0pt
623 %after upper=\tcbbphantom\vspace*{\dimexpr-\baselineskip+2pt\relax},
624 %after=\tcbbphantom\par\vspace*{4pt},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
625 after={\par\vspace{4pt}},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
626 },
627 }
628
629 \tcbset{
630 quizquestionnopoint/.style={
631   enhanced jigsaw,
632   breakable,% doc. p.377: A tcolorbox inside a tcolorbox is automatically set to be unbreakable
633   %enforce breakable,% If one really wants the inner box to be breakable, use enforce breakable
634   lowerbox=ignored,
635   colframe=black!30,
636   colback=black!2!white,
637   coltitle=askreplyfirstcolor,
638   %fonttitle={\scshape\fontsize{9pt}{10.8pt}\selectfont\titlingspacedfont},
639   fonttitle={\normalfont\itshape\scshape\strut},
640   attach title to upper={\par\vspace{2pt}},
641   toptitle=0.0pt, bottomtitle=0.0pt,
642   fontupper=\normalfont\small,
643   title={% Empty versus non-empty quizquestion title
644     \ifdefempty{\currentquizquestiontitle}%
645       {\strut\textsf{\lightbf{\quizname~\thequizquestion}}}%
646       {\strut\textsf{\lightbf{\quizname~\thequizquestion}}}%
647       \textsf{\lightbf{\enspace\textendash\enspace\currentquizquestiontitle}}}%
648     }%
649   },
650   opacityback=0.0,
651   %opacityfill=0.4,
652   boxsep=0pt, boxrule=0.4pt,
653   arc=0.5\askreplyboxarc,
654   left=6pt, right=6pt,
655   top = 4pt, bottom = 4pt,% default=2mm
656   width=\linewidth,
657   %before skip=4pt, after skip=4pt,
658   before={\par\pagebreak[0]\vspace{0pt}},%\parindent=0pt
659   %after upper=\tcbbphantom\vspace*{\dimexpr-\baselineskip+2pt\relax},
660   %after=\tcbbphantom\par\vspace*{4pt},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
661   after={\par\vspace{4pt}},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
662 },

```

```

663 }
664
665 \tcbset{
666   mcqdemo/.style={
667     enhanced jigsaw,
668     breakable,% doc. p.377: A tcolorbox inside a tcolorbox is automatically set to be unbreakable
669     %enforce breakable,% If one really wants the inner box to be breakable, use enforce breakable
670     lowerbox=ignored,
671     colframe=black!30,
672     colback=black!2!white,
673     coltitle=askreplyfirstcolor,
674     %fonttitle={\scshape\fontsize{9pt}{10.8pt}\selectfont\titlingspacedfont},
675     fonttitle={\normalfont\sffamily\itshape\scshape\strut},
676     attach title to upper={\par\vspace{2pt}},
677     toptitle=0.0pt, bottomtitle=0.0pt,
678     fontupper=\normalfont\small,
679     title={% Empty versus non-empty quizquestion title
680       \ifdefempty{\currentquizquestiontitle}%
681         {\strut\lightbf{\quizname~\thequizdemo.\themcqdemo}}%
682         {\strut\lightbf{\quizname~\@Alph{\thequizdemo}.\themcqdemo}}%
683         \enspace\textmdash\enspace\lightbf{%
684           \currentquizquestiontitle~\dotfill}%~{\small\displaypoints*[quiz]{\thequizdemo.\themcqdemo}}}%
685       }%
686     },
687     opacityback=0.0,
688     %opacityfill=0.4,
689     boxsep=0pt, boxrule=0.4pt,
690     arc=0.5\askreplyboxarc,
691     left=6pt, right=6pt,
692     top = 4pt, bottom = 4pt,% default=2mm
693     width=\linewidth,
694     %before skip=4pt, after skip=4pt,
695     before={\par\pagebreak[0]\vspace{0pt}},%\parindent=0pt
696     %after upper=\tcbphantom\vspace*{\dimexpr-\baselineskip+2pt\relax},
697     %after=\tcbphantom\par\vspace*{4pt},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
698     after={\par\vspace{4pt}},% WHY IT IS NOT THE SAME AS WITH POINTS? STRANGE!
699   },
700 }
701
702 %-- Setting and tweaking useful macros from the unofficial `tikzpagelayer` package (Martin Scharrer)
703 %-----
704
705 %- See: https://tex.stackexchange.com/questions/377161/[...]
706 %- [...]how-to-neatly-correctly-underline-with-a-tikz-rectangle/
707 %- https://tex.stackexchange.com/questions/334528/the-current-state-of-the-art-tikz-underliner/
708 %- Martin Scharrer's original code: https://bitbucket.org/martin_scharrer/tikzpagelayers (dead link)
709
710 \newcommand\tikzpagemark{}
711 \DeclareRobustCommand\tikzpagemark[1]{%

```

```

712 \leavevmode
713 \zsavepos{tikzpagemarkpos-#1}%
714 }
715
716 \def\tpl@addto#1#2{%
717 \begingroup
718 \ifx#1\undefined
719 \global\let#1\empty
720 \else
721 \ifx#1\relax
722 \global\let#1\empty
723 \fi
724 \fi
725 \edef\@tempa{\@thetikzpagemark}%
726 \expandafter\g@addto@macro\expandafter#1\expandafter{%
727 \expandafter\set@tikzpagemark\expandafter{\@tempa}%
728 #2}%
729 }%
730 \endgroup
731 }
732
733 \newenvironment{tikzpagelayer}[2][foreground]{%
734 \stepcounter{tikzpagemark}%
735 \tikzpagelayeron
736 \tikzpagemark{\@thetikzpagemark-begin}%
737 \expandafter\tpl@addto\csname tikzpagelayer@#1@page%
738 \zref@extract{tikzpagemarkpos-\@thetikzpagemark-begin}{abspage}\endcsname{#2}%
739 \edef\endtiktzpagelayer{\noexpand\tikzpagemark{\@thetikzpagemark-end}}%
740 }{}%
741
742 \newcommand{\starttikzpagelayer}[3][foreground]{%
743 \begingroup
744 \tikzpagelayeron
745 \edef\@thetikzpagemark{#2}%
746 \tikzpagemark{\@thetikzpagemark-begin}%
747 \expandafter\tpl@addto\csname tikzpagelayer@#1@page%
748 \zref@extract{tikzpagemarkpos-\@thetikzpagemark-begin}{abspage}\endcsname{#3}%
749 \endgroup
750 }
751
752 \newcommand{\stoptiktzpagelayer}[1]{%
753 \tikzpagemark{@#1-end}%
754 }%
755
756 \def\set@tikzpagemark#1{%
757 \def\@thetikzpagemark{#1}%
758 \edef\tplfirstpage{\zref@extract{tikzpagemarkpos-#1-begin}{abspage}}%
759 \edef\tpllastpage{\zref@extract{tikzpagemarkpos-#1-end}{abspage}}%
760 \coordinate (tplbegin) at

```

```

761 ([shift={(\zposx{tikzpagemarkpos-#1-begin}sp,
762 \zposy{tikzpagemarkpos-#1-begin}sp)}}current page.south west);%
763 \coordinate (tplend) at
764 ([shift={(\zposx{tikzpagemarkpos-#1-end}sp,
765 \zposy{tikzpagemarkpos-#1-end}sp)}}current page.south west);%
766 }
767
768 \newcommand\tplonpage[2][foreground]{%
769 \beginpgfgroup
770 \pgfmathtruncatemacro\@tplpage{#2}%
771 \expandafter\endgroup
772 \expandafter\tpl@addto\csname tikzpagelayer@#1@page\@tplpage\endcsname
773 }
774
775 \newcommand\tplonnextpage[1][foreground]{%
776 \tplonpage[#1]{\@tplnextpage}%
777 }
778
779 \newcommand\tplonlastpage[1][foreground]{%
780 \tplonpage[#1]{\tpllastpage}%
781 }
782
783 \newcommand\tplonmiddlepages[2][foreground]{%
784 \beginpgfgroup
785 \@tempcnta=\tplfirstpage\relax
786 \loop
787 \advance\@tempcnta\@ne
788 \ifnum\@tempcnta<\tpllastpage
789 \tplonpage[#1]{\number\@tempcnta}{#2}%
790 \repeat
791 \endpgfgroup
792 }
793
794 %- During the page `abspage' is one to low
795 \def\@tplnextpage{\c@abspage+2}
796
797 %- In the shipout routine it is correct
798 \def\@@tplnextpage{\c@abspage+1}
799
800 \newcounter{tikzpagemark}
801 \def\@thetikzpagemark{\number\c@tikzpagemark}
802
803 \def\@tikzpagelayeron{%
804 \AtBeginShipoutNext{\tikzpagelayer@atbeginshipout}%
805 \global\let\tikzpagelayeron\relax
806 }
807
808 \AtBeginShipout{\tikzpagelayer@atbeginshipout}%
809 \let\tikzpagelayeron\tikzpagelayeron

```



```

810 \let\tikzpagelayer@background\empty
811 \let\tikzpagelayer@foreground\empty
812
813 \def\tikzpagelayer@atbeginshipout{%
814   \setbox\AtBeginShipoutBox\hbox{%
815     \color@setgroup
816     \let\@tplnextpage\@tplnextpage
817     \begin{tikzpicture}[remember picture]%
818       \path[use as bounding box,every node/.style={},every rectangle node/.style={}]{
819         node[inner sep=0pt,outer sep=0pt] (current page box) {\box\AtBeginShipoutBox};
820       }%
821       % (current page box.north west) rectangle (current page box.south east);
822       \begin{pgfonlayer}{background}
823         \begin{scope}%
824           \csname tikzpagelayer@background@page\number\c@abspage\endcsname
825           \tikzpagelayer@background
826         \end{scope}%
827       \end{pgfonlayer}%
828       \begin{scope}%
829         \csname tikzpagelayer@foreground@page\number\c@abspage\endcsname
830         \tikzpagelayer@foreground
831       \end{scope}%
832     \end{tikzpicture}%
833   \color@endgroup
834 }%
835 \global\let\tikzpagelayer@background\empty
836 \global\let\tikzpagelayer@foreground\empty
837 \global\let\tikzpagelayeron\@tikzpagelayeron
838 }
839
840 \NewDocumentCommand{\@askreplytikzframebox}{ m m }{% Background box for exercises and solutions
841   \begin{scope}[#1]
842     \ifnum\tplfirstpage=\tpllastpage
843       %\node[circle, radius=2pt, fill=yellow]
844       % at ([xshift={(-\askreplyboxmargins-\askreplyparindent+\askreplyboxrule)},
845       % yshift={(\ht\strutbox+1.5\askreplyboxvskip+0.5\askreplyboxrule)}]{tplbegin} {});
846       \path [#1] let
847         \p1 = (tplbegin),
848         \p2 = (tplend),
849         \p3 = (current page text area.north west),
850         \p4 = (current page text area.south east) in
851         (\x4-.5\pgflinewidth,\y1+\ht\strutbox+1.5\askreplyboxvskip+.5\pgflinewidth) --
852         (\x4-.5\pgflinewidth,\y2-\dp\strutbox-1.5\askreplyboxvskip-.5\pgflinewidth) --
853         (\x3+.5\pgflinewidth,
854          \y2-\dp\strutbox-1.5\askreplyboxvskip-.5\pgflinewidth) [rounded corners=false] --
855         (\x3+.5\pgflinewidth,\y1+\ht\strutbox+1.5\askreplyboxvskip+.5\pgflinewidth) -- cycle;
856       \begin{scope}
857         %- Starting with a shading and fading quarter of a circle
858         \node[save path=\shadingstartboxpath,

```

```

859     shape=circular sector,
860     rounded corners=false,
861     outer sep=0pt,
862     circular sector angle=90,
863     shape border uses incircle,
864     shape border rotate=135,%-225,%-135,%-45,%135,%45,
865     anchor=sector center,
866     minimum size=\askreplyshadingradius,
867     xshift={(-\askreplyboxmargins-\askreplyparindent+\askreplyboxrule)},
868     yshift={(\ht\strutbox+1.5\askreplyboxvskip+0.0\askreplyboxrule)},
869   ]
870   (shadingstartbox) at (tplbegin) {};
871   \clip[use path=\shadingstartboxpath];
872   \shade[inner color=#2, outer color=\askreplycolorenvbackground] let %,path fading=fade in
873     \p1=($(shadingstartbox.arc center)-(shadingstartbox.sector center)$),
874     \n1={vecclen(\y1,\x1)} in
875     (shadingstartbox.sector center) circle (\n1);
876   \end{scope}
877   %\begin{scope}
878   % %- Ending with a solution reference (for exercise only, empty for solution)
879   % \node[anchor=east, color=\askreplysecondcolor] at (tplend)
880   %   {\itshape\footnotesize{\normalfont\faSquare}\enspace Solution};
881   %\end{scope}
882 \else
883   \path [#1] let
884     \p1 = (tplbegin),
885     \p3 = (current page text area.north west),
886     \p4 = (current page text area.south east) in
887     (\x3+.5\pgflinewidth,\y4-\dp\strutbox) [rounded corners=false] --
888     (\x3+.5\pgflinewidth,\y1+\ht\strutbox+1.5\askreplyboxvskip+.5\pgflinewidth) -|
889     (\x4-.5\pgflinewidth,\y4-\dp\strutbox);
890   \begin{scope}
891     %- Starting with a shading and fading quarter of a circle
892     \node[save path=\shadingstartboxpath,
893       shape=circular sector,
894       rounded corners=false,
895       outer sep=0pt,
896       circular sector angle=90,
897       shape border uses incircle,
898       shape border rotate=135,%-225,%-135,%-45,%135,%45,
899       anchor=sector center,
900       minimum size=\askreplyshadingradius,
901       xshift={(-\askreplyboxmargins-\askreplyparindent+\askreplyboxrule)},
902       yshift={(\ht\strutbox+1.5\askreplyboxvskip+0.0\askreplyboxrule)},
903     ]
904     (shadingstartbox) at (tplbegin) {};
905     \clip[use path=\shadingstartboxpath];
906     \shade[inner color=#2, outer color=\askreplycolorenvbackground] let %,path fading=fade in
907       \p1=($(shadingstartbox.arc center)-(shadingstartbox.sector center)$),

```

```

908     \n1={veclen(\y1,\x1)} in
909     (shadingstartbox.sector center) circle (\n1);
910 \end{scope}
911 \tplonpage{\tpllastpage}{%
912 \begin{scope} [#1]
913 \path [#1] let
914     \p1 = (tplend),
915     \p3 = (current page text area.north west),
916     \p4 = (current page text area.south east) in
917     (\x3+.5\pgflinewidth,\y3+.5\pgflinewidth) --
918     (\x3+.5\pgflinewidth,\y1-\dp\strutbox-1.5\askreplyboxvskip-.5\pgflinewidth) -|
919     (\x4-.5\pgflinewidth,\y3+.5\pgflinewidth);
920 \end{scope}%
921 }%
922 \tplonmiddlepages{%
923 \begin{scope} [#1]
924 \path [#1,draw=none] let
925     \p1 = (current page text area.north west),
926     \p2 = (current page text area.south east) in
927     (\x1+.5\pgflinewidth,\y1+.5\pgflinewidth) --
928     (\x1+.5\pgflinewidth,\y2-.5\pgflinewidth) --
929     (\x2-.5\pgflinewidth,\y2-.5\pgflinewidth) --
930     (\x2-.5\pgflinewidth,\y1+.5\pgflinewidth) -- cycle;
931 \path [#1] let
932     \p1 = (current page text area.north west),
933     \p2 = (current page text area.south east) in
934     (\x1+.5\pgflinewidth,\y1+.5\pgflinewidth) --
935     (\x1+.5\pgflinewidth,\y2-.5\pgflinewidth) --
936     (\x2-.5\pgflinewidth,\y2-.5\pgflinewidth) --
937     (\x2-.5\pgflinewidth,\y1+.5\pgflinewidth);
938 \end{scope}%
939 }%
940 \fi
941 \end{scope}
942 }
943
944 \NewDocumentCommand{\@askreplytikzquizframebox}{ m }{% Background box for quizzes
945 \begin{scope} [#1]
946 \ifnum\tplfirstpage=\tpllastpage
947     %\node[circle, radius=2pt, fill=yellow]
948     % at ([xshift={(-\askreplyboxmargins-\askreplyparindent+\askreplyboxrule)}],
949     % yshift={(\ht\strutbox+1.5\askreplyboxvskip+0.5\askreplyboxrule)}]tplbegin) {};
950 \path [#1] let
951     \p1 = (tplbegin),
952     \p2 = (tplend),
953     \p3 = (current page text area.north west),
954     \p4 = (current page text area.south east) in
955     (\x4-.5\pgflinewidth,\y1+\ht\strutbox+1.5\askreplyboxvskip+.5\pgflinewidth) --
956     (\x4-.5\pgflinewidth,\y2-\dp\strutbox-1.5\askreplyboxvskip-.5\pgflinewidth) --

```

```

957     (\x3+.5\pgflinewidth,
958     \y2-\dp\strutbox-1.5\askreplyboxvskip-.5\pgflinewidth) [rounded corners=false] --
959     (\x3+.5\pgflinewidth,\y1+\ht\strutbox+1.5\askreplyboxvskip+.5\pgflinewidth) -- cycle;
960 \else
961 \path [#1] let
962     \p1 = (tplbegin),
963     \p3 = (current page text area.north west),
964     \p4 = (current page text area.south east) in
965     (\x3+.5\pgflinewidth,\y4-\dp\strutbox) [rounded corners=false] --
966     (\x3+.5\pgflinewidth,\y1+\ht\strutbox+1.5\askreplyboxvskip+.5\pgflinewidth) -|
967     (\x4-.5\pgflinewidth,\y4-\dp\strutbox);
968 \tplonpage{\tpllastpage}{%
969     \begin{scope} [#1]
970     \path [#1] let
971         \p1 = (tplend),
972         \p3 = (current page text area.north west),
973         \p4 = (current page text area.south east) in
974         (\x3+.5\pgflinewidth,\y3+.5\pgflinewidth) --
975         (\x3+.5\pgflinewidth,\y1-\dp\strutbox-1.5\askreplyboxvskip-.5\pgflinewidth) -|
976         (\x4-.5\pgflinewidth,\y3+.5\pgflinewidth);
977     \end{scope}%
978 }%
979 \tplonmiddlepages{%
980     \begin{scope} [#1]
981     \path [#1,draw=none] let
982         \p1 = (current page text area.north west),
983         \p2 = (current page text area.south east) in
984         (\x1+.5\pgflinewidth,\y1+.5\pgflinewidth) --
985         (\x1+.5\pgflinewidth,\y2-.5\pgflinewidth) --
986         (\x2-.5\pgflinewidth,\y2-.5\pgflinewidth) --
987         (\x2-.5\pgflinewidth,\y1+.5\pgflinewidth) -- cycle;
988     \path [#1] let
989         \p1 = (current page text area.north west),
990         \p2 = (current page text area.south east) in
991         (\x1+.5\pgflinewidth,\y1+.5\pgflinewidth) --
992         (\x1+.5\pgflinewidth,\y2-.5\pgflinewidth) --
993         (\x2-.5\pgflinewidth,\y2-.5\pgflinewidth) --
994         (\x2-.5\pgflinewidth,\y1+.5\pgflinewidth);
995     \end{scope}%
996 }%
997 \fi
998 \end{scope}
999 }
1000
1001 %-- Storing and retrieving stuff macros
1002 %-----
1003
1004 \newcommand{\askreply@storevaluetoaux}[3]{%
1005     % Usage: #1 = prefix - #2 = <env-number> - #3 = <length-name>

```

```

1006 \immediate\write\@auxout{\string\global\string\long\string\@namedef{askreply@#1@#2}{#3}}%
1007 }
1008
1009 \newcommand{\askreply@readvaluefromaux}[2]{%
1010 % Usage: #1 = prefix - #2 = <value-(number)-(text)-(length-without-pt)>
1011 % e.g. \setlength{<length>}{\askreply@readvaluefromaux{\askreply@prefix{#1}}{#2}pt}
1012 \ifcsname askreply@#1@#2\endcsname%
1013 \@nameuse{askreply@#1@#2}%
1014 \else%
1015 \textbf{??}%
1016 \PackageWarning{askreply}%
1017 {Key 'askreply@#1@#2' not found in aux file. Maybe you need to recompile?}%
1018 \fi%
1019 }
1020
1021 \NewDocumentCommand{\getenvtitle}{ O{exercise} m }{%
1022 % Usage - #1 = <env-name>, #2 = <env-number>
1023 \ifstrequal{#1}{exercise}% For the exercise title
1024 {% Storage exists
1025 \ifcsname askreply@exercise@exercisetitle@#2\endcsname%
1026 \renewcommand{\currentexercisetitle}{%
1027 \askreply@readvaluefromaux{exercise}{exercisetitle@#2}}%
1028 \else% Storage is empty or not yet available
1029 \PackageWarning{askreply}%
1030 {Storage key not found in aux file. Maybe you need to recompile?}%
1031 \fi%
1032 }{}%
1033 \ifstrequal{#1}{subexercise}% For the subexercise title
1034 {% Storage exists assignpoints@exercise@subexercisetitle@1.1
1035 \ifcsname askreply@exercise@subexercisetitle@#2\endcsname%
1036 \renewcommand{\currentsubexercisetitle}{%
1037 \askreply@readvaluefromaux{exercise}{subexercisetitle@#2}}%
1038 \else% Storage is empty or not yet available
1039 \PackageWarning{askreply}%
1040 {Storage key not found in aux file. Maybe you need to recompile?}%
1041 \fi%
1042 }{}%
1043 }
1044
1045 \providecommand{\exerciseID}{}
1046 \providecommand{\solutionID}{}
1047 \providecommand{\quizID}{}
1048 \providecommand{\answerID}{}
1049
1050 \NewDocumentCommand{\getenvID}{ O{exercise} m }{%
1051 % Usage - #1 = <env-name>, #2 = <env-number>
1052 \ifstrequal{#1}{exercise}% For the exercise ID
1053 {% Storage exists
1054 \ifcsname askreply@exercise@exerciseID@#2\endcsname%

```

```

1055     \renewcommand{\exerciseID}{%
1056       \askreply@readvaluefromaux{\exercise}{exerciseID@#2}}%
1057   \else% Storage is empty or not yet available
1058     \renewcommand{\exerciseID}{}%
1059   \fi%
1060 }{}%
1061 \ifstrequal{#1}{\solution}% For the solution ID
1062 {% Storage exists
1063   \ifcsname askreply@exercise@solutionID@#2\endcsname%
1064     \renewcommand{\solutionID}{%
1065       \askreply@readvaluefromaux{\exercise}{solutionID@#2}}%
1066   \else% Storage is empty or not yet available
1067     \renewcommand{\solutionID}{}%
1068   \fi%
1069 }{}%
1070 }
1071
1072 %-- Environment counters and symbols
1073 %-----
1074
1075 %\@ifclassloaded{book}{%
1076 %\@ifundefined{chapter}{%
1077   \newcounter{exercise}%
1078   \newcounter{solution}%
1079   \newcounter{solutionnumber}%
1080   \newcounter{quiz}%
1081   \newcounter{answer}%
1082 }{%
1083   % \newcounter{exercise}[chapter]%
1084   % \newcounter{solution}[chapter]%
1085   % \newcounter{quiz}[chapter]%
1086   % \newcounter{answer}[chapter]%
1087 }%
1088
1089 \newcounter{subexercise}[exercise]
1090 \newcounter{subsolution}[solution]
1091 \newcounter{quizquestion}[quiz]
1092 \newcounter{mcqdemo}
1093 \newcounter{quizdemo}
1094 \newcounter{mcqquiztotaldemo}
1095 \newcounter{subanswer}[answer]
1096
1097 \newcounter{mcqproposal}[quizquestion]% Proposal IDs counter to choose within a quiz question
1098 \newcounter{mcqquiztotal}[quizquestion]% Total propositions counter within a quiz question
1099 \newcounter{mcqproposaldemo}[mcqdemo]% Proposal IDs counter to choose within a quiz question demo
1100
1101 \newcounter{mcqtrialnumber}[quizquestion]
1102
1103 % Exercise symbol: \faIcon{feather-alt}} \faPenFancy \faMarker \faQuestion

```

```

1104 % Solution icon: \faLightbulb \faLightbulb[regular] \faUbuntu \faInfo \faInfoCircle
1105
1106 \newcommand{\envsymbol}{}
1107 \newlength{\envsymbolheight}
1108 \newlength{\envsymbolwidth}
1109
1110 %- Setting quiz symbols: designed with the help of the Fontawesome icons packages v.4.6 and v.5.7
1111
1112 \newlength{\quizcheckboxwidth}
1113 \newlength{\quizcheckgap}
1114 \newlength{\quizsymbolwidth}
1115 \newlength{\quizanswerbuttonwidth}
1116
1117 \setlength{\quizcheckgap}{0.5em}
1118 \setlength{\quizsymbolwidth}{10pt}
1119 \setlength{\quizanswerbuttonwidth}{%
1120   \widthof{\scriptsize\lightbf{\textsc{\quizhideanswername}}}%
1121 }%
1122 \addtolength{\quizanswerbuttonwidth}{12pt}% inner 2* xsep button style
1123
1124 % \faCheck width = 10.0 pt; \faTimes width = 7.85pt => same width in a box
1125 \newcommand{\checktick}{%
1126   \makebox[\quizsymbolwidth][c]{%
1127     \textcolor{green!60!black}{\normalfont\normalsize\faCheck}%
1128   }%
1129 }
1130 \newcommand{\crosstick}{%
1131   \makebox[\quizsymbolwidth][c]{%
1132     \textcolor{red!60!black}{\normalfont\normalsize\faTimes}%
1133   }%
1134 }
1135
1136 %-- Setting displaying and recording useful commands
1137 %-----
1138
1139 \newcommand{\phantomtext}{\vspace*{\dimexpr-\baselineskip-\askreplyboxvskip\relax}\phantom{Hg}}
1140
1141 \begingroup%
1142   \catcode`P=12 \catcode`T=12 \lowercase{\endgroup
1143   \def\askreplysplitbefore#1{%
1144     \expandafter\askreply@strip@pt\expandafter\@askreplysplitbefore\the\dimexpr#1PT\relax\@nil
1145   }
1146   \def\askreplyssplitafter#1{%
1147     \expandafter\askreply@strip@pt\expandafter\@askreplyssplitafter\the\dimexpr#1PT\relax\@nil
1148   }
1149   \def\@askreplysplitbefore#1.#2.#3PT\@nil{#1}
1150   \def\@askreplysplitafter#1.#2.#3PT\@nil{#2}
1151   \def\askreply@strip@pt#1#2PT#3\@nil{#1#2..PT\@nil}
1152 } % balance the open brace after \lowercase

```

```

1153
1154 \newcommand\askreplytwodigits[1]{%
1155   \ifnum#1<10 0#1\else #1\fi
1156 }
1157
1158 \newtoggle{askreply@points}
1159 \ifpackageloaded{texjazz-assignpoints}%
1160   {\toggletrue{askreply@points}}{\togglefalse{askreply@points}}
1161
1162
1163 %-----
1164 %-- Defining the different environments with options (PGFKeys and l3keys2e system)
1165 %-----
1166
1167 %-- Managing key-value options of commands (PGFKeys)
1168 %-----
1169
1170 %- https://tex.stackexchange.com/questions/521011/how-is-a-pgf-key-defined/
1171 \newif\ifaskreply@display\askreply@displaytrue %or display/.default=true
1172 \newif\ifaskreply@storing\askreply@storingtrue %or storing/.default=true
1173 \newif\ifaskreply@list\askreply@listtrue %or list/.default=true
1174
1175 \pgfkeys{%
1176   /askreply/.is family, /askreply/.cd,
1177   display/.is if=askreply@display,
1178   %display/.default=true,% DOES NOT WORK! WHY?
1179   storing/.is if=askreply@storing,
1180   %storing/.default=true,% DOES NOT WORK! WHY?
1181   list/.is if=askreply@list,
1182   %list/.default=true,% DOES NOT WORK! WHY?
1183   title/.store in=\askreply@title,
1184   title=,
1185   level/.is choice,
1186   level/basic/.code=\def\askreply@level{basic},
1187   level/intermediate/.code=\def\askreply@level{intermediate},
1188   level/advanced/.code=\def\askreply@level{advanced},
1189   level/.default=\def\askreply@level{},
1190   before skip/.store in=\askreply@beforeskip,
1191   before skip=6pt,
1192   after skip/.store in=\askreply@afterskip,
1193   after skip=6pt,
1194   text color/.store in=\askreply@textcolor,
1195   text color=black,
1196   points/.store in=\askreply@editpoints,
1197   points=,
1198   symbol/.store in=\askreply@envsymbol,
1199   symbol=,
1200   ID/.store in=\askreply@ID,
1201   ID=,

```



```

1202 }
1203
1204 \newenvironment{askreplybox}{%
1205   %\centering%
1206   \list{}{%
1207     \leftmargin\askreplyboxmargins%
1208     \rightmargin\leftmargin%
1209     \listparindent\askreplyparindent%
1210     \itemindent\askreplyparindent%
1211     \parsep\parskip%
1212   }%
1213   \item\relax%
1214 }{\endlist}
1215
1216 %- Box height measurement
1217 \newlength{\askreply@detect@boxheight}
1218 \newtcolorbox{askreply@measurebox}[2][[% From http://tex.stackexchange.com/questions/203194/
1219   blank,%show bounding box, parbox=false,
1220   overlay={\xdef#2{\tcboxheight}},
1221   #1
1222 ]}
1223
1224 %- https://tex.stackexchange.com/questions/428462/\[...\]
1225 %- [...]how-can-i-dynamically-set-the-box-height-to-the-max-height-of-a-group-of-boxes
1226
1227 % Backend boxmaker
1228 %\long\def\askreply@box#1#2#3{%
1229 %   \tikz\node[draw, line width=.4pt, inner sep=2pt,outer sep=0pt,align=left,minimum width=#2,minimum height
1230 %     =#3]
1231 %{\parbox{\dimexpr#2-4pt}{\raggedright\small#1}};}
1232
1233 % User-level boxmaker
1234 %\long\def\nodebox#1#2#3{ABC@box{#1}{#2}{#3}\kern-.4pt}% kern used to horizontally shift boxes back by stroke
1235 %   width of frame
1236
1237 %\newdimen\nodeboxminHT
1238 %\nodeboxminHT=1cm\relax
1239
1240 %\NewEnviron{formrow}{%
1241 %   \leavevmode\unskip\par\sbox{@tempboxa}{\BODY}\nodeboxminHT=\the\ht{@tempboxa}\BODY\ignorespaces}
1242
1243 %-- Generic single and multiple MCQs definitions (OCG/OCMD PDF: `ocgx2` package)
1244 %-----
1245
1246 %- From: https://tex.stackexchange.com/questions/486148/\[...\]
1247 %- [...]avoid-passing-an-empty-optional-argument-an-environment-with-verbatim-content
1248 %- https://tex.stackexchange.com/questions/490706/\[...\]

```

```

1249 %-      [...]ocgx2-verify-and-reset-of-multiple-choice-questions-with-ocgs
1250 %-      https://tex.stackexchange.com/questions/493987/[...]
1251 %-      [...]ocgx2-xparse-expl3-splitting-comma-separated-ocmd-ocgs-lists-of-arguments-for
1252
1253 %-----
1254 %-- ESSENTIAL! ONLY USE A POINT AS OCG SEPARATOR: ERROR WITH COLON AND @ --> WHY? (French spaces?)
1255 %-----
1256
1257 %- Only a step for single solution MCQs: proposal button
1258
1259 \NewDocumentCommand{\quizSingleButton}{m}{% Based on AG's \quizButton command
1260 % Syntax - #1: id choice
1261 % Action on click: toggle myself (choice layer), hide verification layer
1262 \stepcounter{mcqproposal}%
1263 \stepcounter{mcquiztotal}%
1264 \setlength{\quizcheckboxwidth}{\widthof{\faIcon[regular]{circle}}}%
1265 \makebox[\quizcheckboxwidth][c]{%
1266   \%actionsocg{#1}{\verify:\thequizquestion}{\faIcon[regular]{circle}}%
1267   \actionsocg{#1}{\verify.\thequiz.\thequizquestion}{\faIcon[regular]{circle}}%
1268 }%
1269 %\begin{ocg}[radiobtngrp=choice:\thequizquestion]{#1}{#1}{off}% choice layer
1270 \begin{ocg}[radiobtngrp=choice.\thequiz.\thequizquestion]{#1}{#1}{off}% choice layer
1271   \%makebox[\widthof{\faCircleThin}]{\textcolor{green!60!black}{\faCheck}}%
1272   \%makebox[\quizcheckboxwidth]{\textcolor{green!60!black}{\faIcon[solid]{dot-circle}}}%
1273   \hspace*{-\quizcheckboxwidth}%
1274   \makebox[\widthof{\faIcon[regular]{circle}}][c]{\textcolor{green!60!black}{\faDotCircle}}%
1275   \hspace*{-\quizcheckboxwidth}%
1276   \makebox[\quizcheckboxwidth][c]{\textcolor{askreplyfirstcolor}{\faIcon[regular]{circle}}}%
1277 \end{ocg}%
1278 }
1279
1280 \NewDocumentCommand{\quizSingleButtonDemo}{m}{% Based on AG's \quizButton command
1281 % Syntax - #1: id choice
1282 % Action on click: toggle myself (choice layer), hide verification layer
1283 \stepcounter{mcqproposaldemo}%
1284 \stepcounter{mcquiztotaldemo}%
1285 \setlength{\quizcheckboxwidth}{\widthof{\faIcon[regular]{circle}}}%
1286 \makebox[\quizcheckboxwidth][c]{%
1287   \%actionsocg{#1}{\verify:\thequizquestion}{\faIcon[regular]{circle}}%
1288   \actionsocg{#1}{\verify.\thequizdemo.\themcqdemo}{\faIcon[regular]{circle}}%
1289 }%
1290 \begin{ocg}[radiobtngrp=choice.\thequizdemo.\themcqdemo]{#1}{#1}{off}% choice layer
1291   \hspace*{-\quizcheckboxwidth}%
1292   \makebox[\widthof{\faIcon[regular]{circle}}][c]{\textcolor{green!60!black}{\faDotCircle}}%
1293   \hspace*{-\quizcheckboxwidth}%
1294   \makebox[\quizcheckboxwidth][c]{\textcolor{askreplyfirstcolor}{\faIcon[regular]{circle}}}%
1295 \end{ocg}%
1296 }
1297

```

```

1298 %- Defining a proposition for single solution MCQ
1299
1300 \NewDocumentCommand{\mcqproposalSingle}{o m}{%
1301 % Syntax - #1 = more tcbbox options
1302 %           #2 = statement proposal
1303 \begin{tcolorbox}[%
1304 breakable, enhanced,
1305 notitle, colframe=black!60, colback=white,
1306 boxrule=0.2pt, arc=0.4pt, boxsep = 0pt,
1307 left = 4pt, right = 4pt,
1308 top = 4pt, bottom = 4pt,
1309 before skip=4pt, after skip=4pt,
1310 IfValueTF={#1}{#1}{},% More options
1311 ]
1312 \parbox[t]{16pt}{%
1313 \hspace*{2pt}%
1314 %\quizSingleButton{mcqproposalref:\thequizquestion:\themcproposal}
1315 \quizSingleButton{mcqproposalref.\thequiz.\thequizquestion.\themcproposal}
1316 }%
1317 \parbox[t]{\linewidth-16pt}{#2}%
1318 \end{tcolorbox}%
1319 }
1320
1321 \NewDocumentCommand{\mcqproposalSingleDemo}{o m}{%
1322 % Syntax - #1 = more tcbbox options
1323 %           #2 = statement proposal
1324 \begin{tcolorbox}[%
1325 breakable, enhanced,
1326 notitle, colframe=black!60, colback=white,
1327 boxrule=0.2pt, arc=0.4pt, boxsep = 0pt,
1328 left = 4pt, right = 4pt,
1329 top = 4pt, bottom = 4pt,
1330 before skip=4pt, after skip=4pt,
1331 IfValueTF={#1}{#1}{},% More options
1332 ]
1333 \parbox[t]{16pt}{%
1334 \hspace*{2pt}%
1335 \quizSingleButtonDemo{mcqproposalref.\thequizdemo.\themcqdemo.\themcproposaldemo}
1336 }%
1337 \parbox[t]{\linewidth-16pt}{#2}%
1338 \end{tcolorbox}%
1339 }
1340
1341 %- Only a step for multiple solution MCQs (based on AG's \quizButton command)
1342
1343 \NewDocumentCommand{\quizMultipleButton}{m}{%
1344 % Syntax - #1: choice id for answering proposal
1345 % Action on click: toggle myself (choice layer), hide verification layer
1346 \stepcounter{mcqproposal}%

```

```

1347 \stepcounter{mcquiztotal}%
1348 \setlength{quizcheckboxwidth}{\widthof{\faIcon[regular]{square}}}%
1349 \makebox[quizcheckboxwidth][c]{%
1350   \%actionsocg{#1}{verify:\thequizquestion}{\faIcon[regular]{square}}%
1351   \actionsocg{#1}{verify.\thequiz.\thequizquestion}{\faIcon[regular]{square}}%
1352 }%
1353 \%makebox[0pt][l]{\actionsocg{#1}{verify:\thequizquestion}{\faSquare0}}%
1354 \begin{ocg}{#1}{#1}{off}% choice layer
1355   \%makebox[\widthof{\faSquare0}]{\textcolor{green!60!black}{\faCheck}}%
1356   \hspace*{-\quizcheckboxwidth}%
1357   \makebox[quizcheckboxwidth][c]{\textcolor{green!60!black}{\faCheckSquare}}%
1358   \hspace*{-\quizcheckboxwidth}%
1359   \makebox[quizcheckboxwidth][c]{\textcolor{askreplyfirstcolor}{\faIcon[regular]{square}}}%
1360 \end{ocg}%
1361 }
1362
1363 \NewDocumentCommand{\quizMultipleButtonDemo}{m}{%
1364   % Syntax - #1: choice id for answering proposal
1365   % Action on click: toggle myself (choice layer), hide verification layer
1366   \stepcounter{mcqproposaldemo}%
1367   \stepcounter{mcquiztotaldemo}%
1368   \setlength{quizcheckboxwidth}{\widthof{\faIcon[regular]{square}}}%
1369   \makebox[quizcheckboxwidth][c]{%
1370     \actionsocg{#1}{verify.\thequizdemo.\themcqdemo}{\faIcon[regular]{square}}%
1371   }%
1372   \begin{ocg}{#1}{#1}{off}% choice layer
1373     \hspace*{-\quizcheckboxwidth}%
1374     \makebox[quizcheckboxwidth][c]{\textcolor{green!60!black}{\faCheckSquare}}%
1375     \hspace*{-\quizcheckboxwidth}%
1376     \makebox[quizcheckboxwidth][c]{\textcolor{askreplyfirstcolor}{\faIcon[regular]{square}}}%
1377   \end{ocg}%
1378 }
1379
1380 %- Defining a proposition for multiple solution MCQ
1381
1382 \NewDocumentCommand{\mcqproposalMultiple}{o m}{%
1383   % Syntax - #1 = more tcbx options
1384   %           #2 = answering proposal/statement
1385   \begin{tcolorbox}[%
1386     breakable, enhanced,
1387     notitle, colframe=black!60, colback=white,
1388     boxrule=0.2pt, arc=0.4pt, boxsep = 0pt,
1389     left = 4pt, right = 4pt,
1390     top = 4pt, bottom = 4pt,
1391     before skip=4pt, after skip=4pt,
1392     IfValueTF={#1}{#1}{},% More options
1393   ]
1394   \parbox[t]{16pt}{%
1395     \hspace*{2pt}%

```

```

1396 %\quizMultipleButton{mcqproposalref:\thequizquestion:\themcproposal}%
1397 \quizMultipleButton{mcqproposalref.\thequiz.\thequizquestion.\themcproposal}%
1398 }%
1399 \parbox[t]{\linewidth-16pt}{#2}%
1400 \end{tcolorbox}%
1401 }
1402
1403 \NewDocumentCommand{\mcqproposalMultipleDemo}{o m}{%
1404 % Syntax - #1 = more tcbbox options
1405 %          #2 = answering proposal/statement
1406 \begin{tcolorbox}[%
1407 breakable, enhanced,
1408 notitle, colframe=black!60, colback=white,
1409 boxrule=0.2pt, arc=0.4pt, boxsep = 0pt,
1410 left = 4pt, right = 4pt,
1411 top = 4pt, bottom = 4pt,
1412 before skip=4pt, after skip=4pt,
1413 IfValueTF={#1}{#1}{},% More options
1414 ]
1415 \parbox[t]{16pt}{%
1416 \hspace*{2pt}%
1417 \quizMultipleButtonDemo{mcqproposalref.\thequizdemo.\themcqdemo.\themcproposaldemo}%
1418 }%
1419 \parbox[t]{\linewidth-16pt}{#2}%
1420 \end{tcolorbox}%
1421 }
1422
1423 %--- Note: Splitting a list of arguments
1424 %-----
1425 %- See our review and especially Marcel Kruger's answer (LaTeX3 syntax) in:
1426 %- https://tex.stackexchange.com/questions/493987/\[...\]
1427 %- \[...\]ocgx2-xparse-expl3-splitting-comma-separated-ocmd-ocgs-lists-of-arguments-for
1428 %- See also, for example, Enrico Gregorio's and David Carlisle's answers:
1429 %- https://tex.stackexchange.com/questions/110898/package-xparse-splitlist-last-token
1430 %- https://tex.stackexchange.com/questions/348042/splitlist-on-several-delimiters
1431 %-----
1432
1433 %- Setting OCGs reference names: LaTeX3 syntax because of its use by the `ocgx2` package
1434
1435 \NewDocumentCommand{\askreplymcqArgsIds}{m}{%
1436 %mcqproposalref:\thequizquestion:#1%
1437 mcqproposalref.\thequiz.\thequizquestion.#1%
1438 }
1439
1440 \NewDocumentCommand{\askreplymcqArgsIdsDemo}{m}{%
1441 mcqproposalref.\thequizdemo.\themcqdemo.#1%
1442 }
1443
1444 %- Defining a sequence for storing the "massaged" items

```

```

1445
1446 \ExplSyntaxOn
1447
1448 \cs_new_protected:Npn \askreplymcq_process_list:Nn #1 #2
1449 {
1450   % clear the sequence
1451   \seq_clear:N #1
1452   % cycle through the arguments, storing "\mcqArgsIds{<arg>}" in the sequence
1453   \clist_map_inline:nn { #2 }
1454   {
1455     % Here :Nx instead of :Nn ensures that \askreplymcqArgsIds
1456     % is actually evaluated instead of passed as-is
1457     \seq_put_right:Nx #1 { \askreplymcqArgsIds{##1} }
1458   }
1459 }
1460
1461 \cs_new_protected:Npn \askreplymcqdemo_process_list:Nn #1 #2
1462 {
1463   % clear the sequence
1464   \seq_clear:N #1
1465   % cycle through the arguments, storing "\mcqArgsIdsDemo{<arg>}" in the sequence
1466   \clist_map_inline:nn { #2 }
1467   {
1468     % Here :Nx instead of :Nn ensures that \askreplymcqArgsIdsDemo
1469     % is actually evaluated instead of passed as-is
1470     \seq_put_right:Nx #1 { \askreplymcqArgsIdsDemo{##1} }
1471   }
1472 }
1473
1474 %- Defining a "Verify" button both for single and multiple MCQs
1475
1476 \seq_new:N \l_correct_seq
1477 \seq_new:N \l_wrong_seq
1478
1479 \cs_new_protected:Npn \askreplymcq__verify:nn #1 #2
1480 {
1481   %\showocg{verify:\thequizquestion}{%
1482   % ONLY USE POINT AS SEPARATOR: ERROR WITH COLON AND @ --> WHY?
1483   \showocg{verify.\thequiz.\thequizquestion}{%
1484     \begin{tikzpicture}
1485       \node[quizbutton=askreplybuttongray] (checksolutionbutton)
1486       {\strut\scriptsize\lightbf{\textsc{\sffamily\quizverifyname}}};%
1487     \end{tikzpicture}%
1488   }
1489   %\begin{ocg}{verify:\thequizquestion}{verify:\thequizquestion}{off}% verification layer
1490   \begin{ocg}{verify.\thequiz.\thequizquestion}{verify.\thequiz.\thequizquestion}{off}% verification layer
1491     \makebox[0pt][l]{%
1492       \begin{ocmd}{\Not{\And{#1,\Not{\Or{#2}}}}}% "wrong" layer (OCMD)
1493         \hspace*{0.25em}%

```

```

1494     \raisebox{5pt}{\textcolor{red!60!black}{\faTimes}}%Wrong.
1495 \end{ocmd}%
1496 }%
1497 \begin{ocmd}{\And{#1,\Not{\Or{#2}}}}% "correct" layer (OCMD)
1498 \hspace*{0.25em}%
1499 \raisebox{5pt}{\textcolor{green!60!black}{\faCheck}}%Correct.
1500 \end{ocmd}%
1501 \end{ocg}%
1502 }
1503
1504 \cs_new_protected:Npn \askreplymcqdemo__verify:nn #1 #2
1505 {
1506   %\showocg{verify:\thequizquestion}{%
1507   % ONLY USE POINT AS SEPARATOR: ERROR WITH COLON AND @ --> WHY?
1508   \showocg{verify.\thequizdemo.\themcqdemo}{%
1509     \begin{tikzpicture}
1510       \node[quizbutton=askreplybuttongray] (checksolutionbutton)
1511         {\strut\scriptsize\lightbf{\textsc{\sffamily\quizverifyname}}};%
1512     \end{tikzpicture}%
1513   }
1514   %\begin{ocg}{verify:\thequizquestion}{verify:\thequizquestion}{off}% verification layer
1515   \begin{ocg}{verify.\thequizdemo.\themcqdemo}{verify.\thequizdemo.\themcqdemo}{off}% verification layer
1516     \makebox[0pt][l]{%
1517       \begin{ocmd}{\Not{\And{#1,\Not{\Or{#2}}}}}% "wrong" layer (OCMD)
1518         \hspace*{0.25em}%
1519         \raisebox{5pt}{\textcolor{red!60!black}{\faTimes}}%Wrong.
1520       \end{ocmd}%
1521     }%
1522     \begin{ocmd}{\And{#1,\Not{\Or{#2}}}}% "correct" layer (OCMD)
1523       \hspace*{0.25em}%
1524       \raisebox{5pt}{\textcolor{green!60!black}{\faCheck}}%Correct.
1525     \end{ocmd}%
1526   \end{ocg}%
1527 }
1528
1529 \cs_generate_variant:Nn \askreplymcq__verify:nn {ff}
1530
1531 \cs_generate_variant:Nn \askreplymcqdemo__verify:nn {ff}
1532
1533 \NewDocumentCommand{\mcqverify}{ m m }{%
1534   % Syntax - #1: list of OCG ids of correct/required answer(s), comma separated
1535   %           #2: list of OCG ids of wrong answer(s), comma separated
1536   \askreplymcq_process_list:Nn \l_correct_seq { #1 }% Save OCMD IDs as LaTeX3 seq variable
1537   \askreplymcq_process_list:Nn \l_wrong_seq { #2 }% Save OCMD IDs as LaTeX3 seq variable
1538   \askreplymcq_verify:ff { \seq_use:Nn \l_correct_seq {,} } { \seq_use:Nn \l_wrong_seq {,} }
1539 }
1540
1541 \NewDocumentCommand{\mcqverifydemo}{ m m }{%
1542   % Syntax - #1: list of OCG ids of correct/required answer(s), comma separated

```

```

1543 % #2: list of OCG ids of wrong answer(s), comma separated
1544 \askreplmcmdemo_process_list:Nn \l_correct_seq { #1 }% Save OCMD IDs as LaTeX3 seq variable
1545 \askreplmcmdemo_process_list:Nn \l_wrong_seq { #2 }% Save OCMD IDs as LaTeX3 seq variable
1546 \askreplmcmdemo__verify:ff { \seq_use:Nn \l_correct_seq {,} } { \seq_use:Nn \l_wrong_seq {,} }
1547 }
1548
1549 \ExplSyntaxOff
1550
1551 %- Defining a "Reset" button both for single and multiple MCQs: "old fashion" but works
1552
1553 \NewDocumentCommand{\mcqreset}{}{%
1554   \def\ocglistreset{}%
1555   \xdef\ocglistreset{%
1556     %\ocglistreset|space verify.\thequiz.\thequizquestion|space showanswer.\thequiz.\thequizquestion}%
1557     \ocglistreset|space verify.\thequiz.\thequizquestion}%
1558   \foreach \X in {1,...,\value{mcqquiztotal}} {%
1559     %\xdef\ocglistreset{\ocglistreset|space mcqproposalref:\thequizquestion:\X}%
1560     \xdef\ocglistreset{\ocglistreset|space mcqproposalref.\thequiz.\thequizquestion.\X}%
1561   }%
1562   %\ocglistreset
1563   \hideocg{\ocglistreset}{%
1564     \begin{tikzpicture}
1565       \node[quizbutton=askreplybuttongray] (resetbutton)
1566         {\strut\scriptsize\textsf{\textsc{\lightbf{\quizresetname}}}};
1567     \end{tikzpicture}%
1568   }%
1569 }
1570
1571 \NewDocumentCommand{\mcqresetdemo}{}{%
1572   \def\ocglistreset{}%
1573   \xdef\ocglistreset{%
1574     \ocglistreset|space verify.\thequizdemo.\themcqdemo|space showanswer.\thequizdemo.\themcqdemo}%
1575   \foreach \X in {1,...,\value{mcqquiztotaldemo}} {%
1576     \xdef\ocglistreset{\ocglistreset|space mcqproposalref.\thequizdemo.\themcqdemo.\X}%
1577   }%
1578   \hideocg{\ocglistreset}{%
1579     \begin{tikzpicture}
1580       \node[quizbutton=askreplybuttongray] (resetbutton)
1581         {\strut\scriptsize\textsf{\textsc{\lightbf{\quizresetname}}}};
1582     \end{tikzpicture}%
1583   }%
1584 }
1585
1586 %- Defining the "Reset" button (both for single and multiple MCQs)
1587
1588 \ExplSyntaxOn
1589 \NewDocumentCommand{\mcqresetButton}{m}{% AG's definition (LaTeX3): to be adapted (see \mcqreset)
1590   % Syntax - #1: list of OCG ids, comma separated
1591   \clist_set:Nn\l_tmpa_clist{#1} % save OCG ids as LaTeX3 clist variable

```



```

1592 \hideocg{\clist_use:Nn\l_tmpa_clist~}{\fbox{\strut\sffamily\quizresetname}}%
1593 }
1594 \ExplSyntaxOff
1595
1596 %- Defining a "Show/Hide answer" button both for single and multiple MCQs
1597
1598 \NewDocumentCommand{\mcqdisplayanswer}{ s O{b} m D(){6pt,12pt} }{%
1599 % Syntax - #1: switch between answer in the margin (no star) and as tooltip (star)
1600 %           #2: position [b]/[c]/[t] for answer in the margin
1601 %           #3: explanation text to display
1602 %           #4: position control (<xshift-length>,<yshift-length>) for answer in as tooltip
1603 \makebox[0pt][l]{%
1604   %\actionsocg{showanswer:\thequizquestion}{\verify:\thequizquestion}{%
1605   %\actionsocg{showanswer.\thequiz:\thequizquestion}{\verify:\thequizquestion}{%
1606   \actionsocg{showanswer.\thequiz.\thequizquestion}{\verify.\thequiz.\thequizquestion}{%
1607     \begin{tikzpicture}
1608       \node[quizbutton=askreplybuttongray] (displayshowanswerbutton)
1609         {\strut\scriptsize\textsf{\textsc{\lightbf{\quizshowanswername}}}};%
1610     \end{tikzpicture}%
1611   }%
1612 }%
1613 %\begin{ocg}{showanswer:\thequizquestion}{showanswer:\thequizquestion}{off}% show/hide answer layer
1614 %\begin{ocg}{showanswer\thequiz:\thequizquestion}{showanswer:\thequiz:\thequizquestion}{off}% show/hide
  answer layer
1615 \begin{ocg}{showanswer.\thequiz.\thequizquestion}{showanswer.\thequiz.\thequizquestion}{off}% show/hide
  answer layer
1616 \makebox[\quizanswerbuttonwidth][l]{%
1617   \begin{tikzpicture}
1618     \node[quizbutton={black!60!white}] (displayhideanswerbutton)
1619       {\strut\scriptsize\textsf{\textsc{\lightbf{\quizhideanswername}}}};%
1620   \end{tikzpicture}%
1621 }%
1622 \IfBooleanTF{#1}
1623   {\mcqtooltip{#3}{#4}}%
1624   {\mcqmarginbox[2]{#3}}%
1625 \end{ocg}
1626 }
1627
1628 \NewDocumentCommand{\mcqdisplayanswerdemo}{ s O{b} m D(){6pt,12pt} }{%
1629 % Syntax - #1: switch between answer in the margin (no star) and as tooltip (star)
1630 %           #2: position [b]/[c]/[t] for answer in the margin
1631 %           #3: explanation text to display
1632 %           #4: position control (<xshift-length>,<yshift-length>) for answer in as tooltip
1633 \makebox[0pt][l]{%
1634   \actionsocg{showanswer.\thequizdemo.\themcqdemo}{\verify.\thequizdemo.\themcqdemo}{%
1635   \begin{tikzpicture}
1636     \node[quizbutton=askreplybuttongray] (displayshowanswerbutton)
1637       {\strut\scriptsize\textsf{\textsc{\lightbf{\quizshowanswername}}}};%
1638   \end{tikzpicture}%

```

```

1639 }%
1640 }%
1641 \begin{ocg}{showanswer.\thequizdemo.\themcqdemo}{showanswer.\thequizdemo.\themcqdemo}{off}% show/hide answer
    layer
1642 \makebox[\quizanswerbuttonwidth][l]{%
1643 \begin{tikzpicture}
1644 \node[quizbutton={black!60!white}] (displayhideanswerbutton)
1645 {\strut\scriptsize\textsf{\textsc{\lightbf{\quizhideanswername}}}};%
1646 \end{tikzpicture}%
1647 }%
1648 \IfBooleanTF{#1}
1649 {\mcqtooltip{#3}{#4}}%
1650 {\mcqmarginbox{#2}{#3}}%
1651 \end{ocg}
1652 }
1653
1654 %- Defining a macro to display the answer in the margin
1655
1656 \newcommand\mcqtikzmark[1]{%
1657 \tikz[remember picture,overlay]\node[inner xsep=0pt,outer sep=0pt] (#1) {};}
1658
1659 \newlength{\quiztrianglexshift}
1660 \newlength{\quizuppertrianglecorner}
1661 \newlength{\quizboxhshift}
1662 \newlength{\quizboxvshift}
1663 \newlength{\quiznoteheight}
1664
1665 \newcommand\quizside{}
1666 \newcommand\quizotherside{}
1667 \newcommand\quizpointeranchor{}
1668 \newcommand\quizboxanchor{}
1669
1670 \newcounter{mcqdisplaycount}
1671
1672 %\NewDocumentCommand{\mcqmarginbox}{0{b} 0{askreplythirdcolor} 0{\quizexplanationname} m}{%
1673 \NewDocumentCommand{\mcqmarginbox}{0{b} m}{%
1674 \checkoddpage
1675 \ifoddpageoroneside
1676 \setlength\quiztrianglexshift{-3pt}%
1677 \setlength\quizboxhshift{\marginparsep}% Original setting (Gonzalo Medina): see \caution
1678 %\addtolength\quizboxhshift{\marginparsep}% Why? Side effect of `tcolorbox` package?
1679 \addtolength\quizboxhshift{16pt}% Because inside two tcboxes: quiz + question -> leftsep=10pt+6pt
1680 \addtolength\quizboxhshift{16pt}% Because inside two tcboxes: quiz + question -> rightsep=10pt+6pt
1681 %\addtolength\quizboxhshift{3pt}% Adding quiztrianglexshift
1682 \addtolength\quizboxhshift{-3pt}% Adding quiztrianglexshift
1683 \addtolength\quizboxhshift{-0.4pt}% Subtracting 0.5 box linewidth (thick = 0.8pt): see \tikz below
1684 \renewcommand{\quizside}{west}%
1685 \renewcommand{\quizotherside}{east}%
1686 \else

```

```

1687 \setlength\quiztrianglerexshift{3pt}%
1688 \setlength\quizboxhshift{-\marginparsep}%
1689 \renewcommand{\quizside}{east}%
1690 \renewcommand{\quizotherside}{west}%
1691 \fi%
1692 \settoheight{\quiznoteheight}{%
1693   \ifstrempy{#2}%
1694     {\parbox{\marginparwidth-8pt-0.8pt}{%
1695       \footnotesize\ttfamily Sorry, no answer available}}%
1696     {\parbox{\marginparwidth-8pt-0.8pt}{\footnotesize #2}}%
1697 }% thick=0.8pt
1698 \stepcounter{mcqdisplaycount}%
1699 \mcqtikzmark{\themcqdisplaycount}%
1700 \if#1b\relax
1701   \renewcommand\quizpointeranchor{mcqdisplaycount\themcqdisplaycount.south \quizside}%
1702   \renewcommand\quizboxanchor{south \quizside}%
1703   \setlength\quizboxvshift{\quiznoteheight}%
1704   \addtolength\quizboxvshift{-.6\baselineskip}% Adjust the vertical shift with the text line
1705   \setlength\quizuppertrianglecorner{13pt}%
1706 \else
1707   \if#1t\relax
1708     \renewcommand\quizpointeranchor{mcqdisplaycount\themcqdisplaycount.north \quizside}%
1709     \renewcommand\quizboxanchor{north \quizside}%
1710     \setlength\quizboxvshift{-\quiznoteheight}%
1711     \addtolength\quizboxvshift{.6\baselineskip}% Adjust the vertical shift with the text line
1712     \setlength\quizuppertrianglecorner{-7pt}%
1713   \else
1714     \if#1c\relax
1715       \renewcommand\quizpointeranchor{mcqdisplaycount\themcqdisplaycount.\quizside}%
1716       \renewcommand\quizboxanchor{\quizside}%
1717       %\setlength\quizboxvshift{\baselineskip}% No vertical shift, just centered with the text line
1718       % We try here to align the bottom margin box with the one of the quiz question tcbox
1719       %\addtolength\quizboxvshift{\quiznoteheight}% Empirical/test value
1720       %\addtolength\quizboxvshift{-4pt}% bottomsep = 4pt
1721       \setlength\quizuppertrianglecorner{3pt}%
1722     \fi%
1723   \fi%
1724 \fi%
1725 \marginnote{%
1726   \begin{tikzpicture}[remember picture, overlay]
1727     \node[draw=askreplythirdcolor, line width=0.8pt, anchor=\quizside,
1728       xshift=\quizboxhshift, yshift=\quizboxvshift, inner sep=4pt]
1729       (mcqdisplaycount\themcqdisplaycount)
1730       at ([yshift=3pt]current page text area.\quizotherside|-\themcqdisplaycount)
1731       {%
1732         \ifstrempy{#2}%
1733           {\parbox{\marginparwidth-8pt-0.8pt}{%
1734             \footnotesize\ttfamily Sorry, no answer available}}%
1735           {\parbox{\marginparwidth-8pt-0.8pt}{\vskip4pt\footnotesize #2\vskip2pt}}%

```

```

1736 };% thick=0.8pt
1737 \node[fill=white, font=\color{askreplythirdcolor}\sffamily, anchor=west,
1738     inner sep=2pt, xshift=7pt, yshift=0pt]
1739     at (mcqdisplaycount\themcqdisplaycount.north west)
1740     {\small\enspace\textcolor{black}{\textsc{\footnotesize\quizexplanationname}}\enspace};
1741 \fill[askreplythirdcolor]
1742     ([yshift=\quizuppertrianglecorner]\quizpointeranchor) --
1743     ([yshift=\quizuppertrianglecorner-3pt,xshift=\quiztrianglexshift]\quizpointeranchor) --
1744     ([yshift=\quizuppertrianglecorner-6pt]\quizpointeranchor) -- cycle;
1745 \end{tikzpicture}%
1746 }%
1747 }
1748
1749 %- Defining "tooltip" commands to display answers (the margin displaying is not always relevant)
1750
1751 %--- Note: How to define tooltips
1752 %-----
1753 %- For the moment being (fall 2019), only AR and Evince viewer supports tooltips (like for OCGs).
1754 %- From: https://tex.stackexchange.com/questions/155518/tooltip-that-works-with-all-pdf-readers
1755 %- Important update: since spring 2020 OCG, OCMG and JavaScript are supported by Okular!
1756 %- See: https://tex.stackexchange.com/questions/235139/using-the-animate-package-without-adobe
1757 %-----
1758
1759 \ExplSyntaxOn
1760 \let\askreplytpPdfLink\pbs_pdflink:nn
1761 \let\askreplyListSet\clist_set:Nn
1762 \let\askreplyListItem\clist_item:Nn
1763 \ExplSyntaxOff
1764
1765 \newsavebox\askreplytiptext\newcounter{askreplytcnt}
1766
1767 \newlength{\askreplywhatsleft}
1768 \newlength{\askreplytipshift}
1769
1770 \NewDocumentCommand{\mcqtooltip}{ m D(){0pt,0pt} }{%
1771     \leavevmode%
1772     \sbox\askreplytiptext{%
1773         \tcbox[enhanced, colframe=askreplythirdcolor, colback=white, boxrule=0.8pt,
1774             attach boxed title to top left={xshift=7pt, yshift=-\tcboxedtitleheight/2},
1775             boxed title style={boxrule=0pt,colframe=white,colback=white,
1776                 boxsep=0pt, top=4pt, bottom=4pt},
1777             coltitle=black, %toptitle=9pt, bottomtitle=0pt,
1778             title=\quizexplanationname, fonttitle=\footnotesize\scshape\sffamily,
1779             boxsep=2pt, left=2pt, right=2pt, top=5pt, bottom=2pt, sharp corners]{%
1780                 \ifstrempy{#1}
1781                 {\parbox{\marginparwidth-8pt-0.8pt}{\footnotesize\ttfamily Sorry, no answer available}}%
1782                 {\parbox{\marginparwidth-8pt-0.8pt}{\footnotesize #1}}%
1783             }%
1784     }%

```

```

1785 \askreplyclistset\askreplytpoffsets{#2}%
1786 \edef\askreplytwd{\the\wd\askreplytiptext}%
1787 \edef\askreplytht{\the\ht\askreplytiptext}%
1788 \edef\askreplytdp{\the\dp\askreplytiptext}%
1789 \askreplytipshift=0pt%
1790 %OCG-based (that is, all non-draggable) boxes should not extend beyond the
1791 %current column as they may get overlaid by text in the neighbouring column
1792 %\setlength\askreplywhatsleft{\linegoal}%
1793 %\ifdim\askreplywhatsleft<\dimexpr\askreplytwd+\askreplyclistitem\askreplytpoffsets{1}\relax%
1794 % \setlength\askreplytipshift{\askreplywhatsleft-\twd-\askreplyclistitem\askreplytpoffsets{1}}%
1795 %\fi%
1796 \raisebox{\heightof{#1}+\askreplytdp+\askreplyclistitem\askreplytpoffsets{2}}[0pt][0pt]{%
1797   \makebox[0pt][l]{%
1798     \hspace{\dimexpr\askreplytipshift+\askreplyclistitem\askreplytpoffsets{1}\relax}%
1799     \usebox{\askreplytiptext}%
1800   }%
1801 }%
1802 }
1803
1804 \NewDocumentCommand{\mcqtooltiporiginal}% Simplified version for Evince (and AR and new Okular)
1805 { 0{\ifdefined\@linkcolor\@linkcolor\else blue\fi} m 0{yellow!20} m 0{0pt,0pt} }{%
1806 \leavevmode%
1807 %for variants with two and more stars, put tip box on a PDF Layer (OCG)
1808 \ocgbase@new@ocg{\askreplytipOCG.\theaskreplytcnt}{%
1809   /Print<</PrintState/OFF>>/Export<</ExportState/OFF>>%
1810 }{false}%
1811 \xdef\askreplytipTip0cg{\ocgbase@last@ocg}%
1812 %prevent simultaneous visibility of multiple non-draggable tooltips
1813 \ocgbase@add@ocg@to@radiobtn@grp{\askreplytool@tips}{\ocgbase@last@ocg}%
1814 \askreplytipPdfLink{%
1815   /Subtype/Link/Border[0 0 0]/A <</S/SetOCGState/State [/Toggle \askreplytipTip0cg]>>
1816 }{\textcolor{#1}{#2}}%
1817 \sbox\askreplytiptext{%
1818   \ocgbase@oc@bdc{\askreplytipTip0cg}%
1819   \ocgbase@open@stack@push{\askreplytipTip0cg}%
1820   %\fcolorbox{black}{#3}{#4}%
1821   \tcbox[colframe=black,colback=#3,size=fbox,arc=1ex,sharp corners=southwest]{#4}%
1822   \ocgbase@oc@emc\ocgbase@open@stack@pop\askreplytpNull%
1823 }%
1824 \askreplyclistset\askreplytpoffsets{#5}%
1825 \edef\askreplytwd{\the\wd\askreplytiptext}%
1826 \edef\askreplytht{\the\ht\askreplytiptext}%
1827 \edef\askreplytdp{\the\dp\askreplytiptext}%
1828 \askreplytipshift=0pt%
1829 %OCG-based (that is, all non-draggable) boxes should not extend beyond the
1830 %current column as they may get overlaid by text in the neighbouring column
1831 \setlength\askreplywhatsleft{\linegoal}%
1832 \ifdim\askreplywhatsleft<\dimexpr\askreplytwd+\clistitem\askreplytpoffsets{1}\relax%
1833 \setlength\askreplytipshift{\whatsleft-\twd-\askreplyclistitem\askreplytpoffsets{1}}%

```

```

1834 \fi%
1835 \raisebox{\heightof{#2}+\askreplytdp+\askreplyclistitem\askreplytpoffsets{2}}[0pt][0pt]{%
1836   \makebox[0pt][l]{%
1837     \hspace{\dimexpr\askreplytipshift+\askreplyclistitem\askreplytpoffsets{1}\relax}%
1838     \usebox{\askreplytiptext}%
1839   }%
1840 }%
1841 \stepcounter{askreplytcnt}%
1842 }
1843
1844 %- Setting the user level environments (see below in case 'assignpoints' package is loaded or not)
1845 %-----
1846
1847 %- LaTeX2e way, see:
1848 %- https://tex.stackexchange.com/questions/9035/\[...\]
1849 %- \[...\]how-to-pass-an-optional-argument-to-an-environment-with-verbatim-content
1850
1851 %- Setting the display of exercise levels: none, basic, intermediate and advanced
1852
1853 \newtoggle{askreply@level@display@on}
1854
1855 \NewDocumentCommand{\askreply@level@display}{ }{
1856   \iftoggle{askreply@level@display@on}{%
1857     \node[xshift=8pt, inner sep=0pt, minimum size=2.5mm, circle, %radius=4mm,
1858       ball color=\askreply@firstlevel@color] (firstlevel) at (frame.east) {};
1859     \node[circle, inner sep=0pt, minimum size=2.5mm, %radius=4mm,
1860       right=1pt of firstlevel, ball color=\askreply@secondlevel@color] (secondlevel) {};
1861     \node[circle, inner sep=0pt, minimum size=2.5mm, %radius=4mm,
1862       right=1pt of secondlevel, ball color=\askreply@thirdlevel@color] (thirdlevel) {};
1863   };%\node[xshift=16pt, circle, radius=2pt, ball color=firstcolor] (firstlevel) at (frame.east) {};%
1864 }
1865
1866 \AtBeginEnvironment{exercise}{\small}
1867 \AtBeginEnvironment{quiz}{\small}
1868 \AtBeginEnvironment{solution}{\small}
1869
1870 \newcommand\askreplytikzmark[1]{%
1871   \tikz[remember picture,overlay]\node (#1) {\phantom{Hg}};%
1872 }
1873 \newlength{\exerciseheight}
1874 %\newlength{\askreply@detect@boxheight}
1875
1876 \newcommand\connect[3]{%
1877   \tikz[remember picture,overlay]
1878     \pgfextracty{\gloal#1}{\pgfpointanchor{#2}{north}}
1879     \pgfextracty{\pgf@ya}{\pgfpointanchor{#3}{south}}
1880     \pgfmathadd{#1}{\pgf@ya}
1881     \let#1\pgfmathresult
1882   %\setlength{exerciseheight}{\pgfmathresult}

```

```

1883 %\addtolength{\exerciseheight}{-\pgf@ya}
1884 \draw[->,red,>=latex] (#2.north) -- (#3.south);%
1885 %Out: |the#1
1886 }
1887 \newcommand\getheightofnode[2]{
1888   \pgfextracty{#1}{\pgfpointanchor{#2}{north}}
1889   \pgfextracty{\pgf@ya}{\pgfpointanchor{#2}{south}}
1890   \addtolength{#1}{-\pgf@ya}
1891 }
1892
1893 \newlength{\parline}
1894 \newlength{\paroutindent}
1895 \newlength{\lineheight}
1896 \setlength{\lineheight}{\heightof{abcdefghijklmnoprstuvwxyz}}
1897
1898 \newcommand{\mycountlines}[1]{%
1899   \setlength{\paroutindent}{\expandafter\parindent}
1900   \setlength{\parline}{\heightof{\noindent\begin{minipage}{\linewidth}%
1901     \setlength{\parindent}{\paroutindent}#1\end{minipage}}}%
1902   \pgfmathparse{round(\parline / (0.9*\lineheight))}
1903   #1\par \noindent \texttt{line count: (\pgfmathresult)}
1904 }
1905
1906 %- https://tex.stackexchange.com/questions/402779/\[...\]
1907 %- [...]how-can-i-calculate-a-number-of-lines-needed-to-fit-the-text/
1908 \newcounter{askreplycountlines}
1909 \newcommand{\askreplynumberoflines}[2][\linewidth]{% #1=width (optional), #2=text
1910   \bgroup
1911   \hsize=#1\relax
1912   \clubpenalty=0
1913   \widowpenalty=0
1914   \displaywidowpenalty=0
1915   \predisplaypenalty=0
1916   \postdisplaypenalty=0
1917   \interlinepenalty=0
1918   \setbox0=\vbox{#2}%
1919   \setcounter{askreplycountlines}{0}%
1920   \loop\ifdim\ht0>0pt
1921     \stepcounter{askreplycountlines}%
1922     \setbox1=\vsplit0 to 0pt
1923   \repeat
1924   \egroup}% |theaskreplycountlines
1925
1926 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
1927 %----- Typical usage
1928 %-
1929 %- Exercise environment
1930 %-----
1931 %- \begin{exercise}[<options comma separated>]

```

```

1932 %- Stuff...
1933 %- \begin{subexercise}[<tcloborbox options>]{<optional title>}
1934 %- Stuff...
1935 %- \end{subexercise}
1936 %- \begin{subexercise}[<tcloborbox options>]{<optional title>}
1937 %- Stuff...
1938 %- \end{subexercise}
1939 %- Stuff...
1940 %- \end{exercise}
1941 %- Options: display=true/false (default=true) ; storing=true/false (default=true)
1942 %- list=true/false (default=true) adding a entry in the list of exercises
1943 %- title={<optional title>} (no default), before skip=<length>, after skip=<length>,
1944 %- level=<basic>/<intermediate>/<advanced> (no default)
1945 %-
1946 %- Solution environment
1947 %- -----
1948 %- \begin{solution}[<options comma separated>]
1949 %- Stuff...
1950 %- \begin{subsolution}[<tcloborbox options>]
1951 %- Stuff...
1952 %- \end{subsolution}
1953 %- \begin{subsolution}[<tcloborbox options>]
1954 %- Stuff...
1955 %- \end{subsolution}
1956 %- Stuff...
1957 %- \end{solution}
1958 %- Options: display=true/false (default=true) ; storing=true/false (default=true)
1959 %- ID=<number of the exercise> (no default), before skip=<length>, after skip=<length>
1960 %- The solution ID number is automatically set in the sequence of the exercises. But in case
1961 %- an exercise has no solution, one must restart the sequence with the correct ID number.
1962 %-
1963 %- Quiz environment
1964 %- -----
1965 %- \begin{quiz}[<options comma separated>]
1966 %- \begin{quizquestion}<#1>[<#2>]{<#3>}{<#4>}{<#5>}{<#6>}<#7> (see below)
1967 %- \mcqprosal{stuff}
1968 %- etc.
1969 %- \end{quizquestion}
1970 %- \begin{quizquestion*}<#1>[<#2>]{<#3>}{<#4>}{<#5>}{<#6>}<#7> (see below)
1971 %- \mcqprosal{stuff}
1972 %- etc.
1973 %- \end{quizquestion*}
1974 %- \end{quiz}
1975 %- Options: display=true/false (default=true) ; storing=true/false (default=true)
1976 %- list=true/false (default=true) adding a entry in the list of quizzes
1977 %- title={<optional title>} (no default), before skip=<length>, after skip=<length>
1978 %-
1979 %- Quizquestion environment (multiple answers)
1980 %- -----

```



```

1981 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
1982 %           [#2] = Positionning the answer box: at [b] bottom (default), [c] centered or [t] top
1983 %           {#3} = Mandatory correct answer numbers comma separated
1984 %           {#4} = Mandatory wrong answer numbers comma separated
1985 %           {#5} = Optional title
1986 %           (#6) = Optional coordinates correction for positionning the answer (<dimx>,<dimy>)
1987 %           <#7> = Optional explanation text of the answer (usually given ;- )
1988 %- \begin{quizquestion}<#1>[#2]{#3}{#4}{#5}(<#6>)<#7>
1989 %-   \mcqproposal{stuff-one>}
1990 %-   \mcqproposal{stuff-two>}
1991 %-   \mcqproposal{stuff-three>}
1992 %-   \mcqproposal{stuff-four>}
1993 %-   etc.
1994 %- \end{quizquestion}
1995 %-
1996 %- Quizquestion* environment (single exclusive answer)
1997 %------
1998 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
1999 %           [#2] = Positionning the answer box: at [b] bottom (default), [c] centered or [t] top
2000 %           {#3} = Mandatory correct answer number (only one)
2001 %           {#4} = Mandatory wrong answer numbers comma separated
2002 %           {#5} = Optional title
2003 %           (#6) = Optional coordinates correction for positionning the answer (<dimx>,<dimy>)
2004 %           <#7> = Optional explanation text of the answer (usually given ;- )
2005 %- \begin{quizquestion*}<#1>[#2]{#3}{#4}{#5}(<#6>)<#7>
2006 %-   \mcqproposal{stuff-one>}
2007 %-   \mcqproposal{stuff-two>}
2008 %-   \mcqproposal{stuff-three>}
2009 %-   \mcqproposal{stuff-four>}
2010 %-   etc.
2011 %- \end{quizquestion*}
2012 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2013
2014 \iftoggle{askreply@points}{% With 'assignpoints' package
2015 %
2016 %- Exercise environment
2017 %------
2018 \RenewDocumentEnvironment{exercise}{ }{%
2019   \catcode`\^^M=\active
2020   \@ifnextchar[%
2021     {\catcode`\^^M=5 \exercise@start}
2022     {\catcode`\^^M=5 \exercise@start[] }
2023 }{%
2024   \endVerbatimOut%
2025   %|VerbatimInput{\askreply@outfilename}%
2026   %|settototalheight{\askreply@detect@boxheight}{%
2027   %   |parbox{|linewidth}{%
2028   %     |input{\exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}
2029   %   }%

```

```

2030 %}
2031 \ifaskreply@display
2032   \ifdefstring{\askreply@level}{basic}%
2033     {%
2034       \toggletrue{\askreply@level@display@on}%
2035       \gdef\asreply@firstlevel@color{\askreplythirdcolor}%
2036       \gdef\asreply@secondlevel@color{lightgray}%
2037       \gdef\asreply@thirdlevel@color{lightgray}%
2038       %\marginnote{level=basic}%
2039     }%
2040   {\ifdefstring{\askreply@level}{intermediate}%
2041     {%
2042       \toggletrue{\askreply@level@display@on}%
2043       \gdef\asreply@firstlevel@color{lightgray}%
2044       \gdef\asreply@secondlevel@color{\askreplythirdcolor}%
2045       \gdef\asreply@thirdlevel@color{lightgray}%
2046       %\marginnote{level=intermediate}%
2047     }%
2048   {\ifdefstring{\askreply@level}{advanced}%
2049     {%
2050       \toggletrue{\askreply@level@display@on}%
2051       \gdef\asreply@firstlevel@color{lightgray}%
2052       \gdef\asreply@secondlevel@color{lightgray}%
2053       \gdef\asreply@thirdlevel@color{\askreplythirdcolor}%
2054       %\marginnote{level=advanced}%
2055     }%
2056     {}%\marginnote{level=none}}%
2057   }%
2058 }%
2059 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip]
2060   % Empty versus non-empty exercise title
2061   \iftoggle{assignpoints@checkemptystring}%
2062     {\strut\textsf{\lightbf{\normalsize\exercisename\space\currentexercisenum}}}%
2063     {\hfill\textsf{\lightbf{\small\displaypoints*[exercise]{\currentexercisenum}}}%
2064   }%
2065   {\strut\textsf{\lightbf{\normalsize\scshape\exercisename\space\currentexercisenum}}}%
2066   {\textsf{\lightbf{\normalsize\scshape\enspace\textendash\enspace\currentexercisetitle}}}%
2067   {\hfill\textsf{\lightbf{%
2068     \small\scshape\displaypoints*[exercise]{\currentexercisenum}}}%
2069   }%
2070 \end{tcolorbox}\nobreak%\nepagebreak?
2071 \askreplybox
2072 \tikzpageoverlay{\@askreplytikzframebox{\askreplyframedbox, fill=black!6{\askreplyfirstcolor}}%
2073   \input{\exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2074   \askreplynumberoflines{%
2075     \let\pointsoforiginal\points% Not to count points twice
2076     \let\points\phantom%
2077     \input{\exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2078     \let\points\pointsoforiginal

```

```

2079 }%
2080 %NoL: |theaskreplycountlines
2081 \par\phantomtext%
2082 %\vspace{-.5\baselineskip}%
2083 \ifdefempty{\solutionID}%
2084 {\ifnumequal{\theaskreplycountlines}{1}{\par\vspace{-0.6\baselineskip}}{}}%
2085 {\par\hfill\raisebox{-2.5pt}{%
2086   \textcolor{askreplysecondcolor}{%
2087     %SolutionID: |solutionID\quad%
2088     \itshape\footnotesize{\normalfont\faSquare}%
2089     \enspace Solution\space page~\pageref{solution:solutionID}%
2090     %\enspace Solution page~\pageref{solution:theexercise}%
2091   }}%
2092 }%
2093 \endtikzpagelayer
2094 %\par\vspace{|\dimexpr.5\baselineskip|relax}%
2095 \endaskreplybox
2096 %\zsaveposy{stopexercise}
2097 %Space: |the|\dimexpr\zposy{startexercise}sp-\zposy{stopexercise}sp|relax
2098 \vspace{\askreply@afterskip}%
2099 \fi
2100 \ifaskreply@storing
2101   \ifx\askreply@title\empty%
2102     \askreply@filecopytoenv%
2103     {\askreply@outfilename}%{\exercisedir|jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2104     {\exercisedir|jobname-exercise-\askreplytwodigits{\theexercise}.env}%
2105     {\string\begin{exercise}}%
2106     {\string\end{exercise}}%
2107     {\string[storing=false]}%
2108   \else
2109     \askreply@filecopytoenv%
2110     {\exercisedir|jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2111     {\exercisedir|jobname-exercise-\askreplytwodigits{\theexercise}.env}%
2112     {\string\begin{exercise}}%
2113     {\string\end{exercise}}%
2114     {\string[storing=false, title=\askreply@title]}%
2115   \fi
2116 \fi
2117 \ifaskreply@list
2118   \addcontentsline{loe}{exercise}{\protect\numberline{\theexercise}\currentexercisetitle}%
2119 \fi
2120 \setcounter{assignpoints@maxsubexercisecount}{\theassignpoints@subexercisecount}%
2121 \assignpoints@storevaluetoaux%
2122 {\assignpointsprefix{exercise}@exercisetitle}%
2123 {\theassignpoints@exercisecount}%
2124 {\currentexercisetitle}%
2125 \assignpoints@storevaluetoaux%
2126 {\assignpointsprefix{exercise}@numberofsubexercises}%
2127 {\theassignpoints@exercisecount}%

```

```

2128     {\theassignpoints@maxsubexercisecount}%
2129 \assignpoints@storevaluetoaux%
2130     {\assignpointsprefix{exercise}@points}%
2131     {\theassignpoints@exercisecount}%
2132     {\strip@pt\assignpoints@currentexercisepoints}% https://tex.stackexchange.com/questions/2810/
2133 \global\boolfalse{assignpoints@inexercise}%
2134 \togglefalse{assignpoints@checkemptystring}%
2135 \togglefalse{askreply@level@display@on}%
2136 }
2137 \def\exercise@start[#1]{%
2138     \pgfkeys{/askreply/.cd, #1}%
2139     \ifbool{assignpoints@inexercise}%
2140         {\PackageError{assignpoints}{You cannot nest exercise environments}}%
2141         {}%
2142     \ifbool{assignpoints@exercise@layoutdefined}{\fi}%
2143     \PackageError{assignpoints}%
2144         {Option 'customlayout' requires you to define an exercise layout using
2145         at least '\string\AtBeginExercise{...}'}%
2146     }%
2147     \global\booltrue{assignpoints@inexercise}%
2148     \stepcounter{exercise}%
2149     \getenvID[exercise]{\theexercise}%
2150     \getenvID[solution]{\theexercise}%
2151     \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
2152     %\label{exercise:\theassignpoints@exercisecount}
2153     \phantomsection\label{exercise:\theexercise}% To have correct \pageref link (see TeX.SX/49061)
2154     \setlength{\assignpoints@currentexercisepoints}{0pt}%
2155     \global\assignpoints@currentexercisepoints=\assignpoints@currentexercisepoints%
2156     \ifx\askreply@title\@empty% WORKS!
2157         %\textbf{TRUE}
2158         \toggletrue{assignpoints@checkemptystring}%
2159     \else%
2160         %\textbf{FALSE}
2161         \togglefalse{assignpoints@checkemptystring}%
2162         \renewcommand{\currentexercisetitle}{\askreply@title}%
2163     \fi%
2164     %\renewcommand{\currentexercisetitle}{\askreply@title}%
2165     %\ifstrepty{\currentexercisetitle}% DOES NOT WORK! WHY?
2166     % {\toggletrue{assignpoints@checkemptystring}\textbf{TRUE}}%
2167     % {\togglefalse{assignpoints@checkemptystring}\textbf{FALSE}}%
2168     %\ifnum\c@exercise=0
2169     % \setcounter{assignpoints@exercisecount}{0}% Exercise 0 is for example
2170     % \setcounter{assignpoints@totalexercisecount}{0}%
2171     %\else
2172     \stepcounter{assignpoints@exercisecount}% Starting the numbering from "1"
2173     \stepcounter{assignpoints@totalexercisecount}%
2174     %\fi
2175     \ifcsname assignpoints@exercise@numberofsubexercises@\currentexercisenum\endcsname%
2176     \renewcommand{\numberofsubexercises}{%

```

```

2177 \assignpoints@readvaluefromaux{exercise}{numberofsubexercises@\currentexercisenumber}}%
2178 \fi%
2179 \ifx\askreply@envsymbol\@empty%
2180 \renewcommand{\envsymbol}{%
2181 \normalfont\faIcon{laptop-code}}% \faIcon{feather-alt}} \faPenFancy \faMarker
2182 \else%
2183 \renewcommand{\envsymbol}{\normalfont\askreply@envsymbol}%
2184 \fi%
2185 \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2186 \def\askreply@outfilename{%
2187 \exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2188 \VerbatimOut{\askreply@outfilename}%
2189 }
2190 \NewDocumentEnvironment{exercise*}{o}{% Solely (no reference) or demonstration exercise
2191 \pgfkeys{/askreply/.cd, #1}%
2192 \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
2193 \ifx\askreply@title\@empty% WORKS!
2194 \toggletrue{assignpoints@checkemptystring}%
2195 \else
2196 \togglefalse{assignpoints@checkemptystring}%
2197 \renewcommand{\currentexercisetitle}{\askreply@title}%
2198 \fi
2199 \ifx\askreply@envsymbol\@empty
2200 \renewcommand{\envsymbol}{%
2201 \normalfont\faIcon{laptop-code}}% \faIcon{feather-alt}} \faPenFancy \faMarker
2202 \else
2203 \renewcommand{\envsymbol}{\normalfont\askreply@envsymbol}%
2204 \fi
2205 \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2206 \ifdefstring{\askreply@level}{basic}%
2207 {%
2208 \toggletrue{askreply@level@display@on}%
2209 \gdef\asreply@firstlevel@color{askreplythirdcolor}%
2210 \gdef\asreply@secondlevel@color{lightgray}%
2211 \gdef\asreply@thirdlevel@color{lightgray}%
2212 }%
2213 {\ifdefstring{\askreply@level}{intermediate}%
2214 {%
2215 \toggletrue{askreply@level@display@on}%
2216 \gdef\asreply@firstlevel@color{lightgray}%
2217 \gdef\asreply@secondlevel@color{askreplythirdcolor}%
2218 \gdef\asreply@thirdlevel@color{lightgray}%
2219 }%
2220 {\ifdefstring{\askreply@level}{advanced}%
2221 {%
2222 \toggletrue{askreply@level@display@on}%
2223 \gdef\asreply@firstlevel@color{lightgray}%
2224 \gdef\asreply@secondlevel@color{lightgray}%
2225 \gdef\asreply@thirdlevel@color{askreplythirdcolor}%

```

```

2226         }%
2227         {}% level=none
2228     }%
2229 }%
2230 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip]
2231 % Empty versus non-empty exercise title
2232 \iftoggle{assignpoints@checkemptystring}%
2233     {\strut\textsf{\textsc{\lightbf{%
2234         \normalsize\exercisename\hfill{\small\askreply@editpoints}}}}}%
2235     {\strut\textsf{\textsc{\lightbf{%
2236         \normalsize\currentexercisetitle\hfill{\small\askreply@editpoints}}}}}%
2237 \end{tcolorbox}\nobreak%\nopagebreak?
2238 \askreplybox%
2239 \tikzpagelayer{\@askreplytikzframebox{askreplyframedbox, fill=black!6}{askreplyfirstcolor}}%
2240 \small
2241 }{%
2242     \par\phantomtext%
2243     %\par\vspace[-0.5\baselineskip]%
2244     \endtikzpagelayer
2245     %\par\vspace{\baselineskip}%
2246 \endaskreplybox
2247 \vspace{\askreply@afterskip}%
2248 \togglefalse{assignpoints@checkemptystring}%
2249 \togglefalse{askreply@level@display@on}%
2250 }
2251 %
2252 %- Subexercise environment
2253 %-----
2254 \AtBeginSubexercise{\begin{tcolorbox}[subexercisepoints]}
2255 \AtEndSubexercise{\end{tcolorbox}}
2256 \RenewDocumentEnvironment{subexercise}{ 0{} }{%
2257     \pgfkeys{/askreply/.cd, #1}%
2258     \ifbool{assignpoints@insubexercise}%
2259         {\PackageError{assignpoints}{You cannot nest subexercise environments}}%
2260         {}%
2261     \ifbool{assignpoints@subexercise@layoutdefined}{ }{%
2262         \PackageError{assignpoints}{Option 'customlayout' requires you to define a subexercise
2263             layout using at least '\string\AtBeginSubexercise{...}'}
2264     }%
2265     \global\booltrue{assignpoints@insubexercise}%
2266     \setlength{\assignpoints@currentsubexercisepoints}{0pt}%
2267     \global\assignpoints@currentsubexercisepoints=\assignpoints@currentsubexercisepoints%
2268     \ifx\askreply@title\@empty
2269         \toggletrue{assignpoints@checkemptystring}%
2270     \else
2271         \togglefalse{assignpoints@checkemptystring}%
2272         \renewcommand{\currentsubexercisetitle}{\askreply@title}%
2273     \fi
2274     \stepcounter{assignpoints@subexercisecount}% Starting the numbering from "1"

```

```

2275 \exercisepoints@sub@begin%
2276 %\begin{tcolorbox}[subexercisepoints, #1]
2277 }{%
2278 %\end{tcolorbox}%
2279 \exercisepoints@sub@end%
2280 \assignpoints@storevaluetoaux%
2281 {\assignpointsprefix{subexercise}@title}%
2282 {\theassignpoints@exercisecount.\theassignpoints@subexercisecount}%
2283 {\currentsubexercisetitle}%
2284 \assignpoints@storevaluetoaux%
2285 {\assignpointsprefix{exercise}@points}%
2286 {\theassignpoints@exercisecount.\theassignpoints@subexercisecount}%
2287 {\strip@pt\assignpoints@currentsubexercisepoints}% https://tex.stackexchange.com/questions/2810/
2288 \global\boolfalse{assignpoints@insubexercise}%
2289 \togglefalse{assignpoints@checkemptystring}%
2290 }
2291 %
2292 %- Solution environment
2293 %-----
2294 \RenewDocumentEnvironment{solution}{ }{%
2295 \catcode`\^^M=\active
2296 \@ifnextchar[%
2297 {\catcode`\^^M=5 \solution@start}
2298 {\catcode`\^^M=5 \solution@start[]}]
2299 }{%
2300 \endVerbatimOut%
2301 %\VerbatimInput{\askreply@outfilename}%
2302 \ifaskreply@display
2303 %\vspace{\askreply@beforeskip}%
2304 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip,
2305 colback=askreplysecondcolor!75!black, colframe=askreplysecondcolor]
2306 % Empty versus non-empty solution title
2307 \ifstrempy{\currentexercisetitle}%
2308 {\strut\textsf{\lightbf{%
2309 \normalsize\scshape\solutionname\space\theassignpoints@solutioncount\space}}}%
2310 \hfill{\small(\exercisenamencap\space\hyperlink{exerciseID}{\thesolution},\space%
2311 page\space\pageref{exercise:\thesolution})}}%
2312 }%
2313 {\strut\textsf{\lightbf{%
2314 \normalsize\scshape\solutionname\space\theassignpoints@solutioncount\space}}}%
2315 \textsf{\lightbf{%
2316 \normalsize\scshape\enspace\textendash\enspace\currentexercisetitle\space}}}%
2317 \textsf{\lightbf{\enspace{\small(page\space\pageref{exercise:\thesolution})}}}%
2318 \hfill\textsf{\lightbf{\small\scshape%
2319 \displaypoints*[exercise]{\theassignpoints@solutioncount}}}}%
2320 }%
2321 \end{tcolorbox}\nobreak%\nopagebreak?
2322 \askreplybox%
2323 \tikzpagelayer{\@askreplytikzframebox{askreplyframedbox, fill=black!6}{askreplysecondcolor}}%

```

```

2324 \input{\exercisedir\jobname-solution-body-\askreplytwodigits{\thesolution}.ltx}
2325 \askreplynumberoflines{\input{\askreply@outfilename}}%
2326 %NoL: \theaskreplycountlines
2327 \ifnumequal{\theaskreplycountlines}{1}{\par\vspace{0.4\baselineskip}}{}%
2328 \par\phantomtext%
2329 \endtikzpagelayer
2330 \endaskreplybox
2331 \vspace{\askreply@afterskip}%
2332 \fi
2333 \ifaskreply@storing
2334 \askreply@filecopytoenv%
2335 {\exercisedir\jobname-solution-body-\askreplytwodigits{\thesolution}.ltx}%
2336 {\exercisedir\jobname-solution-\askreplytwodigits{\thesolution}.env}%
2337 {\string\begin{solution}}%
2338 {\string\end{solution}}%
2339 {\string[storing=false]}%
2340 \fi
2341 %\ifx\askreply@ID\empty%
2342 \askreply@storevaluetoaux{exercise@solutionID}{\thesolution}{ID:\thesolution}%
2343 %\else
2344 % \askreply@storevaluetoaux{exercise@solutionID}{\askreply@ID}{ID:\askreply@ID}%
2345 %\fi
2346 \global\boolfalse{assignpoints@insolution}%
2347 }
2348 \def\solution@start[#1]{%
2349 \pgfkeys{/askreply/.cd, #1}%
2350 \ifbool{assignpoints@insolution}%
2351 {\PackageError{assignpoints}{You cannot nest solution environments}}%
2352 {}%
2353 \ifbool{assignpoints@solution@layoutdefined}{}{%
2354 \PackageError{assignpoints}%
2355 {Option 'customlayout' requires you to define an solution layout using
2356 at least '\string\AtBeginSolution{...}'}%
2357 }%
2358 \global\booltrue{assignpoints@insolution}%
2359 \ifx\askreply@ID\empty%
2360 %\ifnumequal{\value{solution}}{\value{exercise}}%
2361 % {\setcounter{solution}{\value{exercise}}}%
2362 % {%
2363 % \ifnumless{\value{solution}}{\value{exercise}}%
2364 % {\setcounter{solution}{\value{exercise}}}%
2365 % {\PackageWarning{askreply}{The solution counter must be set with ID}}%
2366 % }%
2367 %\getenvID[exercise]{\thesolution}%
2368 \stepcounter{solution}%
2369 \getenvID[solution]{\thesolution}%
2370 \else
2371 %\getenvID[exercise]{\thesolution}%
2372 \setcounter{solution}{\askreply@ID}%

```



```

2373 \getenvID[solution]{\thesolution}%
2374 \fi
2375 \stepcounter{solutionnumber}%
2376 \hypersetup{unicode, pdfborder=0 0 0, linkcolor=white}%
2377 %\hypertarget{\solutionID}{}%
2378 \phantomsection\label{\solution:solutionID}%
2379 \ifx\askreply@envsymbol\@empty
2380 \renewcommand{\envsymbol}{\normalfont\faLightbulb}%
2381 \else
2382 \renewcommand{\envsymbol}{\normalfont\askreply@envsymbol}%
2383 \fi
2384 \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2385 %\par\vspace{\baselineskip}
2386 \ifbool{assignpoints@inexercise}
2387 {\setcounter{assignpoints@solutioncount}{\theassignpoints@exercisecount}}%
2388 {\setcounter{assignpoints@solutioncount}{\thesolution}}
2389 %- Adding a "hard" solution reference (not a label but having the same functionality)
2390 %- The aim is to have control on the display if there is no reference
2391 \assignpoints@storevaluetoaux%
2392 {\assignpointsprefix{\solution}@reference}%
2393 {\theassignpoints@solutioncount}%
2394 {\theassignpoints@solutioncount}%
2395 \gettitle[exercise]{\theassignpoints@solutioncount}%
2396 \def\askreply@outfilename{%
2397 \exercisedir\jobname-solution-body-\askreplytwodigits{\thesolution}.ltx}%
2398 \VerbatimOut{\askreply@outfilename}%
2399 }
2400 \NewDocumentEnvironment{solution*}{o}{% Solely (no reference) or demonstration exercise
2401 \pgfkeys{/askreply/.cd, #1}%
2402 \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
2403 \ifx\askreply@title\@empty% WORKS!
2404 \toggletrue{assignpoints@checkemptystring}%
2405 \else
2406 \togglefalse{assignpoints@checkemptystring}%
2407 \renewcommand{\currentexercisetitle}{\askreply@title}%
2408 \fi
2409 \ifx\askreply@envsymbol\@empty
2410 \renewcommand{\envsymbol}{\normalfont\faLightbulb}%
2411 \else
2412 \renewcommand{\envsymbol}{\normalfont\askreply@envsymbol}%
2413 \fi
2414 \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2415 \ifdefstring{\askreply@level}{basic}%
2416 {%
2417 \toggletrue{askreply@level@display@on}%
2418 \gdef\asreply@firstlevel@color{\askreplythirdcolor}%
2419 \gdef\asreply@secondlevel@color{lightgray}%
2420 \gdef\asreply@thirdlevel@color{lightgray}%
2421 }%

```

```

2422 {\ifdefstring{\askreply@level}{intermediate}%
2423 {%
2424   \toggletrue{\askreply@level@display@on}%
2425   \gdef\askreply@firstlevel@color{lightgray}%
2426   \gdef\askreply@secondlevel@color{\askreplythirdcolor}%
2427   \gdef\askreply@thirdlevel@color{lightgray}%
2428 }%
2429 {\ifdefstring{\askreply@level}{advanced}%
2430 {%
2431   \toggletrue{\askreply@level@display@on}%
2432   \gdef\askreply@firstlevel@color{lightgray}%
2433   \gdef\askreply@secondlevel@color{lightgray}%
2434   \gdef\askreply@thirdlevel@color{\askreplythirdcolor}%
2435 }%
2436 {}% level=none
2437 }%
2438 }%
2439 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip,
2440   colback=askreplysecondcolor!75!black, colframe=askreplysecondcolor]
2441 %\begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip]
2442 % Empty versus non-empty exercise title
2443 \iftoggle{assignpoints@checkemptystring}%
2444   {\strut\textsf{\textsc{\lightbf{%
2445     \solutionname\hfill\small\askreply@editpoints}}}}}%
2446   {\strut\textsf{\textsc{\lightbf{%
2447     \currentexercisetitle\hfill\small\askreply@editpoints}}}}}%
2448 \end{tcolorbox}\nobreak%\noprogrambreak?
2449 \askreplybox%
2450 \tikzpagelayer{@askreplytikzframebox{askreplyframedbox, fill=black!6}{askreplyfirstcolor}}%
2451 \small
2452 }{%
2453   \par\phantomtext%
2454   %\vspace{-.5\baselineskip}%
2455   \endtikzpagelayer
2456   %\par\vspace{\dimexpr.5\baselineskip\relax}%
2457 \endaskreplybox
2458 \vspace{\askreply@afterskip}%
2459 \togglefalse{assignpoints@checkemptystring}%
2460 \togglefalse{\askreply@level@display@on}%
2461 }
2462 %- Subsolution environment
2463 %-----
2464 \AtBeginSubsolution{\begin{tcolorbox}[subsolutionpoints]}
2465 \AtEndSubsolution{\end{tcolorbox}}
2466 \RenewDocumentEnvironment{subsolution}{0}{}{}%
2467 \ifbool{assignpoints@insubsolution}%
2468   {\PackageError{assignpoints}{You cannot nest 'subsolution' environments}}%
2469   {}%
2470 \ifbool{assignpoints@subsolution@layoutdefined}{}{}%

```

```

2471 \PackageError{assignpoints}%
2472 {Option 'customlayout' requires you to define an 'subsolution' layout using
2473 at least '\string\AtBeginSubsolution{...}'}%
2474 }%
2475 \global\booltrue{assignpoints@insubsolution}%
2476 \stepcounter{assignpoints@subsolutioncount}%
2477 \getttitle[subexercise]{\theassignpoints@solutioncount.\theassignpoints@subsolutioncount}%
2478 \solutionpoints@subsolution@begin
2479 %\begin{tcolorbox}[subsolutionpoints, #1]
2480 }{%
2481 %\end{tcolorbox}%
2482 \solutionpoints@subsolution@end%
2483 \global\boolfalse{assignpoints@insubsolution}%
2484 }
2485 %- Quiz environment
2486 %-----
2487 \RenewDocumentEnvironment{quiz}{ }{%
2488 \catcode`\^^M=\active
2489 \@ifnextchar[%
2490 {\catcode`\^^M=5 \quiz@start}
2491 {\catcode`\^^M=5 \quiz@start[]}}
2492 }{%
2493 \endVerbatimOut%
2494 %\VerbatimInput{\askreply@outfilename}%
2495 \ifaskreply@display
2496 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip,
2497 colupper=askreplysecondcolor, colback=black!15, colframe=black!50]
2498 % Empty versus given quiz title
2499 \iftoggle{assignpoints@checkemptystring}%
2500 {\strut\lightbf{\sffamily\quizname\space\currentquiznumber}%
2501 \hfill{\small\normalfont\sffamily\displaypoints*[quiz]{\currentquiznumber}}%
2502 }%
2503 {\strut\textsf{\lightbf{\normalsize\scshape\quizname\space\currentquiznumber\space}}%
2504 \textsf{\lightbf{\normalsize\scshape\enspace\textendash\enspace\currentquiztitle}}}%
2505 \hfill\textsf{\lightbf{\small\scshape%
2506 \displaypoints*[quiz]{\currentquiznumber}}}%
2507 }%
2508 \end{tcolorbox}\nobreak%\nolpagebreak?
2509 \askreplybox%
2510 %\vspace{-.5\baselineskip}
2511 \tikzpage\layer{\@askreplytikzquizframebox{askreplyframedbox, fill=white, draw=black!50}}%
2512 \input{\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
2513 \askreplynumberoflines{% Not to count the points twice
2514 \let\pointsoriginal\points
2515 \let\points\phantom%
2516 \input{\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
2517 \let\points\pointsoriginal
2518 }%
2519 %NoL: \theaskreplycountlines

```

```

2520     %\askreplynumberoflines{\input{\askreply@outfilename}}%
2521     \par\phantomtext%
2522     \ifnumgreater{\theaskreplycountlines}{1}{\par\vspace{-0.6\baselineskip}}%
2523     \endtikzpagelayer
2524     %\par\vspace{\dimexpr.5\baselineskip\relax}%
2525     \endaskreplybox
2526     \vspace{\askreply@afterskip}%
2527 \fi
2528 \ifaskreply@storing
2529     \ifx\askreply@title\empty%
2530         \askreply@filecopytoenv%
2531         {\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
2532         {\quizzesdir\jobname-quiz-\askreplytwodigits{\thequiz}.env}%
2533         {\string\begin{quiz}}%
2534         {\string\end{quiz}}%
2535         {\string[storing=false]}%
2536     \else
2537         \askreply@filecopytoenv%
2538         {\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
2539         {\quizzesdir\jobname-quiz-\askreplytwodigits{\thequiz}.env}%
2540         {\string\begin{quiz}}%
2541         {\string\end{quiz}}%
2542         {\string[storing=false, title={\askreply@title}]}%
2543     \fi
2544 \fi
2545 \assignpoints@storevaluetoaux%
2546     {\assignpointsprefix{quiz}@quiztitle}%
2547     {\theassignpoints@quizcount}%
2548     {\currentquiztitle}%
2549 \assignpoints@storevaluetoaux%
2550     {\assignpointsprefix{quiz}@points}%
2551     {\theassignpoints@quizcount}%
2552     {\strip@pt\assignpoints@currentquizpoints}% https://tex.stackexchange.com/questions/2810/
2553 \askreply@storevaluetoaux{quiz@quizID}{\thequiz}{ID:\thequiz}%
2554 %\askreply@storevaluetoaux{quiz@quiztitle}{\thequiz}{\currentquiztitle}%
2555 %\togglefalse{assignpoints@checkemptystring}%
2556 \global\boolfalse{assignpoints@inquiz}%
2557 \togglefalse{assignpoints@checkemptystring}%
2558 \ifaskreply@list
2559     \addcontentsline{loq}{quiz}{\protect\numberline{\thequiz}\currentquiztitle}%
2560 \fi
2561 }
2562 \def\quiz@start[#1]{%
2563     \pgfkeys{/askreply/.cd, #1}%
2564     \ifbool{assignpoints@inquiz}%
2565         {\PackageError{assignpoints}{You cannot nest quiz environments}}%
2566         {}%
2567     \ifbool{assignpoints@quiz@layoutdefined}{}{}%
2568     \PackageError{assignpoints}%

```

```

2569 {Option 'customlayout' requires you to define a quiz layout using
2570 at least \string\AtBeginQuiz{...}}
2571 }%
2572 \global\booltrue{assignpoints@inquiz}%
2573 \stepcounter{quiz}%
2574 \getenvID[quiz]{\thequiz}%
2575 %\getenvID[answer]{\thequiz}%
2576 \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
2577 \phantomsection\label{quiz:\thequiz}% To have correct \pageref link (see TeX.SX/49061)
2578 \setlength{\assignpoints@currentquizpoints}{0pt}%
2579 \global\assignpoints@currentquizpoints=\assignpoints@currentquizpoints%
2580 \ifx\askreply@title\@empty% WORKS!
2581   %\textbf{TRUE}
2582   \toggletrue{assignpoints@checkemptystring}%
2583 \else
2584   %\textbf{FALSE}
2585   \togglefalse{assignpoints@checkemptystring}%
2586   \renewcommand{\currentquiztitle}{\askreply@title}%
2587 \fi
2588 \stepcounter{assignpoints@quizcount}%
2589 \stepcounter{assignpoints@totalquizcount}%
2590 \ifcsname assignpoints@quiz@numberofquestions@\currentquiznumber\endcsname%
2591   \renewcommand{\numberofquestions}{%
2592     \assignpoints@readvaluefromaux{quiz}{numberofquestions@\currentquiznumber}}%
2593 \fi
2594 \ifx\askreply@envsymbol\@empty
2595   \renewcommand{\envsymbol}{\normalfont\faList}%
2596 \else
2597   \renewcommand{\envsymbol}{\normalfont\askreply@envsymbol}%
2598 \fi
2599 \settowidth{\envsymbolwidth}{\large\envsymbol}%
2600 \def\askreply@outfilename{\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
2601 \VerbatimOut{\askreply@outfilename}%
2602 }
2603 \NewDocumentEnvironment{quiz*}{o}{% Solely (no reference) or demonstration exercise
2604   \pgfkeys{/askreply/.cd, #1}%
2605   \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
2606   \stepcounter{quizdemo}
2607   \ifx\askreply@title\@empty% WORKS!
2608     \toggletrue{assignpoints@checkemptystring}%
2609   \else
2610     \togglefalse{assignpoints@checkemptystring}%
2611     \renewcommand{\currentquiztitle}{\askreply@title}%
2612   \fi
2613   \ifx\askreply@envsymbol\@empty
2614     \renewcommand{\envsymbol}{\normalfont\faList}%
2615   \else
2616     \renewcommand{\envsymbol}{\normalfont\askreply@envsymbol}%
2617   \fi

```

```

2618 \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2619 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip,
2620 colupper=askreplysecondcolor, colback=black!15, colframe=black!50]
2621 % Empty versus non-empty quiz title
2622 \iftoggle{assignpoints@checkemptystring}%
2623 {\strut\textsf{\textsc{\lightbf{\quizname\hfill\small\askreply@editpoints}}}}%
2624 {\strut\textsf{\textsc{\lightbf{\quizname\space\@Alph{\thequizdemo}%
2625 \enspace\textendash\enspace\currentquiztitle\hfill\small\askreply@editpoints}}}}%
2626 }%
2627 \end{tcolorbox}\nobreak%\nopagebreak?
2628 \askreplybox
2629 %\vspace{-.5\baselineskip}
2630 \tikzpagelayer{@askreplytikzquizframebox{askreplyframedbox, fill=white, draw=black!50}}
2631 \small
2632 }{%
2633 \par\phantomtext%
2634 \endtikzpagelayer
2635 \par\vspace{.5\baselineskip\relax}%
2636 \endaskreplybox
2637 \vspace{\askreply@afterskip}%
2638 \togglefalse{assignpoints@checkemptystring}%
2639 }
2640 %- Quizquestion environment (multiple answers)
2641 %- -----
2642 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
2643 %           [ #2 ] = Positionning the answer box: at [b] bottom (default), [c] centered or [t] top
2644 %           { #3 } = Mandatory correct answer numbers comma separated
2645 %           { #4 } = Mandatory wrong answer numbers comma separated
2646 %           { #5 } = Optional title
2647 %           ( #6 ) = Optional coordinates correction for positionning the answer (<dimx>,<dimy>)
2648 %           <#7> = Optional explanation text of the answer (usually given ;-))
2649 \RenewDocumentEnvironment{quizquestion}{ D<>{margin} O{b} m m G{} D({6pt,12pt} D<>{} )}%
2650 {
2651 \stepcounter{quizquestion}%
2652 \label{quizquestion:\thequiz.\thequizquestion}%
2653 \ifbool{assignpoints@inquizquestion}%
2654 {\PackageError{assignpoints}{You cannot nest quizquestion environments}}%
2655 {}%
2656 \global\booltrue{assignpoints@inquizquestion}%
2657 \setlength{assignpoints@currentquizquestionpoints}{0pt}%
2658 \global\assignpoints@currentquizquestionpoints=\assignpoints@currentquizquestionpoints%
2659 \renewcommand{\currentquizquestiontitle}{#5}%
2660 \ifstrempy{#5}%
2661 {\toggletrue{assignpoints@checkemptystring}}%
2662 {\togglefalse{assignpoints@checkemptystring}}%
2663 \stepcounter{assignpoints@quizquestioncount}%
2664 \let\mcqproposal\mcqproposalMultiple%
2665 \setcounter{mcqtrialnumber}{-1}
2666 \begin{tcolorbox}[quizquestionpoints]

```

```

2667 }
2668 {
2669   \mcqverify{#3}{#4}\hspace{0.1\linewidth}%
2670   \ifdimless{\marginparwidth}{118pt}% 41 mm = 116.2204 pt / 42 mm = 119.0550 pt
2671   {\mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
2672   {\ifstrequal{#1}{margin}%
2673     {\mcqdisplayanswer{#2}{#7}{#6}}% Display answer in the margin
2674     {\ifstrequal{#1}{tooltip}%
2675       {\mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
2676       {\PackageWarning{askreply}%
2677         {Key `#1' is not recognised. It has been set as `tooltip'}}%
2678       \mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
2679     }
2680   }
2681 }%
2682 \hfill\mcqreset%
2683 \end{tcolorbox}%
2684 \assignpoints@storevaluetoaux%
2685 {\assignpointsprefix{quiz}@points}%
2686 {\theassignpoints@quizcount.\theassignpoints@quizquestioncount}%
2687 {\strip@pt\assignpoints@currentquizquestionpoints}%
2688 \askreply@storevaluetoaux{quiz@quizquestiontitle}%
2689 {\thequizquestion}{\currentquizquestiontitle}%
2690 \global\boolfalse{assignpoints@inquizquestion}%
2691 \togglefalse{assignpoints@checkemptystring}%
2692 }
2693 %- Quizquestion* environment (single exclusive answer)
2694 %-----
2695 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
2696 %           [#2] = Positioning the answer box: at [b] bottom (default), [c] centered or [t] top
2697 %           {#3} = Mandatory correct answer number (only one)
2698 %           {#4} = Mandatory wrong answer numbers comma separated
2699 %           {#5} = Optional title
2700 %           (#6) = Optional coordinates correction for positioning the answer (<dimx>,<dimy>)
2701 %           <#7> = Optional explanation text of the answer (usually given ;-))
2702 \NewDocumentEnvironment{quizquestion*}{ D<>{margin} O{b} m m G{} D(){6pt,12pt} D<>{} }%
2703 {
2704   \stepcounter{quizquestion}%
2705   \label{quizquestion:\thequiz.\thequizquestion}%
2706   \ifbool{assignpoints@inquizquestion}%
2707     {\PackageError{assignpoints}{You cannot nest quizquestion environments}}%
2708     {}%
2709   \global\booltrue{assignpoints@inquizquestion}%
2710   \setlength{\assignpoints@currentquizquestionpoints}{0pt}%
2711   \global\assignpoints@currentquizquestionpoints=\assignpoints@currentquizquestionpoints%
2712   \renewcommand{\currentquizquestiontitle}{#5}%
2713   \ifstrempy{#5}%
2714     {\toggletrue{assignpoints@checkemptystring}}%
2715     {\togglefalse{assignpoints@checkemptystring}}%

```

```

2716 \stepcounter{assignpoints@quizquestioncount}%
2717 \let\mcqproposal\mcqproposalSingle%
2718 \setcounter{mcqtrialnumber}{-1}
2719 \begin{tcolorbox}[quizquestionpoints]
2720 }
2721 {
2722 \mcqverify{#3}{#4}\hspace{0.1\linewidth}%
2723 \ifdimless{\marginparwidth}{118pt}% 41 mm = 116.2204 pt / 42 mm = 119.0550 pt
2724 {\mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
2725 {\ifstrequal{#1}{margin}%
2726 {\mcqdisplayanswer{#2}{#7}{#6}} % Display answer in the margin
2727 {\ifstrequal{#1}{tooltip}%
2728 {\mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
2729 {\PackageWarning{askreply}%
2730 {Key\space `#1'\space is\space not\space recognised.\space
2731 It\space has\space been\space set\space as\space `tooltip'}}%
2732 \mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
2733 }
2734 }
2735 }%
2736 \hfill\mcqreset%
2737 \end{tcolorbox}%
2738 \assignpoints@storevaluetoaux%
2739 {\assignpointsprefix{quiz}@points}%
2740 {\theassignpoints@quizcount.\theassignpoints@quizquestioncount}%
2741 {\strip@pt\assignpoints@currentquizquestionpoints}%
2742 \askreply@storevaluetoaux{quiz@quizquestiontitle}%
2743 {\thequizquestion}{\currentquizquestiontitle}%
2744 \global\boolfalse{assignpoints@inquizquestion}%
2745 \togglefalse{assignpoints@checkemptystring}%
2746 }
2747 %- Quizquestion environment (multiple answers)
2748 %-----
2749 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
2750 %      [2] = Positionning the answer box: at [b] bottom (default), [c] centered or [t] top
2751 %      {#3} = Mandatory correct answer numbers comma separated
2752 %      {#4} = Mandatory wrong answer numbers comma separated
2753 %      {#5} = Optional title
2754 %      (#6) = Optional coordinates correction for positionning the answer (<dimx>,<dimy>)
2755 %      <#7> = Optional explanation text of the answer (usually given ;-))
2756 %- Quiz question demo environment (single exclusive answer)
2757 \NewDocumentEnvironment{mcqdemo}{ D<>{margin} O{b} m m G{} D(){6pt,12pt} D<>{} }%
2758 {
2759 \stepcounter{mcqdemo}%
2760 \renewcommand{\currentquizquestiontitle}{#5}%
2761 \ifstreempty{#5}%
2762 {\toggletrue{assignpoints@checkemptystring}}%
2763 {\togglefalse{assignpoints@checkemptystring}}%
2764 \let\mcqproposal\mcqproposalMultipleDemo%

```



```

2765 \begin{tcolorbox}[mcqdemo]
2766 }
2767 {
2768 \mcqverifydemo{#3}{#4}\hspace{0.1\linewidth}%
2769 \ifdimless{\marginparwidth}{118pt}% 41 mm = 116.2204 pt / 42 mm = 119.0550 pt
2770 {\mcqdisplayanswerdemo*{#2}{#7}(#6)}% Display as tooltip
2771 {\ifstrequal{#1}{margin}%
2772 {\mcqdisplayanswerdemo{#2}{#7}(#6)} % Display answer in the margin
2773 {\ifstrequal{#1}{tooltip}%
2774 {\mcqdisplayanswerdemo*{#2}{#7}(#6)}% Display as tooltip
2775 {\PackageWarning{askreply}%
2776 {Key\space `#1'\space is\space not\space recognised.\space
2777 It\space has\space been\space set\space as\space `tooltip'}%
2778 \mcqdisplayanswerdemo*{#2}{#7}(#6)}% Display as tooltip
2779 }
2780 }
2781 }%
2782 \hfill\mcqresetdemo%
2783 \end{tcolorbox}%
2784 \togglefalse{assignpoints@checkemptystring}%
2785 }
2786 %-----
2787 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
2788 %           [#2] = Positioning the answer box: at [b] bottom (default), [c] centered or [t] top
2789 %           [#3] = Mandatory correct answer number (only one)
2790 %           [#4] = Mandatory wrong answer numbers comma separated
2791 %           [#5] = Optional title
2792 %           [#6] = Optional coordinates correction for positioning the answer (<dimx>,<dimy>)
2793 %           <#7> = Optional explanation text of the answer (usually given ;-))
2794 \NewDocumentEnvironment{mcqdemo*}{ D<>{margin} O{b} m m G{} D(){6pt,12pt} D<>{} }%
2795 {
2796 \stepcounter{mcqdemo}%
2797 \renewcommand{\currentquizquestiontitle}{#5}%
2798 \ifstreempty{#5}%
2799 {\toggletrue{assignpoints@checkemptystring}}%
2800 {\togglefalse{assignpoints@checkemptystring}}%
2801 \let\mcqproposal\mcqproposalSingleDemo%
2802 \begin{tcolorbox}[mcqdemo]
2803 }
2804 {
2805 \mcqverifydemo{#3}{#4}\hspace{0.1\linewidth}%
2806 \ifdimless{\marginparwidth}{118pt}% 41 mm = 116.2204 pt / 42 mm = 119.0550 pt
2807 {\mcqdisplayanswerdemo*{#2}{#7}(#6)}% Display as tooltip
2808 {\ifstrequal{#1}{margin}%
2809 {\mcqdisplayanswerdemo{#2}{#7}(#6)} % Display answer in the margin
2810 {\ifstrequal{#1}{tooltip}%
2811 {\mcqdisplayanswerdemo*{#2}{#7}(#6)}% Display as tooltip
2812 {\PackageWarning{askreply}%
2813 {Key\space `#1'\space is\space not\space recognised.\space

```

```

2814         It\space has\space been\space set\space as\space `tooltip'}`%
2815         \mcqdisplayanswerdemo*{#2}{#7}({#6})% Display as tooltip
2816     }
2817 }
2818 }%
2819 \hfill\mcqresetdemo%
2820 \end{tcolorbox}%
2821 \togglefalse{assignpoints@checkemptystring}%
2822 }
2823 }{% If `assignpoints` is not loaded, defining "exercises" and "quizzes" environments
2824 %- With the following, one is able to assign points, even if they are not displayed
2825 %- It can be useful to prepare exercises and solutions in a first step
2826 \let\points\vphantom
2827 \NewDocumentCommand{\itempoints}{ s m }{%
2828     \IfBooleanTF{#1}{\vphantom{#2}}{\vphantom{#2}}
2829 }
2830 \providecommand{\currentexercisetitle}{}
2831 \providecommand{\currentsubexercisetitle}{}
2832 \providecommand{\currentquiztitle}{}
2833 \providecommand{\currentquizquestiontitle}{}
2834 %
2835 %- Exercise environment
2836 %-----
2837 \NewDocumentEnvironment{exercise}{ }{%
2838     \catcode`\^^M=\active
2839     \@ifnextchar[%
2840         {\catcode`\^^M=5 \exercise@start}
2841         {\catcode`\^^M=5 \exercise@start[]}
2842 }{%
2843     \endVerbatimOut%
2844     \ifaskreply@display
2845         \ifdefstring{\askreply@level}{basic}{%
2846             \toggletrue{askreply@level@display@on}%
2847             \gdef\asreply@firstlevel@color{askreplythirdcolor}%
2848             \gdef\asreply@secondlevel@color{lightgray}%
2849             \gdef\asreply@thirdlevel@color{lightgray}%
2850         }{\ifdefstring{\askreply@level}{intermediate}{%
2851             \toggletrue{askreply@level@display@on}%
2852             \gdef\asreply@firstlevel@color{lightgray}%
2853             \gdef\asreply@secondlevel@color{askreplythirdcolor}%
2854             \gdef\asreply@thirdlevel@color{lightgray}%
2855         }{\ifdefstring{\askreply@level}{advanced}{%
2856             \toggletrue{askreply@level@display@on}%
2857             \gdef\asreply@firstlevel@color{lightgray}%
2858             \gdef\asreply@secondlevel@color{lightgray}%
2859             \gdef\asreply@thirdlevel@color{askreplythirdcolor}%
2860         }}}%level=none
2861     }%
2862 }%

```

```

2863 \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip]
2864   % Empty versus non-empty exercise title
2865   \ifdefempty{\currentexercisetitle}%
2866     {\strut\lightbf{\exercisename\space\theexercise}}%
2867     {\strut\lightbf{\exercisename\space\theexercise%
2868       \enspace\textendash\enspace\currentexercisetitle}%
2869     }%
2870 \end{tcolorbox}\nobreak%\nopagebreak?
2871 \askreplybox
2872 \tikzpageLayer{\@askreplytikzframebox{askreplyframedbox, fill=black!6}{askreplyfirstcolor}}
2873 \input{\exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}
2874 \par\phantomtext%
2875 \ifdefempty{\solutionID}%
2876   {\relax}%
2877   {\par\hfill\raisebox{-2.5pt}{%
2878     \textcolor{askreplysecondcolor}{%
2879       \itshape\footnotesize{\normalfont\faSquare}%
2880       \enspace Solution\space page~\pageref{solution:\solutionID}%
2881     }}%
2882   }%
2883 \endtikzpageLayer
2884 \par\vspace{\dimexpr.5\baselineskip\relax}%
2885 \endaskreplybox
2886 \vspace{\askreply@afterskip}%
2887 \fi
2888 \ifaskreply@storing
2889   \ifx\askreply@title\empty%
2890     \askreply@filecopytoenv%
2891     {\askreply@outfilename}
2892     {\exercisedir\jobname-exercise-\askreplytwodigits{\theexercise}.env}%
2893     {\string\begin{exercise}}%
2894     {\string\end{exercise}}%
2895     {\string[storing=false]}%
2896   \else
2897     \askreply@filecopytoenv%
2898     {\exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2899     {\exercisedir\jobname-exercise-\askreplytwodigits{\theexercise}.env}%
2900     {\string\begin{exercise}}%
2901     {\string\end{exercise}}%
2902     {\string[storing=false, title=\askreply@title]}%
2903   \fi
2904 \fi
2905 \askreply@storevaluetoaux{exercise@exerciseID}{\theexercise}{ID:\theexercise}%
2906 \askreply@storevaluetoaux{exercise@exercisetitle}{\theexercise}{\currentexercisetitle}%
2907 \ifaskreply@list
2908   \addcontentsline{loe}{exercise}{\protect\numberline{\theexercise}\currentexercisetitle}%
2909 \fi
2910 \togglefalse{askreply@level@display@on}%
2911 }

```

```

2912 \def\exercise@start[#1]{%
2913   \pgfkeys{/askreply/.cd, #1}%
2914   \stepcounter{exercise}%
2915   \getenvID[exercise]{\theexercise}%
2916   \getenvID[solution]{\theexercise}%
2917   \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
2918   \phantomsection\label{exercise:\theexercise}% To have correct \pageref link (see TeX.SX/49061)
2919   \ifx\askreply@title\@empty% WORKS!
2920   \else
2921     \renewcommand{\currentexercisetitle}{\askreply@title}%
2922   \fi
2923   \renewcommand{\envsymbol}{%
2924     \normalfont\faIcon{laptop-code}}% \faIcon{feather-alt}} \faPenFancy \faMarker
2925   \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2926   \def\askreply@outfilename{%
2927     \exercisedir\jobname-exercise-body-\askreplytwodigits{\theexercise}.ltx}%
2928   \VerbatimOut{\askreply@outfilename}%
2929 }
2930 %- Subexercise environment
2931 %-----
2932 \NewDocumentEnvironment{subexercise}{ G{} }
2933   {\stepcounter{subexercise}%
2934    \renewcommand{\currentsubexercisetitle}{#1}
2935    \begin{tcolorbox}[subexercisenopoint]
2936   }{\end{tcolorbox}%
2937    \askreply@storevaluetoaux{exercise@subexercisetitle}%
2938    {\theexercise.\thesubexercise}{\currentsubexercisetitle}%
2939 }
2940 %
2941 %- Solution environment
2942 %-----
2943 \NewDocumentEnvironment{solution}{ }{%
2944   \catcode`\^^M=\active
2945   \@ifnextchar[%
2946     {\catcode`\^^M=5 \solution@start}
2947     {\catcode`\^^M=5 \solution@start[]}]
2948 }{%
2949   \endVerbatimOut%
2950   \ifaskreply@display
2951     \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip,
2952       colback=askreplysecondcolor!75!black, colframe=askreplysecondcolor]
2953     % Empty versus non-empty solution title
2954     \ifstrempy{\currentexercisetitle}%
2955       {\strut\lightbf{\solutionname\space\theassignpoints@solutioncount\space%
2956         \hfill\small%
2957         (\exercisenamecap\space\hyperlink{\exerciseID}{\thesolution},\space%
2958         page\space\pageref{exercise:\thesolution})}}%
2959       }%
2960       {\strut\lightbf{\solutionname\space\thesolution\space%

```

```

2961         \enspace\textendash\enspace\currentexercisetitle\space%
2962         \enspace{\small(page\space\pageref{exercise:\thesolution})}}}%
2963     }%
2964 \end{tcolorbox}\nobreak%\nopagebreak?
2965 \askreplybox
2966     \tikzpageLayer{\askreplytikzframebox{askreplyframedbox, fill=black!6}{askreplyfirstcolor}}
2967     \input{\askreply@outfilename}
2968     \par\phantomtext%
2969     \vspace*{.5\askreplyboxvskip}%
2970 \endtikzpageLayer
2971 \par\vspace{\dimexpr.5\baselineskip\relax}%
2972 \endaskreplybox
2973 \vspace{\askreply@afterskip}%
2974 \fi
2975 \ifaskreply@storing
2976     \askreply@filecopytoenv%
2977     {\exercisedir\jobname-solution-body-\askreplytwodigits{\thesolution}.ltx}%
2978     {\exercisedir\jobname-solution-\askreplytwodigits{\thesolution}.env}%
2979     {\string\begin{solution}}%
2980     {\string\end{solution}}%
2981     {\string[storing=false]}%
2982 \fi
2983 \askreply@storevaluetoaux{exercise@solutionID}{\thesolution}{ID:\thesolution}%
2984 }
2985 \def\solution@start[#1]{%
2986     \pgfkeys{/askreply/.cd, #1}%
2987     \ifx\askreply@ID\empty%
2988         \stepcounter{solution}%
2989         \getenvID[solution]{\thesolution}%
2990     \else
2991         \setcounter{solution}{\askreply@ID}%
2992         \getenvID[solution]{\thesolution}%
2993     \fi
2994     \stepcounter{solutionnumber}%
2995     \hypersetup{unicode, pdfborder=0 0 0, linkcolor=white}%
2996     \phantomsection\label{solution:\thesolutionID}%
2997     \renewcommand{\envsymbol}{\faLightbulb}%
2998     \settowidth{\envsymbolwidth}{\normalfont\large\envsymbol}%
2999     \getenvtitle[exercise]{\thesolution}%
3000     \def\askreply@outfilename{%
3001         \exercisedir\jobname-solution-body-\askreplytwodigits{\thesolution}.ltx}%
3002     \VerbatimOut{\askreply@outfilename}%
3003 }
3004 %- Subsolution environment
3005 %-----
3006 \NewDocumentEnvironment{subsolution}{0}{ }
3007     {\stepcounter{subsolution}%
3008     \getenvtitle[subexercise]{\thesolution.\thesubsolution}%
3009     \begin{tcolorbox}[subsolutionnpoint]

```

```

3010 }{\end{tcolorbox}}
3011 %- Quiz environment
3012 %-----
3013 \NewDocumentEnvironment{quiz}{ }{%
3014   \catcode`\^^M=\active
3015   \@ifnextchar[%
3016     {\catcode`\^^M=5 \quiz@start}
3017     {\catcode`\^^M=5 \quiz@start[]}}
3018 }{%
3019   \endVerbatimOut%
3020   \ifaskreply@display
3021     \begin{tcolorbox}[askreplybackstageboxtitle, before skip=\askreply@beforeskip,
3022       colupper=askreplysecondcolor, colback=black!15, colframe=black!50]
3023       % Empty versus non-empty exercise title
3024       \ifdefempty{\currentquiztitle}%
3025         {\strut\lightbf{\quizname\space\thequiz}}%
3026         {\strut\lightbf{\quizname\space\thequiz}%
3027           \enspace\textendash\enspace\currentquiztitle}%
3028       }%
3029     \end{tcolorbox}\nobreak%\nopagebreak?
3030   \askreplybox
3031     %\vspace[-.5\baselineskip]
3032     \tikzpagelayer{@askreplytikzquizframebox[askreplyframedbox, fill=white, draw=black!50]}
3033       \input{\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}
3034       \par\phantomtext%
3035       %\vspace[-.5\baselineskip]%
3036     \endtikzpagelayer
3037     \par\vspace{\dimexpr.5\baselineskip\relax}%
3038   \endaskreplybox
3039   \vspace{\askreply@afterskip}%
3040 \fi
3041 \ifaskreply@storing
3042   \ifx\askreply@title\empty%
3043     \askreply@filecopytoenv%
3044       {\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
3045       {\quizzesdir\jobname-quiz-\askreplytwodigits{\thequiz}.env}%
3046       {\string\begin{quiz}}%
3047       {\string\end{quiz}}%
3048       {\string[storing=false]}%
3049   \else
3050     \askreply@filecopytoenv%
3051       {\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
3052       {\quizzesdir\jobname-quiz-\askreplytwodigits{\thequiz}.env}%
3053       {\string\begin{quiz}}%
3054       {\string\end{quiz}}%
3055       {\string[storing=false, title={\askreply@title}]}%
3056   \fi
3057 \fi
3058 \askreply@storevaluetoaux{quiz@quizID}{\thequiz}{ID:\thequiz}%

```

```

3059 \askreply@storevaluetoaux{quiz@quiztitle}{\thequiz}{\currentquiztitle}%
3060 \ifaskreply@list
3061   \addcontentsline{loq}{quiz}{\protect\numberline{\thequiz}\currentquiztitle}%
3062   \fi
3063 }
3064 \def\quiz@start[#1]{%
3065   \pgfkeys{/askreply/.cd, #1}%
3066   \stepcounter{quiz}%
3067   \getenvID[quiz]{\thequiz}%
3068   \hypersetup{unicode, pdfborder=0 0 0, linkcolor=askreplyfirstcolor}%
3069   \phantomsection\label{quiz:\thequiz}% To have correct \pageref link (see TeX.SX/49061)
3070   \ifx\askreply@title\empty% WORKS!
3071   \else
3072     \renewcommand{\currentquiztitle}{\askreply@title}%
3073   \fi
3074   \renewcommand{\envsymbol}{\normalfont\faList}%
3075   \settowidth{\envsymbolwidth}{\large\envsymbol}%
3076   \def\askreply@outfilename{\quizzesdir\jobname-quiz-body-\askreplytwodigits{\thequiz}.ltx}%
3077   \VerbatimOut{\askreply@outfilename}%
3078 }
3079 %- Quizquestion environment (multiple answers)
3080 %-----
3081 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
3082 %           [ #2 ] = Positionning the answer box: at [b] bottom (default), [c] centered or [t] top
3083 %           { #3 } = Mandatory correct answer numbers comma separated
3084 %           { #4 } = Mandatory wrong answer numbers comma separated
3085 %           { #5 } = Optional title
3086 %           ( #6 ) = Optional coordinates correction for positionning the answer (<dimx>,<dimy>)
3087 %           <#7> = Optional explanation text of the answer (usually given ;-))
3088 \NewDocumentEnvironment{quizquestion}{ D<>{\margin} 0[b] m m G{} D(){6pt,12pt} D<>{} }%
3089 {
3090   \stepcounter{quizquestion}%
3091   \label{quizquestion:\thequiz.\thequizquestion}%
3092   \renewcommand{\currentquizquestiontitle}{#5}%
3093   \let\mcqproposal\mcqproposalMultiple%
3094   \begin{tcolorbox}[quizquestionnopoint]
3095   }
3096   {
3097     \mcqverify{#3}{#4}\hspace{0.1\linewidth}%
3098     \ifdimless{\marginparwidth}{118pt}% 41 mm = 116.2204 pt / 42 mm = 119.0550 pt
3099       {\mcqdisplayanswer*[#2]{#7}(#6)}% Display as tooltip
3100       {\ifstrequal{#1}{\margin}%
3101         {\mcqdisplayanswer*[#2]{#7}(#6)}% Display answer in the margin
3102         {\ifstrequal{#1}{tooltip}%
3103           {\mcqdisplayanswer*[#2]{#7}(#6)}% Display as tooltip
3104           {\PackageWarning{askreply}%
3105             {Key\space `#1'\space is\space not\space recognised.\space
3106             It\space has\space been\space set\space as\space `tooltip'}%
3107           \mcqdisplayanswer*[#2]{#7}(#6)}% Display as tooltip

```

```

3108     }
3109   }
3110 }%
3111 \hfill\mcqreset%
3112 \end{tcolorbox}%
3113 \askreply@storevaluetoaux{quiz@quizquestiontitle}%
3114 {\thequizquestion}{\currentquizquestiontitle}%
3115 }
3116 %- Quizquestion* environment (single exclusive answer)
3117 %-----
3118 %- Usage - <#1> = Optional way to display the answer, in the margin (default) or as tooltip
3119 %           [ #2 ] = Positionning the answer box: at [b] bottom (default), [c] centered or [t] top
3120 %           { #3 } = Mandatory correct answer number (only one)
3121 %           { #4 } = Mandatory wrong answer numbers comma separated
3122 %           { #5 } = Optional title
3123 %           ( #6 ) = Optional coordinates correction for positionning the answer (<dimx>,<dimy>)
3124 %           <#7> = Optional explanation text of the answer (usually given ;-))
3125 \NewDocumentEnvironment{quizquestion*}{ D<>{margin} O{b} m m G{} D(){6pt,12pt} D<>{} }%
3126 {
3127   \stepcounter{quizquestion}%
3128   \label{quizquestion:\thequiz.\thequizquestion}%
3129   \renewcommand{\currentquizquestiontitle}{#5}%
3130   \let\mcqproposal\mcqproposalSingle%
3131   \begin{tcolorbox}[quizquestionnopoint]
3132   }
3133   {
3134     \mcqverify{#3}{#4}\hspace{0.1\linewidth}%
3135     \ifdimless{\marginparwidth}{118pt}% 41 mm = 116.2204 pt / 42 mm = 119.0550 pt
3136       {\mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
3137       {\ifstrequal{#1}{margin}%
3138         {\mcqdisplayanswer{#2}{#7}{#6}} % Display answer in the margin
3139         {\ifstrequal{#1}{tooltip}%
3140           {\mcqdisplayanswer*{#2}{#7}{#6}}% Display as tooltip
3141           {\PackageWarning{askreply}%
3142             {Key\space `#1'\space is\space not\space recognised.\space
3143             It\space has\space been\space set\space as\space `tooltip'}%
3144             \mcqdisplayanswer*{#2}{#7}{#6}% Display as tooltip
3145           }
3146         }
3147       }%
3148     \hfill\mcqreset%
3149     \end{tcolorbox}%
3150     \askreply@storevaluetoaux{quiz@quizquestiontitle}%
3151     {\thequizquestion}{\currentquizquestiontitle}%
3152   }
3153 }
3154 \endinput
3155
3156 %%%

```



```
3157 %%- End of `askreply` package  
3158 %%%%%
```

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