

This is a package for doing tests with some multiple choice questions and some partial credit questions using LaTeX.

There are three ways to typeset the same data. The first is the preliminary run(s) which should have the first multiple choice answer as correct and leave very little white space to save paper. The second is the final run which puts in whitespace as requested, permutes the answers as requested and can print a cover page and an answer page with the correct answers marked. The third way is to produce a web page so the students can review the test at their leisure. Space between problems is kept to a minimum, you can get a marked answer sheet and a print out of solutions to the partial credit questions.

The first command you need after the usual `\begin{document}` command is `\runType[prelim]`. The 'prelim' can be replaced by 'final' or 'webpage' as alluded to in the last paragraph to get the required behavior. Just plain `\runType` without an argument gives the 'prelim' style.

Next comes the 'answersheetmatter' environment. There are four commands in it:

```
\whichCourse[]  
\whichExam[]  
\dateOfExam[mm/dd/yyyy]  
\lengthOfTimeForExam[one hour]
```

whose format should be pretty obvious. The data is only used by the answer sheet macros *except* if the date is not filled in as a date later than the date of the run, an additional page is generated at the front with a warning unless you are running the 'webpage' option. (If you really don't want the warning page, a `\printWarnfalse` will kill the warning page.) This was added after I made up the third exam for a course by copying the second but forgot to change the date.

Inside the 'answersheetmatter' environment there can be a 'multiplechoiceStyle' environment. This handles the multiple choice part of the answer sheet. The environment takes one variable, either [dotted] or [blank] with a default of [blank] if none is present. If the value is [dotted], a dotted line will be drawn after each page break on the answer sheet to help keep the students correctly matching the problem from the test with the line on the answer sheet.

There is one `\ll` command for each problem. The format for this command is a number, which is the problem number and then a space followed by 5 numbers from 1 to 5, each occurring once. The five numbers give the permutation for the answers. The first answer is put into the position given by the first number; the second answer into the position given by the second number and so on.

After completing the 'answersheetmatter' environment, there is an 'exam' environment where the actual exam is written. The problem is written in the 'problem' environment and if multiple choice answers are desired, an 'answers' environment needs to be included within the 'problem' environment.

The 'problem' environment is very simple - just type the problem within the environment. The problem gets numbered correctly and the program keeps track of various house keeping chores. There is a global variable `\problemPoints` which is just a string put immediately after the problem number. The 'problem' environment has one optional variable: if it is present it is a string which will be used for `\problemPoints` in this one problem. If there is an 'answers' environment, then the problem is treated as a multiple choice problem. The first entry in the environment is a variable keeping track of the spacing for the answers. It has the form `dd...` where `d` is a digit setting the spacing for each answer and the `d...` is a string of one or more digits setting the number of problems on each row. So for example, `55` sets five answers on one row with even spacing; `441` sets 4 answers on the first row and 1 on the second again spaced evenly; `414` has the same spacing but with 1 answer on the first row and 4 on the second. There are some 1 digit abbreviations, `5` is `55`, `4` is `441`, `3` is `332`, `2` is `2221` and `1` is `111111`.

After the variable setting the lines come the actual answers, separated by `\\`'s. The first answer should be the correct one.

Inside the 'problem' environment one can also have a 'solution' environment. Here you can write a solution to the problem which can be printed in the 'webpage' version of the exam.

The 'answer' environment accepts an optional argument. If present, the argument is a string of 5 numbers, 1-5 in some order. If the argument is present, it becomes the permutation for this problem overriding any other value previously set. It is useful for setting a permutation if you want an explicit order. The value for the permutation is the same as for the permutation part of the `\ll` variable (see above).

There are two commands to produce answer sheets

- `\makeanswersheet` - produces an answer sheet whenever it is invoked during a 'final' run. It can take a variable which it prints on the instructor line of the answer sheet and on the pages of the exam.
- `\makemarkedanswersheet` - does the same as `\makeanswersheet` except that it puts a black dot over the correct answer for each multiple choice problem and it can be invoked during both a 'final' and a 'webpage' run.

There are two commands to make setting various variables easier if you have a standard test of a bunch of multiple choice questions followed by some partial credit questions.

- `\multiplechoiceStart` - invoke before the first `\begin{problem}`. It takes one variable which it prints immediately after the problem number and is usually the number of points the problem is worth.
- `\partialcreditStart` - invoke after the last `\end{problem}` which is a multiple choice problem. It too takes one variable which it prints immediately after the problem number and is usually the number of points the problem is worth.

An all multiple choice exam usually has too many problems to have only one column of answers on the answer page. The command `\breakAnswersAt` will divide the answers into two columns on the answer sheet.

`\showSolutions` adds the solutions to the end of the test if you are in 'webpage' mode

`\makeanswersheet` makes an unmarked answer sheet - usually called just before `\begin{exam}` so the first page is an answer sheet.

`\makeanswersheet` makes an answer sheet with the correct answer bulleted - usually called just before `\end{exam}` so the last page is a marked answer sheet.