Contents

1 Introduction

This document describes a piece of software developed at IBM's Thomas J. Watson Research Center to aid in the employment submission process. The goals of the software and its documentation are:

1. to enable applicants to produce attractive resumes, abstracts, cover letters, and mailing labels with minimal effort;

2. to provide advice on creating effective resumes, including the tailoring of applicant information to specific employers;

3. to lay the foundation for automating the application process by making the initial phases entirely electronic.

This work is based on the notion of a "tagged file" containing data and tags which identify the data; a simple example might be the string "`George B. Leeman, Jr.`" marked with the tag "`\name`." The applicant sends a tagged file to employers who accept such electronic input. However, the applicant may also create paper copies, if they are needed. One may use any formatter or word processor, but special support is provided for the two document preparation systems called TeX and LaTeX, which are extremely popular in universities, industry, and the publishing world. TeX [2] is a sophisticated program capable of producing high-quality typesetting, especially for mathematical text. Its author, Professor Donald E. Knuth of Stanford University, is a remarkable individual whose brilliance, hard work, and gifted writing style have combined to make many long-lasting contributions to the technical community. Leslie Lamport, an internationally well-known computer scientist at Digital Equipment Corporation, has built a collection of TeX commands called LaTeX [3] which capture the document's structure and hence free the user from dealing with more primitive formatting commands.

1.1 Rationale

Not too long ago the technical publishing world was marked by much waste and duplication of effort. Researchers wrote complicated papers, typically by creating elaborate text files as input to sophisticated formatting programs. The latter produced impressive printed documents which were then sent to

journals for publication. If accepted, the journal's typesetters then retyped the entire paper, essentially duplicating the work of the author! To make matters worse, the galley proofs had to be read by the authors, and errors in complicated mathematical text were inevitable.

Today there are many journals which accept an electronic file of LaTeX commands plus text, and hence the data entry is done only once, by the author. The need to proofread journal galleys is almost eliminated.

Unfortunately there is a procedure in which such waste and duplication still occurs: the application for employment. University students and others seeking jobs produce fancy paper resumes and send them to employers. The employers retype data about the applicants and forward them to possible hiring managers. A large portion of the data entry at the receiving end is duplicating the task already completed by the applicant. Furthermore, the applicant is likely to experience some delay between his request and a reply from the employer; with an electronic system the response could be quicker and sometimes instantaneous.

The main point of this report is to discuss the first set of tools which will make the application process electronic. The applicant creates a tagged file; the form we recommend consists of LaTeX commands and text, but in fact any formatter or word processor can be used. The interface for LaTeX is designed so that the applicant does not have to know this system; he simply fills in the blanks to a template, much like completing a paper form. The file is shipped to employers who can use it for electronic processing, and the user can run LaTeX on the same file to produce attractive paper copies for employers perferring that medium. We also describe other possible tagged files which do not make use of LaTeX. This report gives details on the file creation process and provides tips for creating effective resumes, with the understanding that the recommendations are the opinions of the author and do not necessarily represent a statement of policy by the IBM Corporation.

1.2   The Legal Stuff

Knuth and Lamport made a major decision to give TeX and LaTeX to the world; the source code is available to anyone free of charge. The systems have enjoyed wide exposure, because they are marvellously engineered. However, freedom to examine the code by sympathetic and interested users has also

led to corrections and refinements of the systems. We are distributing this software to anyone at no cost, and we hope it will gain wide use in the employment submission process by *any* employer, not just IBM.

This software resides on an Internet server, called software.watson.ibm-.com, located at the IBM Thomas J. Watson Research Center in Yorktown Heights, NY. A user with access to the Internet may employ the File Transfer Protocol (FTP) to obtain files from such a server. Internet access may require a password; check with the systems administrator at your installation to determine the details. Typically the user logs onto the server remotely with a user name `anonymous` and requests files from the server. An annotated sample interaction appears in Appendix A. This process of file retrieval is called "anonymous FTP."

The software described here is essentially a set of new TeX commands (called "macros"—see chapter 20 of [2]). It makes use of a modified form of a LaTeX style file called resume.sty [1] written by Stephen Gildea, with enhancements by Jerry Leichter and this author. The file is available via anonymous FTP from several university servers.

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   Copies of these modifications should be sent to George B. Leeman Jr. at the electronic address watson.ibm.com.

1.3   How to Avoid Reading This Report

In his wonderful user's guide and reference manual [3], Lamport includes a
section with a similar title, and for good reason. Many people prefer to learn
a system by playing with it, rather than reading reports. For such individuals
we provide sample files with slightly differing interfaces. The files all have
the form

$$/\texttt{pub/ibmres-tex/}\mathit{file\_name.extension},$$

where the last four characters of the *file_name* are `_c_e`, `_c_f`, `_u_e`, or
`_u_f`. The letters `c` and `u` stand for "commented" and "uncommented," re-
spectively, and the letters `e` and `f` mean "empty" and "filled in," respectively.
The `c` files have comment lines, identified by a percent sign in column 1, to
describe the commands which follow; the `u` files have few such lines. The `e`
files have no data filled in, while the `f` files have filled-in examples. Thus all
four are skeletons which can be modified, and you may choose the interface
you prefer. Using a text editor you then enter appropriate text and give the
new file a more sensible name.

There are different sets of files, depending on how the user wants to
generate his resumes and other materials.

1. *resume in the recommended format for LATEX.* This is the form we
   recommend, especially for users who have not yet created any resume.
   The files for this case are named

       /pub/ibmres-tex/res_c_e.ltx, /pub/ibmres-tex/res_c_f.ltx,
       /pub/ibmres-tex/res_u_e.ltx, /pub/ibmres-tex/res_u_f.ltx.

2. *resume not in the recommended format, to be used by LATEX.* This
   form is useful for people who have already created a resume and other
   materials as a source file for LATEX and who do not want to retype
   everything to conform to the format in the preceding case. The files
   for this second case are named

       /pub/ibmres-tex/nres_c_e.ltx, /pub/ibmres-tex/nres_c_f.ltx,
       /pub/ibmres-tex/nres_u_e.ltx, /pub/ibmres-tex/nres_u_f.ltx.

3. *resume not in the recommended format, with tags and ASCII text.* This form is useful for people who use other word processors to create their materials. They can fill in the tag data and use the word processor to produce an ASCII text version of their document. The files for this third case are named

   ```
   /pub/ibmres-tex/nres_c_e.txt, /pub/ibmres-tex/nres_c_f.txt,
   /pub/ibmres-tex/nres_u_e.txt, /pub/ibmres-tex/nres_u_f.txt.
   ```

4. *a file with just ASCII text.* This form is acceptable, but we do not recommend it. It will have to be examined by a human, whereas the three preceding cases are tagged files which can be processed automatically by software.

If you use the first or second case, while entering text you must beware of ten symbols which have special meaning to TEX and LATEX: ampersand (`&`), backslash (`\`), dollar sign (`$`), hash mark (`#`), hat (`^`), left brace (`{`), percent sign (`%`), right brace (`}`), tilde (`~`), and underscore (`_`). You are not likely to want an actual backslash, hat, or tilde in your text, and you may obtain the other seven by typing `\` before the symbol, e.g. `\&` to get an ampersand in the output. Finally, you must figure out how to run LATEX on the file at your installation if you want paper output.

2   A Simple Example of a Tagged File

In this section we give a simple example which illustrates the use of the `ibmres` macro package. The first step is to create a text file which looks as follows:

```
\documentstyle[12pt,ibmres]{article}
\begin{document}
  .
  .
  .
\end{document}
```

The first line tells LATEX that you are creating a document in the style of an article, you wish the text to be set in a twelve-point font, and you are

using the `ibmres` macro package. If you prefer a smaller text size, you may substitute `11pt` for `12pt`; if you omit the string `12pt,` you will obtain a document in the default ten-point size. The second and final lines surround the remaining text which is considered the LaTeX document.

We shall call a *tag* any string which: (a) begins with a backslash \; (b) is immediately followed by a sequence of letters; and (c) optionally ends with a zero. In the example above there are three tags: `\documentstyle`, `\begin`, and `\end`. The case of the letters is significant, so that `\end` and `\End` represent different tags. Frequently a tag is followed by a pair of matching braces with a string of text inside; we call that string the *argument* of the tag. Thus in the preceding examples the string `document` is the argument of both `\begin` and `\end`. An argument may range from the empty string (e.g. `\miscellaneous{}`) to several lines of text.

Except for lines indicating comments (ignored by LaTeX), which are discussed momentarily, the remainder of the lines in the text file conform to the following format: *tag { argument }*. Detailed descriptions of the tags appear in subsequent sections, but we give a simple example here.

A text file which includes the 71 lines on pages 21–22 produces the resume, cover letter, and label on pages 23–25. The four initial columns of numbers from 1 to 71 do not actually appear in the input file but are included for easy reference. Lines 1–6 are comments. If LaTeX encounters a %, it ignores any text which remains on that line. As we pointed out in Section 1.3, if you want a % in your text, you must type `\%`.

The example shows that the tags can be divided into three types. The simplest type, such as `\objective` (lines 25–26), merely causes specific output (in this case **Objective**) accompanied by one item (the argument) formatted in an appropriate manner. Note that `\name` (line 9) and `\oneaddressandphone` (lines 16–20) are of the same form; the argument of the latter spans all five lines. A second type, such as `\education` (line 27), implies the occurrence of related sub-tags `\when`, `\place`, `\location`, `\degree`, `\gpa`, and `\outof` (lines 28–33). The third type of tag is illustrated by the string in line 10. The `0` following `\preferredtitle` means that the tag plus argument will contribute zero to the output; nevertheless, the data will be used by the receiving applicant system. For example, the latter could send back a formal letter in which the argument `Mr. Leeman` appears in the salutation string `Dear Mr. Leeman:`. We thus avoid the embarrassing *faux pas* of using an improper form of address; choosing the right salutation is a

task which cannot be done correctly one-hundred percent of the time, even by humans!

LaTeX encourages the user to view the document logically, not physically. The end of line indicator in LaTeX is \\ (double backslash). Accordingly, we shall use the term *logical lines* to described the lines so separated. Thus the address and phone number on lines 17–19 consist of three logical lines; the equivalent form

```
\oneaddressandphone{
2904 Washtenaw
Avenue,
Apt. 1B\\Ypsilanti,
MI 48198\\
(313)
434-1815
}
```

contains six physical lines for the address and phone number, but still only three logical lines. We shall see examples later where an address and phone number with four logical lines might require five physical lines on output. Our tags are designed so that TeX determines the appropriate physical breaks.

This example illustrates some of the techniques for typing text to be read by LaTeX and TeX.

1. Logical lines are separated by the \\ command. Thus the \\ command in line 18 is essential to force a line break on output; without it, the resume would have appeared at that point as

   ```
   Ypsilanti, MI 48198 (313) 434-1815.
   ```

   The number of physical lines is not important. We prefer a style such as lines 16–20 when the argument has several lines; the closing } is less likely to be omitted. On the other hand, when the argument can be typed on one or two lines, we use a format as in lines 25–26.

2. A blank line such as in lines 55, 59, and 63 causes the end of a paragraph.

3. One can force a blank within a line by the sequence "\ " (i.e., a backslash followed by a blank), such as in line 69.

As this simple example illustrates, the task of creating effective employment application materials amounts to filling in standard skeletons of tags. One does not have to memorize the special sub-tags associated with tags of the second type above, since they already appear in the skeletons with appropriate comments. When the governing tag (e.g. \education) is not used, then the subordinate tags (e.g. \when...\outof) must be removed as well. These procedures are explored in more detail in the following sections.

We point out that the aforementioned application materials are poorly constructed. Sending a carbon copy to one's mother is probably a bad idea, and a postscript is questionable in a cover letter for employment, where the tone is more formal. The letter also suffers from the minor defect that it is sent more than twenty years late! The discussion in Section 4.1 points out further deficiencies.

3   Legal Tagged Files

In this section we discuss ten basic tags which should appear in all tagged files. In fact, a tagged file is *legal* if it contains these tags, plus possibly others. Intuitively the basic tags identify rudimentary information which an employment processing system needs to know about the applicant, such as name, degree, etc. We illustrate the tags with the sample file `/pub/ibmres-tex/nres_u_f.txt`, a partial listing of which appears on pages 26–27. The tags are as follows.

1. \name (line 8). This tag is usually the first tag, and its argument is your full name.

2. \preferredtitle0 (line 9). As already discussed, it gives the desired string to be used by a responding system in a letter salutation. It produces no output.

3. \school0 (line 10). Enter the school from which you have received or are receiving your most advanced degree. The tag produces no output.

4. \email (line 11). Enter the exact set of symbols which a system could use to respond to you. The form shown is often synonymous with leeman@um.cc.umich.edu. One trap is that the underscore is sometimes present, so one must be careful to type _, not just _ (an example appears in the listing of the file /pub/ibmres-tex/res_u_f.ltx on pages 28–31). If you do not have an electronic mail address, enter \email{}.

5. \discipline0 (line 12). Enter the discipline in which you received or are receiving your most advanced degree.

6. \highestdegree0 (line 13). Enter the highest degree which you received or are receiving.

7. \degreeyear0 (line 14). Enter the year in which you received or are receiving your highest degree.

8. \workaddressandphone and \homeaddressandphone (examples appear in lines 13–23 on page 28) or just \oneaddressandphone (lines 15–19). Undergraduates and some graduate students may want to use just one home address via \oneaddressandphone. However, if you have a place of employment, use both a work and home address with two tags \workaddressandphone and \homeaddressandphone. A frequently asked question is whether a home address refers to the living quarters at a university or a more permanent site, such as the home of a student's parents. If you will be at a campus residence six weeks after you send out your resumes, then use the campus residence; otherwise use a more permanent address. Separate logical lines by \\; the system will figure out proper physical line breaks.

9. \immigrationstatus and \typeofpositiondesired (lines 20–21). These extremely important entries are often not found at all in resumes! They are always key elements which a potential hiring manager must know and should therefore appear early.

   (a) \immigrationstatus. Typical entries are US citizen, US permanent resident, Student Visa. Some students prefer to indicate the type of visa (e.g. F1, H1, J1), since they carry different implications for employment. This entry is also important for the hiring manager to know. For example, employers offering work involving US government contracts may be forced to consider only US citizens, because those in the other categories may be unable to obtain a government security clearance.

(b) `\typeofpositiondesired`. Entries here are Permanent, Summer (indicate the year—an omission in the example of Section 2), and Temporary; an example of the latter is a co-op position for a semester.

4   Four Types of Applicant Files

In this section we discuss four possible formats for electronic files. The first three are legal tagged files which include the basic tags presented in the preceding section. The final format is just raw, unstructured text made up of ASCII characters.

4.1   Use of the IBMRES.STY Templates

If you have not created a resume and associated materials, we recommend using the `ibmres.sty` approach. You fill in one of the templates listed in case 1 of Section 1.3. If you want paper versions of your document, you ensure that the file `/pub/ibmres-tex/ibmres.sty` is available, and you run LaTeX on your file. We provide detailed descriptions of the various tags available, and we give tips on producing effective resumes. We illustrate the tags with a more complicated example of a PhD student resume. The only tags which are *required* are the basic tags mentioned in the preceding section. However, many of the others which are discussed here will be useful. The input is the file `/pub/ibmres-tex/res_u_f.ltx` (pages 28–31), and the output is on pages 32–36. In this discussion two points will be emphasized:

1. Both the choice of items in a resume and their order on the page are important. You should express your qualifications in a terse but convincing style, and should arrange items so that the potential hiring manager will see key points early.

2. You may want to create several resumes, tailored to specific employers. However, begin with a general version, which can then be slightly modified by adding or removing various tags.

We now discuss one-by-one the remaining tags which have not already been mentioned in the preceding section. Although in the resume output the left

margin is really the blank 1″x11″ rectangle extending from the left side of the page, we shall instead call the left margin the rectangle which starts at the beginning of **Objective** and ends at the beginning of "To obtain a research ..." in our example.

1. \presentstatus (line 28) and \availabledate (line 31). These extremely important entries are often not found at all in resumes! They are always key elements which a potential hiring manager must know and should therefore appear early.

   (a) \presentstatus. Your present status might be BS student, MS student, PhD student, Postdoc student, faculty, employed, etc. This category often immediately determines whether you are a candidate for an available position.

   (b) \availabledate. This item is a possible starting date. Your best strategy is to put the earliest possible date which you can tolerate, provided that all obligations can be fulfilled. A counterexample would be a date `July 1` and an education item saying `PhD expected July 1`, where the latter date is unrealistically optimistic.

2. \employerspecifictitle, \employerspecificdata (lines 32–33). These specialized tags are only used in a minority of resumes, and hence they are discussed in the next section.

3. \objective (lines 34–35). The objective must be clear and concise. BS students tend to have more general objectives (e.g. "a position in software engineering"), whereas PhDs are more specific (see example in lines 34–35). Keep in mind that the goal is to write a resume in which the items that follow illustrate that you are well-qualified to pursue the objective.

4. \education (line 36). This tag spawns one or more sextets consisting of the tags \when, \place, \location, \degree, \gpa, \outof.

   (a) \when (line 37). When the degree was received or when it is expected.

   (b) \place (line 38). The university.

   (c) \location (line 39). Its location; in the US, city and state suffice.

(d) `\degree` (lines 40–41). Include the type (e.g. BA, MA, BS, MS, PhD, etc.) and the field of major study. When appropriate, include a thesis advisor and title. The thesis advisor may also be listed in the References section, which is a desirable redundancy.

(e) `\gpa` (line 42). Usually a decimal number, but there may be other cases (see line 54).

(f) `\outof` (line 43). The highest possible GPA. This entry is important and sometimes omitted. Many graduate schools use a maximum of 9.000. If you type `\gpa{7.362}\outof{}` instead of `\gpa{7.362}\outof{8.000}`, the reader may assume the omitted field was 9.000 and consider you a B student instead of an A student.

5. `\employment` (line 56). If you have employment experience, use this tag, which implies one of more quartets of the tags `\when`, `\place`, `\location`, `\text`.

   (a) `\when` (line 57). A range of dates for the job.

   (b) `\place` (line 58). Name of employer.

   (c) `\location` (line 59). Location; in the US, city and state suffice.

   (d) `\text` (lines 60–61). Text giving a brief description of the work. If the work is related to the Objective, choose wording which makes the connection clear.

6. `\skills` (line 66). This is an optional tag which is a catch-all for capabilities which do not appear anywhere else. It is followed by one or more `\text` tags to describe the items.

   (a) `\text` (line 67). As an example, the ability to write programs in a specific programming language may be an important adjunct for carrying out the objective. For some disciplines the nature of your degree and education might be sufficient, and the `\skills` and `\text` tags could be omitted.

7. `\honors` (line 68). If you have honors to report, use this tag followed by one or more `\text` tags.

   (a) `\text` (line 69). Appellations such as *magna cum laude* and *summa cum laude* are often listed as part of the degree in the Education section, but honors buried there are apt to be missed. Special employer-specific honors are best handled in a different manner (see next section).

8. \publications (line 72). If you have publications, use this tag followed by one or more \text tags.

   (a) \text (line 73). List title, authors, and when and where the paper appeared or will appear. Any format seen in bibliographies is acceptable; the form shown here with no font changes is adequate. It is important to observe that the number of publications may depend not only on the student, but also the discipline and the advisor. A pure mathematics PhD writing a first-rate thesis might derive one or two publications from it in serious journals; an engineering student with results of immediate applicability might be encouraged to write up portions and present them at a conference, resulting in a larger number of publications.

9. \miscellaneous (line 85). This is an entry which can be omitted, and its presence can affect the tone of the resume. In this writer's opinion, items such as "enjoys tennis, classical music, and house building" are less effective than entries such as significant volunteer work or positions of authority and/or responsibility.

10. \references (line 87). This tag is obligatory and gives rise to one or more pairs \referencename and \referenceemail. Writing something like "provided upon request" (as was done in the example of Section 2) is a mistake. Any potentially interested employer will ask for references, so such an entry only promotes delay. Furthermore, a list of names has two additional benefits. First, the list may suggest a breadth which the Objective requires. For instance, in the example of Section 2 the applicant could have listed both a physicist and a computer scientist, or both a mathematician and a computer scientist among the references. Second, the manager might recognize one of the names, especially if the reference is well-known.

   (a) \referencename (line 88). Include the full name, title, location, and phone number.

   (b) \referenceemail (line 90). Include the exact set of characters in the electronic address; make the argument null if the reference has no such address. Note that an automated system could request reference letters automatically, and the reference could forward them in electronic form.

11. \coverletter (lines 97–102). The impressive business letter is similar to, but not as sophisticated as, the sample format written by Knuth [2, pp. 403–408]. As already discussed, this tag's argument consists

of at least two logical lines separated by \\ commands. The first line appears at the top of the letterhead in a large font; the remaining lines are joined with a comma and appear underneath the first line. If the argument is null, the next eight tags have no effect, even if their arguments are not null.

(a) `\rightlines` (line 103–107). The logical lines of the argument appear at the right-hand side of the business letter, separated from the preceding entries by a long rule. Typical choices here are the sender's name and title, electronic address, and phone number.

(b) `\recipient` (lines 108–113). Include the addressee's name and/or title and address.

(c) `\letterbody` (lines 114–126). Separate paragraphs with blank lines (lines 116, 120, 124). This writer prefers extra space between paragraphs, which was obtained via the `\bigskip` TeX command (lines 117, 121, 125). It is useful to include any information here which does not conveniently fit in the resume. In particular, providing a more detailed account of your availability can save the employer time in trying to contact you. The date of the letter is generated automatically.

(d) `\closing` (lines 127–130). Include a suitable closing and your name, separated by \\.

(e) `\cc` (line 131). The carbon copy list has limited use in a cover letter. It can be omitted or equivalently used with a null argument. Members of a cc: list would be separated by \\.

(f) `\encl` (line 132). It is a good idea to list as enclosures all materials accompanying the letter. Separate items in the list with \\.

(g) `\ps` (line 133). As mentioned previously, use of the postscript tag can affect the tone of the letter. It may be omitted or equivalently used with null argument.

(h) `\letterlabel` (line 134). This tag produces a mailing label. The return address is generated from the letterhead, and the remainder of the label is the `\recipient` argument.

12. `\abstracts` (line 135). If you want to include some abstracts, follow this tag by one or more `\text` tags. A good strategy is to fit them on one page. Large numbers of pages will inundate the employer. A second strategy is to supply no abstracts when the resume is first sent, but to be ready with the additional page as a follow-up weapon.

(a) \text (line 136–146). It would take us too far afield to explain all the typed input in these examples. However, they show how easily mathematical formulas can be obtained via LaTeX and TeX.

4.2   Use of the NOIBMRES.STY Templates

Although the `ibmres.sty` package in the preceding section is the one we recommend most, there are cases in which it may not be the best choice. If you are already using LaTeX for resumes and related materials, you may not want to retype everything to cater to the `ibmres` format. In that case make sure the file `noibmres.sty` (available via anonymous FTP from software.watson.ibm.com) is part of your system, and create a file which includes the basic tags plus your own LaTeX source file. An example appears in the listing on page 37, where your own LaTeX commands and text would appear after line 24. There is only one string attached—your LaTeX source must be self-contained, i.e., not reference any special style or macro files. You may of course include any needed macro definitions between lines 8 and 9. The `noibmres.sty` file simply defines each tag to produce no text. If your text after line 24 happens to have a basic tag such as \name{...}, you may omit that tag (line 10 in the example) at the beginning of the file. If you do not, the receiving software will warn you that two identical basic tags were detected, and it will use the data associated with the first occurrence. In other words, you may redefine any of the basic tags in your own LaTeX source, and they may appear in any order. Any which do appear in your text may be omitted at the beginning of the file (lines 10–23 in our example).

4.3   Use of Tagged Files with Any Formatter or Word Processor

We strongly recommend the use of LaTeX for creating resumes and related items, because it is ubiquitous and produces beautiful results. However, if you have already created your materials with some other formatter or word processor, you may prefer not to retype everything to conform to LaTeX. If the program you used has the capability to produce a raw ASCII text version of your documents, you may fill in a template with the basic tags and append that version at the end. An example appears on pages 26–27. With this approach you avoid duplicate typing but still derive the benefits

of submitting a structured file which can be quickly processed by receiving software.

4.4   Use of Raw Text Files

The final possibility—in our opinion the poorest choice of the four cases—is to submit an unstructured file with just ASCII text. We discourage this approach, because with minimal effort you can use the preceding alternative (at the beginning of your unstructured file, include the basic tags with appropriate data). Nevertheless, we feel that even this fourth choice is better than sending paper copies. Electronic submission of any kind is fast, and your materials can be forwarded in the same form to multiple locations quickly.

5   Tailoring Resumes to Specific Employers

In this section we show how to use the `ibmres.sty` package to tailor your general resume to a specific employer. The most common reason is that you have either worked for that employer in the past or you have achievements which might be of greater interest to that employer. The best location for such material is right above the Objective, so that the reader sees it immediately. Two tags are provided, which we will illustrate with examples.

1. `\employerspecifictitle`. Indicate a title for the item. Two examples for the IBM corporation are:

         \employerspecifictitle{IBM Fellowship Holder:}
         \employerspecifictitle{IBM Work Experience:}

2. `\employerspecificdata`. Indicate data which explains the title. For the two examples above one might use

         \employerspecificdata{dates of fellowship}

   and

        \employerspecifictitle{location, date, manager name}

Note there is no problem with redundancy between these items and the Employment section. The manager name would be of great interest to another IBM manager, who could then get an inside opinion about the applicant. It would make less sense to list that name on a general resume sent to other employers.

Another example is any honor which is special to the employer. In the case of IBM, if you won a prize in an IBM-sponsored contest, the award would have greater weight in this early position on the resume, especially if accompanied by the name of someone in IBM involved with the contest.

These two tags occur in pairs and are formatted like the `\presentstatus` tag and its argument. The argument to `\employerspecifictitle` is in bold face, and the argument of `\employerspecificdata` appears immediately afterward.

6   User Modifications

In this section we show how one can make simple changes to the `ibmres.sty` package. Occasionally users want to add a tag which might not be present. The easiest way is to plunge into the file /pub/ibmres-tex/ibmres.sty to see how the existing tags are formed. That task is made less formidable by including some examples here.

It is important that you add your changes in the file you will be sending, not (for example) /pub/ibmres-tex/ibmres.sty. The right place to add new definitions is between the `\documentstyle` line and the `\begin{document}` line. The recipient can then still run LaTeX on your file with his own version of /pub/ibmres-tex/ibmres.sty.

Suppose you are applying for an academic position and feel that a list of advanced graduate courses you have taken would enhance your resume. In terms of formatting this task is no different than designing the `\skills` and `\honors` tags, since you want a bold face entry in the left margin with the possibility of one or more items to the right. The latter piece can already be done with the `\text` tag. To attack the former piece, we find in the file /pub/ibmres-tex/ibmres.sty the lines

```
\def\skills#1{\sectiontitle{Skills}#1\par}
\def\honors#1{\sectiontitle{Honors}#1\par}
```

where \def is a TeX command defining the control sequence (\skills and \honors in these cases) which immediately follows. The big advantage of examining two instances is that you see what portions change and what portions remain the same. Even if you know little about TeX, you can guess that the configuration

```
\def\courses#1{\sectiontitle{Graduate Courses Taken}#1\par}
```

will yield **Graduate Courses Taken** in the left margin, and thus the sequence

```
\courses{}
\text{Several Complex Variables, Distribution Theory, ...}
```

in our input file achieves the desired effect. You add the new \def line immediately after the \documentstyle line.

If you want two lists—one for courses taken and one for courses taught—you may define two new tags \taken and \taught by

```
\def\taken#1{\sectiontitle{Courses Taken}#1\par}
\def\taught#1{\sectiontitle{Courses Taught}#1\par}
```

which you add at the top of the file after the \documentstyle line.

Similarly, if you want a new set of tags in which the heading appears horizontally above the data and part of the data falls in the left margin, you can mimic the \education and \when tags to get the desired effect.

We mention one more physical characteristic which you might want to change: the width of the left margin. The last two lines in /pub/ibmres-tex/ibmres.sty

```
\settowidth{\leftmarginwidth}{\bf Miscellaneous}
\addtolength{\leftmarginwidth}{1 em}
```

set an internal dimension called `\leftmarginwidth` to the precise horizontal width of the word `Miscellaneous` in boldface, then add a unit of 1 em to that dimension. If you are not using the `\miscellaneous` tag and decide that **Publications** is the widest title in the left margin, you may insert the lines

```
\settowidth{\leftmarginwidth}{\bf Publications}
\addtolength{\leftmarginwidth}{1 em}
```

after the `\documentstyle` line.

The entire listing of the /pub/ibmres-tex/ibmres.sty file is found in Appendix B. We exhort the reader to become more familiar with LaTeX and TeX and to suggest improvements to this file.

7   Conclusion

This report has discussed an approach to simplify the initial phases of the employment application process and make them electronic. Several other tools and documentation would be useful. Examples include parsers which check the created input file for accuracy; systems which immediately acknowledge the applicant's submission and modify and distribute the incoming data appropriately; and further discussion about and improvements to the macros. Work on some of these pieces is nearing completion.

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```
306    \@setlineend\workaddress{\bf Work Address}\\#1\emailtext\\\0%
307    \def\saveworkaddress{{\parbox[t]{\@twoaddresssize}{\raggedright\workaddress}}}%
308    \ignorespaces}
309 % Initialize various dimensions.
310 \setlength{\@oneaddresssize}{\textwidth}
311 \addtolength{\@oneaddresssize}{-2 in}
312 \setlength{\@twoaddresssize}{\textwidth}
313 \addtolength{\@twoaddresssize}{-1 in}
314 \addtolength{\@twoaddresssize}{-0.5 \@twoaddresssize}
315 \setlength{\@fwidth}{-1 pt}
316 \settowidth{\leftmarginwidth}{\bf Miscellaneous}
317 \addtolength{\leftmarginwidth}{1 em}
```

References

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[2] Donald E. Knuth. *The T_EXbook.* Addison-Wesley, Reading, Massachusetts, 1984.

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