

# The **apxproof** package\*

## Proofs in Appendix

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## 1 Usage

TODO

## 2 Implementation

```
1 \RequirePackage{fancyvrb}
2 \RequirePackage{ifthen}
3 \RequirePackage{environ}
4 \RequirePackage{bibunits}
5 \let\proof\undefined
6 \let\endproof\undefined
7 \RequirePackage{amsthm}
8 \RequirePackage{etoolbox}
9 \RequirePackage{ifmtarg}
10 \RequirePackage{stack}
11
12 \makeatletter
13 \newwrite\axp@proofsfile
14 \immediate\openout\axp@proofsfile=\jobname.axp
15 \immediate\write\axp@proofsfile{%
16   \noexpand\makeatletter
17   \noexpand\let\noexpand\proof\noexpand\oldproof
18   \noexpand\let\noexpand\endproof\noexpand\endoldproof
19 }
20 \def\FVB@VerbatimOut{%
21   \@bsphack
22   \begingroup
23     \FV@UseKeyValues
24     \FV@DefineWhiteSpace
```

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\*This document corresponds to apxproof v1.0.0, dated 2016/10/27.

```

25 \def\FV@Space{\space}%
26 \FV@DefineTabOut
27 \def\FV@ProcessLine{\immediate\write\axp@proofsfile}%
28 \let\FV@FontScanPrep\relax
29 \let\@noligs\relax
30 \FV@Scan}
31 \def\FVE@VerbatimOut{\endgroup\@esphack}
32
33 \let\apxold@proof\proof
34 \let\endapxold@proof\endproof
35
36 \renewenvironment{proof}
37 {\axp@writesection\immediate\write\axp@proofsfile{\noexpand\begin{apxold@proof}}\VerbatimOut
38 {\endVerbatimOut\immediate\write\axp@proofsfile{\noexpand\end{apxold@proof}}}
39
40 \newcommand{\appendixrefname}{References for the Appendix}
41
42 \AtEndDocument{%
43 \clearpage\onecolumn\appendix
44 \begin{bibunit}[alpha]%
45 \immediate\closeout\axp@proofsfile\input{jobname.axp}%
46 \renewcommand{\refname}{\appendixrefname}%
47 \putbib
48 \end{bibunit}%
49 }
50
51 \let\apxold@bibliography\bibliography
52 \renewcommand\bibliography[1]{%
53 \defaultbibliography{#1}%
54 \apxold@bibliography{#1}%
55 }
56
57 \newcounter{axp@rpcounter}
58 \newcounter{axp@seccounter}
59
60 \let\apxold@label\label
61 \renewcommand{\label}[1]{%
62 \ifcsname c@#1\endcsname
63 \else
64 \newcounter{#1}\apxold@label{#1}%
65 \fi
66 }
67
68 \newcommand{\newtheoremrep}[2]{%
69 \newtheorem*{axp#1rp}{#2}%
70 \expandafter\let\csname #1\endcsname\undefined
71 \expandafter\let\csname c@#1\endcsname\undefined
72 \newtheorem{#1}{#2}%
73 \NewEnviron{#1rep}[1][]{%
74 \addtocounter{axp@rpcounter}{1}%

```

```

75 \begin{#1}[##1]\apxold@label{axp@r\roman{axp@rcounter}}\BODY\end{#1}%
76 \global\expandafter\let\csname rplet\roman{axp@rcounter}\endcsname\BODY%
77 \axp@writesection%
78 \immediate\write\axp@proofsfile{%
79 \noexpand\begin{axp#1rp}[\noexpand\ref{axp@r\roman{axp@rcounter}}]\@ifnotempty{##1}{\n
80 \expandafter\noexpand\csname rplet\roman{axp@rcounter}\endcsname\noexpand\end{axp#1rp}
81 }
82 }
83 }
84
85 \def\apx@sectitle{}
86
87 \let\apxold@section\section
88 \def\section{\@ifstar\@section{\@dblarg\@section}}
89 \def\@section#1{%
90 \global\edef\apx@sectitle{#1}%
91 \apxold@section*{#1}%
92 \addtocounter{axp@seccounter}{1}%
93 \label{axp@s\roman{axp@seccounter}}}%
94 }
95 \def\@section[#1]#2{%
96 \global\edef\apx@sectitle{#1}%
97 \apxold@section{#1}%
98 \addtocounter{axp@seccounter}{1}%
99 \label{axp@s\roman{axp@seccounter}}}%
100 }
101
102 \newcommand\axp@writesection{%
103 \ifx\apx@sectitle\empty
104 \else
105 \immediate\write\axp@proofsfile{\noexpand\def\noexpand\tmp{\noexpand\ref{axp@s\roman{axp@seccounter}}}%
106 (\apx@sectitle)}}%
107 \global\def\apx@sectitle{}%
108 \fi
109 }
110
111 \newenvironment{proofsketch}
112 {\vskip3pt\noindent\emph{Proof sketch.} }
113 {\hfill\qed\vskip3pt}
114
115 \newenvironment{toappendix}
116 {\axp@writesection\VerbatimOut}
117 {\endVerbatimOut}
118
119 \ifdefined\acmtitlebox
120 \newtheoremstyle{mystyle}%
121 {3pt}
122 {3pt}
123 {\itshape}
124 {}

```

```

125     {\scshape}
126     {.}
127     {.5em}
128     {}
129 \theoremstyle{mystyle}
130
131 \newcommand{\refname}{REFERENCES}
132 \patchcmd{\thebibliography}{References}{\protect\refname}{}{}
133 \patchcmd{\thebibliography}{References}{\protect\refname}{}{}
134
135 \renewcommand{\appendixrefname}{REFERENCES FOR THE APPENDIX}
136 \fi
137
138 \def\thmhead#1#2#3{%
139   \thmname{#1}\thmnumber{\@ifnotempty{#1}{ } \@upn{#2}}%
140   \thmnote{ #3}}
141
142 \makeatother

```

## Change History

v1.0.0  
General: Initial version . . . . . 1

## References for the Appendix

- [BP98] Sergey Brin and Lawrence Page. The anatomy of a large-scale hypertextual Web search engine. *Computer Networks*, 30(1–7):107–117, April 1998.
- [sit08] sitemaps.org. Sitemaps XML format.  
<http://www.sitemaps.org/protocol.php>, February 2008.