

# L<sup>A</sup>T<sub>E</sub>X Class for *Association for Computing Machinery*\*

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## Abstract

This package provides a class for typesetting publications of Association for Computing Machinery.

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## 1 Introduction

Association for Computing Machinery is the world's largest educational and scientific computing society, which delivers resources that advance computing as a science and a profession<sup>1</sup>. It was one of the early adopters of  $\text{\TeX}$  for its typesetting.

It provided several different classes for a number of journal and conference proceedings. Unfortunately during the years since these classes were written, the code was patched many times, and the support of the different versions of the classes became difficult.

This package provides the uniform interface for all ACM publications. It is intended to replace all different classes and packages and provide an up to date  $\text{\LaTeX}$  package.

The package uses only free  $\text{\TeX}$  packages and fonts included in  $\text{\TeX}$ Live, Mik $\text{\TeX}$  and other popular  $\text{\TeX}$  distributions. It is intended to be published in these distributions itself, which minimizes users' efforts in the installation and support of the package.

## 2 User's guide

### 2.1 Installation

Most probably, you already have this package installed in your favorite  $\text{\TeX}$  distribution; if not, you may want to upgrade. You may need to upgrade it anyway since the package uses a number relatively recent packages, especially the ones related to the fonts.

If you decide to install the package yourself, follow the standard rules:

1. Run `latex` on `acmart.ins`. This will produce the file `acmart.cls`.
2. Put the file `acmart.cls` and the bibliography files `*.bst` to the places where  $\text{\LaTeX}$  can find them (see [1] or the documentation for your  $\text{\TeX}$  system).
3. Update the database of file names. Again, see [1] or the documentation for your  $\text{\TeX}$  system for the system-specific details.
4. The file `acmart.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the files in the working directory where your `.tex` file is.

### 2.2 Invocation and options

To use the class put in the preamble of your document

```
\documentclass[<options>]{acmart}
```

There are several options corresponding to the type of the document and its general appearance. They are described below. Generally speaking, the options have key=value forms, for example

---

<sup>1</sup><http://www.acm.org/>

Table 1: The possible values for the format option

Value	Meaning
manuscript	A manuscript. This is the default
acmsmall	Small format, used for CIE, CSUR, JACM, JDIQ, JEA, JERIC, JETC, TAAS, TACCESS, TACO, TALG, TALLIP (formerly TALIP), TCPS, TEAC, TECS, TIIS, TISSEC, TIST, TKDD, TMIS, TOCE, TOCHI, TOCL, TOCS, TOCT, TODAES, TODS, TOIS, TOIT, TOMACS, TOMM (formerly TOMCCAP), TOMPECS, TOMS, TOPC, TOPLAS, TOS, TOSEM, TOSN, TRET, TSAS, TSLP, TWEB.
acmlarge	Large single column format, used for JOCCH, TAP
acmtog	Large double column format, used for TOG
sigconf	Proceedings format for most of ACM conferences (with the exceptions listed below)
siggraph	Proceedings format for SIGGRAPH and SIGGRAPH Asia conferences, published in ACM Transactions on Graphics journal issues
sigplan	Proceedings format used for SIGPLAN conferences
sigchi	Proceedings format for SIGCHI conferences
sigchi-a	Format for SIGCHI extended abstract

```
\documentclass[format=acmsmall, screen=true, review=false]{acmart}
```

The option format describes the format of the output. There are several possible values for this option, for example,

```
\documentclass[format=acmtog]{acmart}
```

Actually the words format= can be omitted, e.g.

```
\documentclass[acmtog, review=false]{acmart}
```

The possible formats are listed in Table 1. Note that formats starting with acm are intended for journals and transactions, while formats starting with sig are intended for proceedings published as books.

There are several Boolean options which can take true or false values. They are listed in Table 2. The words =true can be omitted when setting the Boolean option, so instead of screen=true one can write just screen, for example,

```
\documentclass[acmsmall, screen, review]{acmart}
```

The option review is useful when combined with the manuscript format option: it provides a version suitable for reviewers and copyeditors. The option screen may in the future involve additional features suitable for on-screen versions of the articles. The

Table 2: Boolean options

Option	Default	Meaning
review	false	A review version: doublespaced, lines are numbered, hyperlinks are colored
screen	false	A screen version: hyperlinks are colored
natbib	false	Whether to use natbib package (see Section 2.8)
anonymous	false	Whether to make the authors anonymous

option natbib is used when the corresponding BibTeX style is based on natbib. The option anonymous is used for anonymous review process: all author information becomes obscured.

## 2.3 Topmatter commands

A number of commands set up *top matter* information, or, in the computer science jargon, *metadata* for the article. They establish the publication name, article title, authors, doi and other data. Some of these commands, like \title or \author, should be put by the authors. Others, like \volume or \doi—by the editors. Below we describe these commands and mention who should issue them. These macros should be used *before* the \maketitle command. Note that in the previous versions of ACM classes some of these commands should be used before \maketitle, and some after it. Now they all must be used before \maketitle.

The class internally loads amsart class, so many top matter commands are inherited from amsart [2].

\acmJournal

The macro \acmJournal{<shortName>} sets the name of the journal or transaction for journals and transactions. The argument is the short name of the publication *in uppercase*, for example,

```
\acmJournal{TOMS}
```

The currently recognized journals are listed in Table 3. Note that conference proceedings published in *book* form do not set this macro.

It is expected that this command is inserted by the author of the manuscript when she decides to which journal to submit the manuscript.

\acmConference

The macro \acmConference[<short name>]{<name>}{<date>}{<venue>} is used for conference proceedings published in the book form. The arguments are the following:

**short name:** the abbreviated name of the conference (optional).

**name:** the name of the conference *or* the name of the book as set by the editor.

**date:** the date(s) of the conference.

**venue:** the place of the conference.

Table 3: ACM publications and arguments of the \acmJournal command

Abbreviation	Publication
CIE	ACM Computers in Entertainment
CSUR	ACM Computing Surveys
JACM	Journal of the ACM
JDIQ	ACM Journal of Data and Information Quality
JEA	ACM Journal of Experimental Algorithmics
JERIC	ACM Journal of Educational Resources in Computing
JETC	ACM Journal on Emerging Technologies in Computing Systems
JOCCH	ACM Journal on Computing and Cultural Heritage
TAAS	ACM Transactions on Autonomous and Adaptive Systems
TACCESS	ACM Transactions on Accessible Computing
TACO	ACM Transactions on Architecture and Code Optimization
TALG	ACM Transactions on Algorithms
TALLIP	ACM Transactions on Asian and Low-Resource Language Information Processing
TAP	ACM Transactions on Applied Perception
TCPS	ACM Transactions on Cyber-Physical Systems
TEAC	ACM Transactions on Economics and Computation
TECS	ACM Transactions on Embedded Computing Systems
TIIS	ACM Transactions on Interactive Intelligent Systems
TISSEC	ACM Transactions on Information and System Security
TIST	ACM Transactions on Intelligent Systems and Technology
TKDD	ACM Transactions on Knowledge Discovery from Data
TMIS	ACM Transactions on Management Information Systems
TOCE	ACM Transactions on Computing Education
TOCHI	ACM Transactions on Computer-Human Interaction
TOCL	ACM Transactions on Computational Logic
TOCS	ACM Transactions on Computer Systems
TOCT	ACM Transactions on Computation Theory
TODAES	ACM Transactions on Design Automation of Electronic Systems
TODS	ACM Transactions on Database Systems
TOG	ACM Transactions on Graphics
TOIS	ACM Transactions on Information Systems
TOIT	ACM Transactions on Internet Technology
TOMACS	ACM Transactions on Modeling and Computer Simulation
TOMM	ACM Transactions on Multimedia Computing, Communications and Applications
TOMPECS	ACM Transactions on Modeling and Performance Evaluation of Computing Systems
TOMS	ACM Transactions on Mathematical Software
TOPC	ACM Transactions on Parallel Computing
TOPLAS	ACM Transactions on Programming Languages and Systems
TOS	ACM Transactions on Storage
TOSEM	ACM Transactions on Software Engineering and Methodology
TOSN	ACM Transactions on Sensor Networks
TRETS	ACM Transactions on Reconfigurable Technology and Systems
TSAS	ACM Transactions on Spatial Algorithms and Systems
TSLP	ACM Transactions on Speech and Language Processing
TWEB	ACM Transactions on the Web

Examples:

```
\acmConference[TD'15]{Technical Data Conference}{November
12--16}{Dallas, TX, USA}
\acmConference{SA'15 Art Papers}{November 02--06, 2015}{Kobe, Japan}
```

Normally this command is entered either by the editor or by the typesetter.

`\title` The command `\title`, as in `amsart` class, has two arguments: one optional, and one mandatory:

```
\title[\ShortTitle]{\FullTitle}
```

The mandatory argument is the full title of the article. The optional argument, if present, defines the shorter version of the title for running heads. If the optional argument is absent, the full title is used instead.

It is expected that this command is inserted by the author of the manuscript.

`\subtitle` Besides title, ACM classes allow subtitle, set with the `\subtitle{\subtitle}` macro.

`\author` The interface for specifying the authors and their affiliations is close to the one of `amsart` [3] (and different from the standard  $\text{\LaTeX}$ ). For each author a separate command `\affiliation` should be used, followed by `\email` and `\email`. If several authors share affiliations, in journal formats like `acmsmall` or `acmlarge` one may put the affiliation after all these authors, for example:

```
\author{A. U. Thor}
\email{author@nsw.au.edu}
\affiliation{University of New South Wales}
\author{A. N. Other}
\author{C. O. Respondent}
\affiliation{University of Pennsylvania}
```

In the cases of overlapping affiliations it is advisable to repeat the full list, for example,

```
\author{A. U. Thor}
\affiliation{University of New South Wales, Australia}
\email{author@nsw.edu.au}
\author{A. N. Other}
\affiliation{University of Pennsylvania, USA and University of New South
Wales, Australia}
\email{other@upenn.edu}
```

For *conferences* the affiliations should *always* be repeated, even if they are shared between the authors.

Note that old ACM conference formats did not allow for more than six authors and required some efforts from the authors to achieve alignment. The new format is much better in this.

It is expected that these commands are inserted by the author of the manuscript.

`\thanks` Like `amsart` (and unlike standard  $\text{\LaTeX}$ ), we allow `\thanks` only *outside* of commands

`\title` and `\author`. Example:

```
\thanks{This work is supported by the Widget Corporation Grant
\#312-001.\\
Author's address: D. Pineo, Kingsbury Hall, 33 Academic Way, Durham,
N.H. 03824; email: dspineo@comcast.net; Colin Ware, Jere A. Chase
Ocean Engineering Lab, 24 Colovos Road, Durham, NH 03824; email:
cware@ccom.unh.edu;
Sean Fogarty, (Current address) NASA Ames Research Center, Moffett
Field, California 94035.}
```

It is expected that this command is inserted by the author of the manuscript.

`\titlenote`      While the command `\thanks` generates a note without footnote mark, sometimes  
`\subtitlenote` the authors might need notes more tightly connected to the title, subtitle or author. The  
`\authornote` commands `\titlenote`, `\subtitlenote` and `\authornote` that follow the corresponding  
commands (`\title`, `\subtitle` and `\author`) generate such notes, for example

```
\title{This is a title}
\titlenote{This is a titlenote}
\author{A. U. Thor}
\authornote{This is an authornote}
```

`\acmVolume`      The macros `\acmVolume`, `\acmNumber`, `\acmArticle`, `\acmYear` and `\acmMonth` are  
`\acmNumber` inserted by the editor and set the journal volume, issue, article number, year and month  
`\acmArticle` correspondingly. The arguments of all these commands, including `\acmMonth` is numer-  
`\acmYear` ical, including `\acmMonth`, for example,  
`\acmMonth`

```
\acmVolume{9}
\acmNumber{4}
\acmArticle{39}
\acmYear{2010}
\acmMonth{3}
```

`\articleSeq`      The articles in the same issue of a journal have *sequential number*. It is used to  
position black blob in same formats. By default it is the same as article number, but the  
command `\articleSeq` sequence number can be used to change it:

```
\acmArticle{39} % The sequence number will be 39 by default
\articleSeq{5} % We rededine it to 5
```

`\acmPrice`      The macro `\acmPrice{<price>}` sets the price for the article (by default 15.00), for  
example,

```
\acmPrice{25.00}
```



`\isbn` Book-like volumes have ISBN numbers attached to them. The macro `\isbn{<ISBN>}` sets it. Normally it is set by the typesetter, for example,

```
\isbn{978-1-4503-3916-2}
```

`\doi` The macro `\doiDOI` sets the DOI number of the article, for example,

```
\doi{http://doi.acm.org/10.1145/9999997.9999999}
```

It is normally set by the typesetter.

`\startPage` The macro `\startPage{<page>}` sets the first page of the article in the journal or book. It is used by the typesetter.

`\terms` The macros `\terms{<term, term,...>}` and `\keywords{<keyword, keyword,...>}` set the main terms and the additional keywords for the article. Term and keywords must be separated by commas, for example,

```
\terms{wireless, interference}
\keywords{wireless sensor networks, media access control,
multi-channel, radio interference, time synchronization}
```

`CCSXML` ACM publications are classified according to the ACM Computing Classification Scheme (CCS). CCS codes are used both in the typeset version of the publications *and* in the metadata in the various databases. Therefore you need to provide both  $\TeX$  commands and XML metadata with the paper.

The tool at <http://dl.acm.org/ccs.cfm> can be used to generate CCS codes. After you select the topics, click on “Generate CCS codes” to get the result like the following:

```
\begin{CCSXML}
<ccs2012>
<concept>
<concept_id>10010520.10010553.10010562</concept_id>
<concept_desc>Computer systems organization~Embedded systems</concept_desc>
<concept_significance>500</concept_significance>
</concept>
<concept>
<concept_id>10010520.10010575.10010755</concept_id>
<concept_desc>Computer systems organization~Redundancy</concept_desc>
<concept_significance>300</concept_significance>
</concept>
<concept>
<concept_id>10010520.10010553.10010554</concept_id>
<concept_desc>Computer systems organization~Robotics</concept_desc>
<concept_significance>100</concept_significance>
</concept>
<concept>
<concept_id>10003033.10003083.10003095</concept_id>
<concept_desc>Networks~Network reliability</concept_desc>
<concept_significance>100</concept_significance>
```

Table 4: Parameters for \setcopyright command

Parameter	Meaning
none	The copyright and permission information is not typeset (this is the option for some ACM conferences).
acmcopyright	The authors transfer the copyright to ACM (the “traditional” choice).
acmlicensed	The authors retain the copyright but license the publication rights to ACM.
rightsretained	The authors retain the copyright and publication rights to themselves or somebody else.
usgov	All the authors are employees of the US Government.
usgovmixed	Some authors are employees of the US Government.
cagov	All the authors are employees of the Canadian Government.
cagovmixed	Some authors are employees of the Canadian Government.

</concept>

</ccs2012>

\end{CCSXML}

\ccsdesc[500]{Computer systems organization~Embedded systems}

\ccsdesc[300]{Computer systems organization~Redundancy}

\ccsdesc{Computer systems organization~Robotics}

\ccsdesc[100]{Networks~Network reliability}

You need to just copy this code and paste it in your paper anywhere before \maketitle.

\setcopyright There are several possibilities for the copyright of the papers published by ACM: the authors may transfer the rights to ACM, license them to ACM, some or all authors might be employees of the US or Canada Government, etc. Accordingly the new command \setcopyright{...} is introduced. Its argument is the copyright status of the paper, for example, \setcopyright{acmcopyright}. The possible values for this command are listed in Table 4.

The ACM submission software should generate the right command for you to paste into your file.

\copyrightyear Each copyright statement must have the year of copyright. By default it is the same as \acmYear, but you can override this decision using the macro \copyrightyear, e.g.

\acmYear{2016}

\copyrightyear{2015}

abstract The environment abstract must *precede* \maketitle command. Again, this is different from the standard L<sup>A</sup>T<sub>E</sub>X.

teaserfigure A special kind of figure is used for many two-column conference proceedings.

Table 5: Settings for `\settopmatter` command

Parameter	Values	Meaning
<code>printccs</code>	true/false	Whether to print CCS categories
<code>printbib</code>	true/false	Whether to print ACM bibliographic entry

This figure is placed just after the authors, but before the main text. The environment `teaserfigure` is used for these figures. This environment must be used *before* `\maketitle`, for example,

```
\begin{teaserfigure}
  \includegraphics[width=\textwidth]{sampleteaser}
  \caption{This is a teaser}
  \label{fig:teaser}
\end{teaserfigure}
```

`\settopmatter` Some information in the top matter is printed for certain journals or proceedings and suppressed for others. You may override these defaults using the command `\settopmatter{<settings>}`. The settings and their meanings are listed in Table 5. For example,

```
\settopmatter{printbib=false, printccs=true}
```

`\received` The command `\received{<[<stage>]<date>}` sets the history of the publication. The `<stage>` argument is optional; the default is Received for the first date and revised for the subsequent ones. For example

```
\received{February 2007}
\received[revised]{March 2009}
\received[accepted]{June 2009}
```

`\maketitle` The macro `\maketitle` must be the last command in the top matter group: i.e. it must follow the commands defined in this section.

`\shortauthors` After the command `\maketitle` the macro `\shortauthors` stores the names of the authors for the running head. You may redefine it if the list of author's name is too long, e.g.

```
\maketitle
\renewcommand{\shortauthors}{Zhou et. al.}
```

## 2.4 Algorithms

There now several good packages for typesetting algorithms [4, 5, 6], and the authors are now free to choose their favorite one.

## 2.5 Figures and tables

New ACM styles use the standard  $\LaTeX$  interface for figures and tables. There are some important items to be aware of, however.

1. The captions for figures must be entered *after* the figure bodies, and for the tables *before* the table bodies.
2. ACM uses the standard types for figures and tables and adds several new ones. In total there are following types:

**figure, table:** a standard figure or table, taking full text width in one-column formats and one column in two-column formats.

**figure\*, table\*** in two-column formats, a special figure or table taking full text width.

**teaserfigure:** a special figure before `\maketitle`.

**sidebar, marginfigure, margintable:** in the sigchi-a format, special sidebars, tables and figures on the margin.

3. Accordingly, when scaling the images, one should use the following sizes:
  - (a) For figure in one-column mode, figure\* in two-column mode or teaserfigure—`\textwidth` (in the one-column you can also use `\columnwidth`, which coincides with `\textwidth` in this case).
  - (b) For figure in two-column mode—`\columnwidth`.
  - (c) For marginfigure—`\marginparwidth`.
  - (d) For figure\* in SIGCHI Extended abstracts—`\fulltextwidth`.

It is strongly recommended to use the package `booktabs` [7] and follow its main principles of typography with respect to tables:

1. Never, ever use vertical rules.
2. Never use double rules.

It is also a good idea not to overuse horizontal rules.

For table *footnotes* you have several options described in TeX FAQ [1]. The simplest one is to use `\minipage` environment:

```
\begin{table}
\caption{Simulation Configuration}
\label{tab:conf}
\begin{minipage}{\columnwidth}
\begin{center}
\begin{tabular}{ll}
\toprule
TERRAIN\footnote{This is a table footnote. This is a
table footnote. This is a table footnote.} &
```

```

(200\,m$\times$200\,m) Square\\
Node Number      & 289\\
Node Placement   & Uniform\\
Application       & Many-to-Many/Gossip CBR Streams\\
Payload Size     & 32 bytes\\
Routing Layer    & GF\\
MAC Layer        & CSMA/MMSN\\
Radio Layer      & RADIO-ACCNOISE\\
Radio Bandwidth  & 250Kbps\\
Radio Range      & 20m--45m\\
\bottomrule
\end{tabular}
\end{center}
\bigskip
\footnotesize\emph{Source:} This is a table
sourcenote. This is a table sourcenote. This is a table
sourcenote.

\emph{Note:} This is a table footnote.
\end{minipage}
\end{table}

```

sidebar  
 marginfigure  
 margintable

Sigchi extended abstract extensively uses margin space. The package provides three environments for this with option captions:

**sidebar:** textual information on the margin

**marginfigure:** a figure on the margin

**margintable:** a table on the margin

## 2.6 Theorems

ACM classes define two theorem styles and several pre-defined theorem environments:

**acmplain:** this is the style used for theorem, conjecture, proposition, lemma, corollary, and

**acmdefinition:** this is the style used for example and definition.

## 2.7 Online-only and offline-only material

printonly  
 screenonly

Some supplementary material in ACM publication is put online, but not in the printed version. The text inside the environment `screenonly` will be typeset only when the option `screen` (see Section 2.2) is set to true. Conversely, the text inside the environment `printonly` is typeset only when this option is set to false. For example

```
\section{Supplementary materials}
```

```

\begin{printonly}
  This section is included in the online version of the paper.
\end{printonly}

\begin{screenonly}
  (The actual section).
\end{screenonly}

```

## 2.8 Bibliography

The Boolean option `natbib` selects whether to use `natbib` package for bibliography. If you use `natbib`, then commands like `\citep` and `\citeauthor` are automatically supported.

ACM journals use `natbib` and the style `ACM-Reference-Format-Journals`.

ACM conference proceedings do *not* use `natbib`. SIGGRAPH conferences use `acmsiggraph` style. SIGCHI conferences use `SIGCHI-Reference-Format` style. The other conferences employ one of the four styles:

1. `acm-abbrev`
2. `acm-alpha`
3. `acm-plain`
4. `acm-unsrt`

The author should consult specific instructions about the style to choose.

## 3 Implementation

### 3.1 Identification

We start with the declaration who we are. Most .dtx files put driver code in a separate driver file .drv. We roll this code into the main file, and use the pseudo-guard <gobble> for it.

```
1 <class>\NeedsTeXFormat{LaTeX2e}
2 <*gobble>
3 \ProvidesFile{acmart.dtx}
4 </gobble>
5 <class>\ProvidesClass{acmart}
6 [2016/04/14 v1.00 Typesetting articles for Association of
7 Computing Machinery]
```

And the driver code:

```
8 <*gobble>
9 \documentclass{ltxdoc}
10 \usepackage{array,booktabs,amsmath,graphicx,fancyvrb,tabularx}
11 \usepackage[tt=false]{libertine}
12 \usepackage[libertine]{newtxmath}
13 \usepackage[varqu]{zi4}
14 \usepackage[tableposition=top]{caption}
15 \usepackage{hypdoc}
16 \PageIndex
17 \CodelineIndex
18 \RecordChanges
19 \EnableCrossrefs
20 \begin{document}
21   \DocInput{acmart.dtx}
22 \end{document}
23 </gobble>
24 <*class>
25 \def\@classname{acmart}
```

### 3.2 Options

We need xkeyval since some of our options may have values:

```
26 \RequirePackage{xkeyval}
```

format The possible formats

```
27 \define@choicekey*+{acmart.cls}{format}[\ACM@format\ACM@format@nr]{%
28   manuscript, acmsmall, acmlarge, acmtog, sigconf, siggraph,
29   sigplan, sigchi, sigchi-a}[manuscript]{}{%
30   \ClassError{\@classname}{The option format must be manuscript,
31     acmsmall, acmlarge, acmtog, sigconf, siggraph,
32     sigplan, sigchi or sigchi-a}}
33 \def\@DeclareACMFormat#1{\DeclareOptionX{#1}{\setkeys{acmart.cls}{format=#1}}}
34 \@DeclareACMFormat{manuscript}
```

```

35 \DeclareACMFormat{acmsmall}
36 \DeclareACMFormat{acmlarge}
37 \DeclareACMFormat{acmtog}
38 \DeclareACMFormat{sigconf}
39 \DeclareACMFormat{siggraph}
40 \DeclareACMFormat{sigplan}
41 \DeclareACMFormat{sigchi}
42 \DeclareACMFormat{sigchi-a}
43 \ExecuteOptionsX{format}

\if@ACM@screen Whether we use screen mode
44 \define@boolkey+{acmart.cls}[@ACM@]{screen}[true]{%
45   \if@ACM@screen
46     \PackageInfo{\@classname}{Using screen mode}%
47   \else
48     \PackageInfo{\@classname}{Not using screen mode}%
49   \fi}{\PackageError{\@classname}{Option screen can be either true or
50     false}}
51 \ExecuteOptionsX{screen=false}

\if@ACM@review Whether we use review mode
52 \define@boolkey+{acmart.cls}[@ACM@]{review}[true]{%
53   \if@ACM@review
54     \PackageInfo{\@classname}{Using review mode}%
55   \else
56     \PackageInfo{\@classname}{Not using review mode}%
57   \fi}{\PackageError{\@classname}{Option review can be either true or
58     false}}
59 \ExecuteOptionsX{review=false}

\if@ACM@natbib Whether we use natbib mode
60 \define@boolkey+{acmart.cls}[@ACM@]{natbib}[true]{%
61   \if@ACM@natbib
62     \PackageInfo{\@classname}{Using natbib mode}%
63   \else
64     \PackageInfo{\@classname}{Not using natbib mode}%
65   \fi}{\PackageError{\@classname}{Option natbib can be either true or
66     false}}
67 \ExecuteOptionsX{natbib=false}

\if@ACM@anonymous Whether we use anonymous mode
68 \define@boolkey+{acmart.cls}[@ACM@]{anonymous}[true]{%
69   \if@ACM@anonymous
70     \PackageInfo{\@classname}{Using anonymous mode}%
71   \else
72     \PackageInfo{\@classname}{Not using anonymous mode}%
73   \fi}{\PackageError{\@classname}{Option anonymous can be either true or
74     false}}
75 \ExecuteOptionsX{anonymous=false}

```



`\ACM@fontsize` The font size to pass to the base class

```

76 \def\ACM@fontsize{}
77 \DeclareOptionX{9pt}{\edef\ACM@fontsize{\CurrentOption}}
78 \DeclareOptionX{10pt}{\edef\ACM@fontsize{\CurrentOption}}
79 \DeclareOptionX{11pt}{\edef\ACM@fontsize{\CurrentOption}}
80 \DeclareOptionX{12pt}{\edef\ACM@fontsize{\CurrentOption}}

81 \DeclareOptionX{*}{\PassOptionsToClass{\CurrentOption}{amsart}}
82 \ProcessOptionsX
83 \ClassInfo{\@classname}{Using format \ACM@format, number \ACM@format@nr}

```

### 3.3 Setting switches

`\if@ACM@manuscript` Whether we use manuscript mode

```

84 \newif\if@ACM@manuscript

```

`\if@ACM@journal` There are two kinds of publications: journals and books

```

85 \newif\if@ACM@journal

```

`\if@ACM@sigchiamode` The formatting of SIGCHI abstracts is quite unusual. We have a special switch for them.

```

86 \newif\if@ACM@sigchiamode

```

Setting up switches

```

87 \ifnum\ACM@format@nr=0\relax
88   \@ACM@manuscripttrue
89 \else
90   \@ACM@manuscriptfalse
91 \fi
92 \@ACM@sigchiamodefalse
93 \ifcase\ACM@format@nr
94 \relax % manuscript
95   \@ACM@journaltrue
96 \or % acmsmall
97   \@ACM@journaltrue
98 \or % acmlarge
99   \@ACM@journaltrue
100 \or % acmtog
101   \@ACM@journaltrue
102 \or % sigconf
103   \@ACM@journalfalse
104 \or % siggraph
105   \@ACM@journalfalse
106 \or % sigplan
107   \@ACM@journalfalse
108 \or % sigchi
109   \@ACM@journalfalse
110 \or % sigchi-a
111   \@ACM@journalfalse
112   \@ACM@sigchiamodetrue
113 \fi

```

### 3.4 Loading base class and package

At this point we either have `\ACM@fontsize`, or use defaults

```

114 \ifx\ACM@fontsize\empty
115   \ifcase\ACM@format@nr
116     \relax % manuscript
117     \def\ACM@fontsize{9pt}%
118   \or% acmsmall
119     \def\ACM@fontsize{10pt}%
120   \or % acmlarge
121     \def\ACM@fontsize{9pt}%
122   \or % acmtog
123     \def\ACM@fontsize{9pt}%
124   \or % sigconf
125     \def\ACM@fontsize{9pt}%
126   \or % siggraph
127     \def\ACM@fontsize{9pt}%
128   \or % sigplan
129     \def\ACM@fontsize{9pt}%
130   \or % sigchi
131     \def\ACM@fontsize{10pt}%
132   \or % sigchi-a
133     \def\ACM@fontsize{10pt}%
134   \fi
135 \fi
136 \ClassInfo{\@classname}{Using fontsize \ACM@fontsize}
137 \LoadClass[\ACM@fontsize, reqno]{amsart}
138 \RequirePackage{microtype}

```

We need `totpages` package to calculate the number of pages

```

139 \RequirePackage{totpages}

```

The `amsmath \collect@body` is defined using `\def`. We load `environ` to access the `\long` version of the command

```

140 \RequirePackage{environ}

```

We use `setspace` for doublespacing

```

141 \if@ACM@manuscript
142 \RequirePackage{setspace}
143 \onehalfspacing
144 \fi

```

Citations:

```

145 \if@ACM@natbib
146   \RequirePackage{natbib}
147   \bibpunct[, ]{[}{]}{;}{a}{},{}
148 \fi

```

Before we call `hyperref`, we redefine `\startsection` commands to their  $\LaTeX$  defaults, since `amsart` ones are too AMS-specific. We need to do this early since we want `hyperref` to have a chance to redefine them again:

```

149 \def\@startsection#1#2#3#4#5#6{%
150   \if@noskipsec \leavevmode \fi
151   \par
152   \@tempskipa #4\relax
153   \@afterindenttrue
154   \ifdim \@tempskipa <\z@
155     \@tempskipa -\@tempskipa \@afterindentfalse
156   \fi
157   \if@nobreak
158     \everypar{}%
159   \else
160     \addpenalty\@secpenalty\addvspace\@tempskipa
161   \fi
162   \@ifstar
163     {\@ssect{#3}{#4}{#5}{#6}}%
164     {\@dblarg{\@sect{#1}{#2}{#3}{#4}{#5}{#6}}}
165 \def\@sect#1#2#3#4#5#6[#7]#8{%
166   \ifnum #2>\c@secnumdepth
167     \let\@svsec\@empty
168   \else
169     \refstepcounter{#1}%
170     \protected@edef\@svsec{\@secntformat{#1}\relax}%
171   \fi
172   \@tempskipa #5\relax
173   \ifdim \@tempskipa>\z@
174     \begingroup
175     #6{%
176       \@hangfrom{\hskip #3\relax\@svsec}%
177       \interlinepenalty \@M #8\@par}%
178     \endgroup
179     \csname #1mark\endcsname{#7}%
180     \addcontentsline{toc}{#1}{%
181       \ifnum #2>\c@secnumdepth \else
182         \protect\numberline{\csname the#1\endcsname}%
183       \fi
184       #7}%
185   \else
186     \def\@svsechd{%
187       #6{\hskip #3\relax
188         \@svsec #8}%
189       \csname #1mark\endcsname{#7}%
190       \addcontentsline{toc}{#1}{%
191         \ifnum #2>\c@secnumdepth \else
192           \protect\numberline{\csname the#1\endcsname}%
193         \fi
194         #7}}%
195   \fi
196   \@xsect{#5}}
197 \def\@xsect#1{%
198   \@tempskipa #1\relax

```

```

199 \ifdim \@tempskipa>\z@
200   \par \nobreak
201   \vskip \@tempskipa
202   \@afterheading
203 \else
204   \@nobreakfalse
205   \global\@noskipsectrue
206   \everypar{%
207     \if@noskipsec
208       \global\@noskipsecfalse
209       {\setbox\z@\lastbox}%
210       \clubpenalty\@M
211       \begingroup \@svsechd \endgroup
212       \unskip
213       \@tempskipa #1\relax
214       \hskip -\@tempskipa
215     \else
216       \clubpenalty \@clubpenalty
217       \everypar{}%
218     \fi}%
219 \fi
220 \ignorespaces}
221 \def\@secntformat#1{\csname the#1\endcsname\quad}
222 \def\@ssect#1#2#3#4#5{%
223   \@tempskipa #3\relax
224   \ifdim \@tempskipa>\z@
225     \begingroup
226       #4{%
227         \@hangfrom{\hskip #1}%
228         \interlinepenalty \@M #5\@par}%
229     \endgroup
230   \else
231     \def\@svsechd{#4{\hskip #1\relax #5}}%
232   \fi
233   \@xsect{#3}}

And hyperref
234 \let\@footnotemark@nolink\@footnotemark
235 \let\@footnotetext@nolink\@footnotetext
236 \RequirePackage{hyperref}
237 \if@ACM@sigchiamode
238   \urlstyle{sf}
239 \else
240   \urlstyle{rm}
241 \fi
242 \if@ACM@screen
243   \hypersetup{colorlinks}
244 \else
245   \hypersetup{hidelinks}
246 \fi

```

### Bibliography mangling

```
247 \if@ACM@natbib
248   \let\citeN\cite
249   \let\cite\citep
250   \let\citeANP\citeauthor
251   \let\citeNN\citeyearpar
252   \let\citeyearNP\citeyear
253   \let\citeyear\citeyearpar
254   \let\citeNP\citealt
255   \def\shortcite#1{\citeyear{#1}}
256   \DeclareRobustCommand\citeA
257     {\begingroup\NAT@swafalse
258       \let\NAT@ctype\@ne\NAT@partrue\NAT@fullfalse\NAT@open\NAT@citetp}
259   \providecommand\newblock{}
260 \else
261   \providecommand\citename[1]{#1}
262 \fi
```

### Graphics and color

```
263 \RequirePackage{graphicx, xcolor}
```

## 3.5 Paper size and paragraphing

We use geometry for dimensions

```
264 \RequirePackage{geometry}
265 \ifcase\ACM@format@nr
266 \relax % manuscript
267   \geometry{letterpaper}%
268 \or% acmsmall
269   \geometry{twoside=true,
270     includeheadfoot, head=1pc, foot=2pc,
271     paperwidth=6.75in, paperheight=10in,
272     top=58pt, bottom=44pt, inner=46pt, outer=46pt
273   }%
274 \or % acmlarge
275   \geometry{twoside=true, head=1pc, foot=2pc,
276     paperwidth=8.5in, paperheight=11in,
277     includeheadfoot,
278     top=78pt, bottom=114pt, inner=81pt, outer=81pt
279   }%
280 \or % acmtog
281   \geometry{twoside=true, head=1pc, foot=2pc,
282     paperwidth=8.5in, paperheight=11in,
283     includeheadfoot, columnsep=24pt,
284     top=52pt, bottom=75pt, inner=52pt, outer=52pt
285   }%
286 \or % sigconf
287   \geometry{twoside=true,
288     paperwidth=8.5in, paperheight=11in,
```

```

289     includeheadfoot, columnsep=2pc,
290     top=57pt, bottom=75pt, inner=54pt, outer=57pt
291 }%
292 \or % siggraph
293   \geometry{twoside=true,
294     paperwidth=8.5in, paperheight=11in,
295     includeheadfoot, columnsep=2pc,
296     top=57pt, bottom=75pt, inner=54pt, outer=57pt
297   }%
298 \or % sigplan
299   \geometry{twoside=true,
300     paperwidth=8.5in, paperheight=11in,
301     includeheadfoot, columnsep=2pc,
302     top=74pt, bottom=70pt, inner=54pt, outer=54pt
303   }%
304 \or % sigchi
305   \geometry{twoside=true,
306     paperwidth=8.5in, paperheight=11in,
307     includeheadfoot, columnsep=2pc,
308     top=66pt, bottom=78pt, inner=54pt, outer=48pt
309   }%
310 \or % sigchi-a
311   \geometry{twoside=false,
312     paperwidth=11in, paperheight=8.5in,
313     includeheadfoot, marginparsep=72pt,
314     marginparwidth=170pt, columnsep=20pt,
315     top=72pt, bottom=72pt, left=314pt, right=72pt
316   }%
317   \@mparswitchfalse
318   \reversemarginpar
319 \fi

\parindent Paragraping
\parskip
320 \setlength\parindent{10\p@}
321 \setlength\parskip{\z@}
322 \ifcase\ACM@format@nr
323 \relax % manuscript
324 \or % acmsmall
325 \or % acmlarge
326 \or % acmtog
327   \setlength\parindent{9\p@}%
328 \or % sigconf
329 \or % siggraph
330 \or % sigplan
331 \or % sigchi
332 \or % sigchi-a
333 \fi

```

\footnoterule Tschichold's rules:

```

334 \def\footnoterule{\kern-3\p@
335   \hrule \@width \columnwidth \kern 2.6\p@}

\endminipage We do not use footnote rules in minipages
336 \def\endminipage{%
337   \par
338   \unskip
339   \ifvoid\@mpfootins\else
340     \vskip\skip\@mpfootins
341     \normalcolor
342     \unvbox\@mpfootins
343   \fi
344   \@minipagefalse %% added 24 May 89
345   \color@endgroup
346   \egroup
347   \expandafter\@iiiparbox\@mpargs{\unvbox\@tempboxa}}
348

\@makefnmark We do not use indentation for footnotes
349 \def\@makefnmark{\noindent\@makefnmark}

\@footnotetext In sigchi-a mode our footnotes are on the margins!
350 \if@ACM@sigchiamode
351 \long\def\@footnotetext#1{\marginpar{%
352   \reset@font\small
353   \interlinepenalty\interfootnotelinepenalty
354   \protected@edef\@currentlabel{%
355     \csname p@footnote\endcsname\@thefnmark
356   }%
357   \color@begingroup
358     \@makefnmark{%
359       \rule{z@\footnotesep\ignorespaces#1\@finalstrut\strutbox}%
360     \color@endgroup}}}%
361 \fi

```

### 3.6 Fonts

We use Times throughout

```

362 \usepackage[tt=false]{libertine}
363 \usepackage[libertine]{newtxmath}
364 \usepackage[varqu]{zi4}

The sigchi abstract are sans serif:
365 \if@ACM@sigchiamode
366   \renewcommand{\familydefault}{\sfdefault}
367 \fi

```

### 3.7 Floats

We use caption package

```
368 \RequirePackage{caption, float}
369 \captionsetup[table]{position=top}
370 \if@ACM@journal
371   \captionsetup{labelfont={sf, small},
372     textfont={sf, small}, margin=\z@}
373   \captionsetup[figure]{name={Fig.}}
374 \else
375   \captionsetup{labelfont={bf},
376     textfont={bf}, labelsep=colon, margin=\z@}
377   \ifcase\ACM@format@nr
378     \relax % manuscript
379     \or% acmsmall
380     \or % acmlarge
381     \or % acmtog
382     \or % sigconf
383     \or % siggraph
384     \captionsetup{textfont={it}}
385     \or % sigplan
386     \or % sigchi
387     \captionsetup[figure]{labelfont={bf, small},
388       textfont={bf, small}}
389     \or % sigchi-a
390     \captionsetup[figure]{labelfont={bf, small},
391       textfont={bf, small}}
392   \fi
393 \fi
```

sidebar The sidebar environment:

```
394 \newfloat{sidebar}{}{sbar}
395 \floatname{sidebar}{Sidebar}
396 \renewenvironment{sidebar}{}{\Collect@Body\@sidebar}{}{}
```

\@sidebar The processing of the saved text

```
397 \long\def\@sidebar#1{\bgroup\captionsetup{type=sidebar}%
398   \marginpar{\small#1}\egroup}
```

marginfigure The marginfigure environment:

```
399 \newenvironment{marginfigure}{}{\Collect@Body\@marginfigure}{}{}
```

\@marginfigure The processing of the saved text

```
400 \long\def\@marginfigure#1{\bgroup\captionsetup{type=figure}%
401   \marginpar{\small#1}\egroup}
```

marginable The marginable environment:

```
402 \newenvironment{marginable}{}{\Collect@Body\@marginable}{}{}
```



`\@margintable` The processing of the saved text

```

403 \long\def\@margintable#1{\bgroup\captionsetup{type=table}%
404   \marginpar{\small#1}\egroup}

```

SIGCHI extended abstract provides an interesting possibility to push into the margin. Here we use `figure*` and `table*` for this.

`\fulltextwidth` We define the width of the boxes as

```

405 \newdimen\fulltextwidth
406 \fulltextwidth=\dimexpr(\textwidth+\marginparwidth+\marginparsep)

```

`\dblfloat` We redefine the double float command. First, we make the size bigger. Second, our default position is going to be `tp` (to give marginalia a chance)

```

407 \if@ACM@sigchiamode
408 \def\@dblfloat{\bgroup\columnwidth=\fulltextwidth
409   \let\@endfloatbox\@endwidefloatbox
410   \def\@fpsadddefault{\def\@fps{tp}}}%
411   \@float}
412 \fi

```

`\enddblfloat` And the end. Just adding a `\bgroup`.

```

413 \if@ACM@sigchiamode
414 \def\enddblfloat{%
415   \end@float\egroup}
416 \fi

```

`\@endwidefloatbox` This is the end of a wide box - we basically move everything to the left

```

417 \def\@endwidefloatbox{%
418   \par\vskip\z@skip
419   \@minipagefalse
420   \outer@nobreak
421   \egroup
422   \color@endbox
423   \global\setbox\@currbox=\vbox{\moveleft
424     \dimexpr(\fulltextwidth-\textwidth)\box\@currbox}%
425   \wd\@currbox=\textwidth
426 }

```

### 3.8 Top matter data

We use `keyval` interface to define journal title and relevant information

```

427 \define@choicekey*+{ACM}{acmJournal}[\@journalCode\@journalCode@nr]{%
428   CIE,%
429   CSUR,%
430   JACM,%
431   JDIQ,%
432   JEA,%
433   JERIC,%
434   JETC,%

```

```

435 JOCCH,%
436 TAAS,%
437 TACCESS,%
438 TACO,%
439 TALG,%
440 TALLIP,%
441 TAP,%
442 TCPS,%
443 TEAC,%
444 TECS,%
445 TIIS,%
446 TISSEC,%
447 TIST,%
448 TKDD,%
449 TMIS,%
450 TOCE,%
451 TOCHI,%
452 TOCL,%
453 TOCS,%
454 TOCT,%
455 TODAES,%
456 TODS,%
457 TOG,%
458 TOIS,%
459 TOIT,%
460 TOMACS,%
461 TOMM,%
462 TOMPECS,%
463 TOMS,%
464 TOPC,%
465 TOPLAS,%
466 TOS,%
467 TOSEM,%
468 TOSN,%
469 TRETs,%
470 TSAS,%
471 TSLP,%
472 TWEB%
473 }{%
474 \ifcase\@journalCode@nr
475 \relax % CIE
476 \def\@journalName{ACM Computers in Entertainment}%
477 \def\@journalNameShort{ACM Comput. Entertain.}%
478 \def\@permissionCodeOne{1544-3574}%
479 \or % CSUR
480 \def\@journalName{ACM Computing Surveys}%
481 \def\@journalNameShort{ACM Comput. Surv.}%
482 \def\@permissionCodeOne{0360-0300}%
483 \or % JACM
484 \def\@journalName{Journal of the ACM}%

```

```

485 \def\@journalNameShort{J. ACM}%
486 \def\@permissionCodeOne{0004-5411}%
487 \or % JDIQ
488 \def\@journalName{ACM Journal of Data and Information Quality}%
489 \def\@journalNameShort{ACM J. Data Inform. Quality}%
490 \def\@permissionCodeOne{1936-1955}%
491 \or % JEA
492 \def\@journalName{ACM Journal of Experimental Algorithmics}%
493 \def\@journalNameShort{ACM J. Exp. Algor.}%
494 \def\@permissionCodeOne{1084-6654}%
495 \or % JERIC
496 \def\@journalName{ACM Journal of Educational Resources in Computing}%
497 \def\@journalNameShort{ACM J. Edu. Resources in Comput.}%
498 \def\@permissionCodeOne{1073-0516}%
499 \or % JETC
500 \def\@journalName{ACM Journal on Emerging Technologies in Computing Systems}%
501 \def\@journalNameShort{ACM J. Emerg. Technol. Comput. Syst.}%
502 \def\@permissionCodeOne{1550-4832}%
503 \or % JOCCH
504 \def\@journalName{ACM Journal on Computing and Cultural Heritage}%
505 \def\@journalName{ACM J. Comput. Cult. Herit.}%
506 \or % TAAS
507 \def\@journalName{ACM Transactions on Autonomous and Adaptive Systems}%
508 \def\@journalNameShort{ACM Trans. Autonom. Adapt. Syst.}%
509 \def\@permissionCodeOne{1556-4665}%
510 \or % TACCESS
511 \def\@journalName{ACM Transactions on Accessible Computing}%
512 \def\@journalNameShort{ACM Trans. Access. Comput.}%
513 \def\@permissionCodeOne{1936-7228}%
514 \or % TACO
515 \def\@journalName{ACM Transactions on Architecture and Code Optimization}%
516 \or % TALG
517 \def\@journalName{ACM Transactions on Algorithms}%
518 \def\@journalNameShort{ACM Trans. Algor.}%
519 \def\@permissionCodeOne{1549-6325}%
520 \or % TALLIP
521 \def\@journalName{ACM Transactions on Asian and Low-Resource Language Information Processing}%
522 \def\@journalNameShort{ACM Trans. Asian Low-Resour. Lang. Inf. Process.}%
523 \def\@permissionCodeOne{2375-4699}%
524 \or % TAP
525 \def\@journalName{ACM Transactions on Applied Perception}%
526 \or % TCPS
527 \def\@journalName{ACM Transactions on Cyber-Physical Systems}%
528 \or % TEAC
529 \def\@journalName{ACM Transactions on Economics and Computation}%
530 \or % TECS
531 \def\@journalName{ACM Transactions on Embedded Computing Systems}%
532 \def\@journalNameShort{ACM Trans. Embedd. Comput. Syst.}%
533 \def\@permissionCodeOne{1539-9087}%
534 \or % TIIS

```

```

535 \def\@journalName{ACM Transactions on Interactive Intelligent Systems}%
536 \def\@journalNameShort{ACM Trans. Interact. Intell. Syst.}%
537 \def\@permissionCodeOne{2160-6455}%
538 \or % TISSEC
539 \def\@journalName{ACM Transactions on Information and System Security}%
540 \def\@journalNameShort{ACM Trans. Info. Syst. Sec.}%
541 \def\@permissionCodeOne{1094-9224}%
542 \or % TIST
543 \def\@journalName{ACM Transactions on Intelligent Systems and Technology}%
544 \def\@journalNameShort{ACM Trans. Intell. Syst. Technol.}%
545 \def\@permissionCodeOne{2157-6904}%
546 \or % TKDD
547 \def\@journalName{ACM Transactions on Knowledge Discovery from Data}%
548 \def\@journalNameShort{ACM Trans. Knowl. Discov. Data.}%
549 \def\@permissionCodeOne{1556-4681}%
550 \or % TMIS
551 \def\@journalName{ACM Transactions on Management Information Systems}%
552 \def\@journalNameShort{ACM Trans. Manag. Inform. Syst.}%
553 \def\@permissionCodeOne{2158-656X}%
554 \or % TOCE
555 \def\@journalName{ACM Transactions on Computing Education}%
556 \def\@journalNameShort{ACM Trans. Comput. Educ.}%
557 \def\@permissionCodeOne{1946-6226}%
558 \or % TOCHI
559 \def\@journalName{ACM Transactions on Computer-Human Interaction}%
560 \def\@journalNameShort{ACM Trans. Comput.-Hum. Interact.}%
561 \def\@permissionCodeOne{1073-0516}%
562 \or % TOCL
563 \def\@journalName{ACM Transactions on Computational Logic}%
564 \def\@journalNameShort{ACM Trans. Comput. Logic}%
565 \def\@permissionCodeOne{1529-3785}%
566 \or % TOCS
567 \def\@journalName{ACM Transactions on Computer Systems}%
568 \def\@journalNameShort{ACM Trans. Comput. Syst.}%
569 \def\@permissionCodeOne{0734-2071}%
570 \or % TOCT
571 \def\@journalName{ACM Transactions on Computation Theory}%
572 \def\@journalNameShort{ACM Trans. Comput. Theory}%
573 \def\@permissionCodeOne{1942-3454}%
574 \or % TODAES
575 \def\@journalName{ACM Transactions on Design Automation of Electronic Systems}%
576 \def\@journalNameShort{ACM Trans. Des. Autom. Electron. Syst.}%
577 \def\@permissionCodeOne{1084-4309}%
578 \or % TODS
579 \def\@journalName{ACM Transactions on Database Systems}%
580 \def\@journalNameShort{ACM Trans. Datab. Syst.}%
581 \def\@permissionCodeOne{0362-5915}%
582 \or % TOG
583 \def\@journalName{ACM Transactions on Graphics}%
584 \def\@journalNameShort{ACM Trans. Graph.}%

```

```

585 \def\@permissionCodeOne{0730-0301}
586 \or % TOIS
587 \def\@journalName{ACM Transactions on Information Systems}%
588 \def\@journalName{ACM Transactions on Information Systems}%
589 \def\@permissionCodeOne{1046-8188}%
590 \or % TOIT
591 \def\@journalName{ACM Transactions on Internet Technology}%
592 \def\@journalNameShort{ACM Trans. Internet Technol.}%
593 \def\@permissionCodeOne{1533-5399}%
594 \or % TOMACS
595 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
596 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
597 \def\@journalNameShort{ACM Trans. Model. Comput. Simul.}%
598 \or % TOMM
599 \def\@journalName{ACM Transactions on Multimedia Computing, Communications and Applications}%
600 \def\@journalNameShort{ACM Trans. Multimedia Comput. Commun. Appl.}%
601 \def\@permissionCodeOne{1551-6857}%
602 \def\@permissionCodeTwo{0100}%
603 \or % TOMPECS
604 \def\@journalName{ACM Transactions on Modeling and Performance Evaluation of Computing Systems}%
605 \def\@journalNameShort{ACM Trans. Model. Perform. Eval. Comput. Syst.}%
606 \def\@permissionCodeOne{2376-3639}%
607 \or % TOMS
608 \def\@journalName{ACM Transactions on Mathematical Software}%
609 \def\@journalNameShort{ACM Trans. Math. Softw.}%
610 \def\@permissionCodeOne{0098-3500}%
611 \or % TOPC
612 \def\@journalName{ACM Transactions on Parallel Computing}%
613 \def\@journalNameShort{ACM Trans. Parallel Comput.}%
614 \def\@permissionCodeOne{1539-9087}%
615 \or % TOPLAS
616 \def\@journalName{ACM Transactions on Programming Languages and Systems}%
617 \def\@journalNameShort{ACM Trans. Program. Lang. Syst.}%
618 \def\@permissionCodeOne{0164-0925}%
619 \or % TOS
620 \def\@journalName{ACM Transactions on Storage}%
621 \def\@journalNameShort{ACM Trans. Storage}%
622 \def\@permissionCodeOne{1553-3077}%
623 \or % TOSEM
624 \def\@journalName{ACM Transactions on Software Engineering and Methodology}%
625 \def\@journalNameShort{ACM Trans. Softw. Eng. Methodol.}%
626 \def\@permissionCodeOne{1049-331X}%
627 \or % TOSN
628 \def\@journalName{ACM Transactions on Sensor Networks}%
629 \def\@journalNameShort{ACM Trans. Sensor Netw.}%
630 \def\@permissionCodeOne{1550-4859}%
631 \or % TRET
632 \def\@journalName{ACM Transactions on Reconfigurable Technology and Systems}%
633 \def\@journalNameShort{ACM Trans. Reconfig. Technol. Syst.}%
634 \def\@permissionCodeOne{1936-7406}%

```

```

635 \or % TSAS
636 \def\@journalName{ACM Transactions on Spatial Algorithms and Systems}%
637 \def\@journalNameShort{ACM Trans. Spatial Algorithms Syst.}%
638 \def\@permissionCodeOne{2374-0353}%
639 \or % TSLP
640 \def\@journalName{ACM Transactions on Speech and Language Processing}%
641 \def\@journalNameShort{ACM Trans. Speech Lang. Process.}%
642 \def\@permissionCodeOne{1550-4875}%
643 \or % TWEB
644 \def\@journalName{ACM Transactions on the Web}%
645 \def\@journalNameShort{ACM Trans. Web}%
646 \def\@permissionCodeOne{1559-1131}%
647 \fi
648 \ClassInfo{\@classname}{Using journal code \@journalCode}%
649 }{%
650 \ClassError{\@classname}{Incorrect journal #1}%
651 }%

\acmJournal And the syntactic sugar around it
652 \def\acmJournal#1{\setkeys{ACM}{acmJournal=#1}}

The defaults:
653 \def\@journalName{}%
654 \def\@journalNameShort{\@journalName}%
655 \def\@permissionCodeOne{XXXX-XX}%
656 \def\@permissionCodeTwo{}%

\acmConference This is the conference command
657 \newcommand\acmConference[4][{}]{%
658 \gdef\acmConference@shortname{#1}%
659 \gdef\acmConference@name{#2}%
660 \gdef\acmConference@date{#3}%
661 \gdef\acmConference@venue{#4}%
662 \ifx\acmConference@shortname\@empty
663 \gdef\acmConference@shortname{#2}%
664 \fi}
665 \acmConference[Conference'17]{ACM Conference}{July 2017}{Washington,
666 DC, USA}

\subtitle The subtitle macro
667 \def\subtitle#1{\def\@subtitle{#1}}
668 \subtitle{}

\num@authors The total number of authors
669 \newcount\num@authors
670 \num@authors=0\relax

\author Adding an author to the list of authors and addresses
671 \renewcommand\author[2][{}]{%

```

```

672 \global\advance\num@authors by 1\relax
673 \ifx\addresses\@empty
674   \if@ACM@anonymous
675     \gdef\addresses{\@author{Anonymous}}%
676     \gdef\authors{Anonymous}%
677   \else
678     \gdef\addresses{\@author{#2}}%
679     \gdef\authors{#2}%
680   \fi
681 \else
682   \if@ACM@anonymous
683     \g@addto@macro\addresses{\and\@author{Anonymous}}%
684     \g@addto@macro\authors{\and Anonymous}%
685   \else
686     \g@addto@macro\addresses{\and\@author{#2}}%
687     \g@addto@macro\authors{\and#2}%
688   \fi
689 \fi
690 \if@ACM@anonymous
691   \ifx\shortauthors\@empty
692     \gdef\shortauthors{Anon.}%
693   \else
694     \g@addto@macro\shortauthors{\and Anon.}%
695   \fi
696 \else
697   \def\@tempa{#1}%
698   \ifx\@tempa\@empty
699     \ifx\shortauthors\@empty
700       \gdef\shortauthors{#2}%
701     \else
702       \g@addto@macro\shortauthors{\and#2}%
703     \fi
704   \else
705     \ifx\shortauthors\@empty
706       \gdef\shortauthors{#1}%
707     \else
708       \g@addto@macro\shortauthors{\and#1}%
709     \fi
710   \fi
711 \fi}

```

`\affiliation` The macro `\affiliation` mimics `\address` from `amsart`. Note that it has an optional argument we do not currently need, but keep for the possible future use.

```

712 \newcommand{\affiliation}[2][{}]{%
713   \if@ACM@anonymous
714     \g@addto@macro\addresses{\affiliation{}}{Address}}%
715   \else
716     \g@addto@macro\addresses{\affiliation{#1}{#2}}%
717   \fi}

```

`\email` The macro `\email` mimics `\email` from `amsart`. Again it has an optional argument we do not currently need, but keep for the possible future use.

```

718 \renewcommand{\email}[2][{}]{%
719   \if@ACM@anonymous
720     \g@addto@macro\addresses{\email{}}{e-mail}}%
721   \else
722     \g@addto@macro\addresses{\email{#1}{#2}}%
723   \fi}

```

`\@titlenotes` The `titlenotes`

```

724 \def\@titlenotes{}

```

`\titlenote` Adding note to the title

```

725 \def\titlenote#1{%
726   \g@addto@macro\@title{\footnotemark}%
727   \if@ACM@anonymous
728     \g@addto@macro\@titlenotes{%
729       \stepcounter{footnote}\footnotetext{Title note}}%
730   \else
731     \g@addto@macro\@titlenotes{\stepcounter{footnote}\footnotetext{#1}}%
732   \fi}

```

`\@subtitlenotes` The `subtitlenotes`

```

733 \def\@subtitlenotes{}

```

`\subtitlenote` Adding note to the subtitle

```

734 \def\subtitlenote#1{%
735   \g@addto@macro\@subtitle{\footnotemark}%
736   \if@ACM@anonymous
737     \g@addto@macro\@subtitlenotes{%
738       \stepcounter{footnote}\footnotetext{Subtitle note}}%
739   \else
740     \g@addto@macro\@subtitlenotes{%
741       \stepcounter{footnote}\footnotetext{#1}}%
742   \fi}

```

`\@authornotes` The `subtitlenotes`

```

743 \def\@authornotes{}

```

`\authornote` Adding note to the author

```

744 \def\authornote#1{\g@addto@macro\addresses{\@authornotemark}%
745   \if@ACM@anonymous
746     \g@addto@macro\@authornotes{%
747       \stepcounter{footnote}\footnotetext{Author note}}%
748   \else
749     \g@addto@macro\@authornotes{%
750       \stepcounter{footnote}\footnotetext{#1}}%
751   \fi}

```



`\acmVolume` The current volume  
752 `\def\acmVolume#1{\def\@acmVolume{#1}}`  
753 `\acmVolume{VV}`

`\acmNumber` The current number  
754 `\def\acmNumber#1{\def\@acmNumber{#1}}`  
755 `\acmNumber{NNN}`

`\acmArticle` The current article  
756 `\def\acmArticle#1{\def\@acmArticle{#1}}`  
757 `\acmArticle{AA}`

`\articleSeq` The sequence number  
758 `\def\articleSeq#1{\def\@articleSeq{#1}}`  
759 `\articleSeq{\@acmArticle}`

`\acmYear` The current year  
760 `\def\acmYear#1{\def\@acmYear{#1}}`  
761 `\acmYear{YYYY}`

`\acmMonth` The current month  
762 `\def\acmMonth#1{\def\@acmMonth{#1}}`  
763 `\acmMonth{MM}`

`\@acmPubDate` The publication date  
764 `\def\@acmPubDate{\ifcase\@acmMonth\or`  
765 `January\or February\or March\or April\or May\or June\or`  
766 `July\or August\or September\or October\or November\or`  
767 `December\fi~\@acmYear}`

`\acmPrice` The price  
768 `\def\acmPrice#1{\def\@acmPrice{#1}}`  
769 `\acmPrice{15.00}`

`\isbn` The paper isbn  
770 `\def\isbn#1{\def\@isbn{#1}}`  
771 `\isbn{978-xxx-xxxx}`

`\doi` The paper isbn  
772 `\def\doi#1{\def\@doi{\url{#1}}}`  
773 `\doi{dddddddddd}`

`\startPage` The start page of the paper  
774 `\def\startPage#1{\def\@startPage{#1}}`  
775 `\startPage{}`

`\terms` Terms are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.

```

776 \def\terms#1{\def\@terms{#1}}
777 \terms{}

```

`\keywords` Keywords are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.

```

778 \def\keywords#1{\def\@keywords{#1}}
779 \keywords{}

```

`abstract` Amsart puts abstract in the box. Since we do not know whether we will use two column mode, we prefer to save the text

```

780 \renewenvironment{abstract}{\Collect@Body\@saveabstract}{}

```

`\@saveabstract` And saving the abstract

```

781 \long\def\@saveabstract#1{\long\gdef\@abstract{#1}}
782 \@saveabstract{}

```

`\@empty` The long version of `\@empty` (to compare with `\@abstract`)

```

783 \long\def\@empty{}

```

`\if@ACM@printcss` Whether to print CCS

```

784 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printcss}[true]{%
785   \if@ACM@printcss
786     \ClassInfo{\@classname}{Printing CSS}%
787   \else
788     \ClassInfo{\@classname}{Suppressing CSS}%
789   \fi}{\ClassError{\@classname}{printcss must be true or false}}

```

`\if@ACM@printbib` Whether to print ACM bib

```

790 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printbib}[true]{%
791   \if@ACM@printcss
792     \ClassInfo{\@classname}{Printing bibformat}%
793   \else
794     \ClassInfo{\@classname}{Suppressing bibformat}%
795   \fi}{\ClassError{\@classname}{printbib must be true or false}}

```

`\settopmatter` The usual syntactic sugar

```

796 \def\settopmatter#1{\setkeys{@ACM@topmatter@}{#1}}

```

Now the settings

```

797 \settopmatter{printcss=true}
798 \if@ACM@manuscript
799   \settopmatter{printbib=false}
800 \else
801   \if@ACM@journal
802     \settopmatter{printbib=true}
803   \else

```

```

804 \settopmatter{printbib=false}
805 \fi
806 \fi

\@received The container for the paper history
807 \def\@received{}

\received The \received command
808 \newcommand\received[2][\def\@tempa{#1}%
809 \ifx\@tempa\empty
810 \ifx\@received\empty
811 \gdef\@received{Received #2}%
812 \else
813 \g@addto@macro{\@received}{; revised #2}%
814 \fi
815 \else
816 \ifx\@received\empty
817 \gdef\@received{#1 #2}%
818 \else
819 \g@addto@macro{\@received}{; #1 #2}%
820 \fi
821 \fi}
822 \AtEndDocument{%
823 \ifx\@received\empty\else
824 \par\bigskip\noindent\small\normalfont\@received\par
825 \fi}

```

### 3.9 Concepts system

We exclude CCSXML stuff generated by the ACM system:

```

826 \RequirePackage{comment}
827 \excludecomment{CCSXML}

\@concepts This is the storage macro for concepts
828 \let\@concepts\empty

\ccsdesc The first argument is the significance, the second is the concept(s)
829 \newcommand\ccsdesc[2][100]{%
830 \ccsdesc@parse#1~#2~}

\ccsdesc@parse The parser of the expression Significance~General~Specific:
831 \def\ccsdesc@parse#1~#2~#3~{%
832 \expandafter\ifx\csname CCS@#2\endcsname\relax
833 \expandafter\gdef\csname CCS@#2\endcsname{\textbullet\textbf{#2} $\to$ }%
834 \g@addto@macro{\@concepts}{\csname CCS@#2\endcsname}\fi
835 \expandafter\g@addto@macro\expandafter{\csname CCS@#2\endcsname}{%
836 \ifnum#1>499\textbf{#3; } \else
837 \ifnum#1>299\textit{#3; } \else
838 #3; \fi\fi}}

```

### 3.10 Copyright system

This is from acmcopyright.sty

`\if@printcopyright` A flag whether to print copyright symbol  
839 `\newif\if@printcopyright`  
840 `\@printcopyrighttrue`

`\if@printpermission` Whether to print permission block  
841 `\newif\if@printpermission`  
842 `\@printpermissiontrue`

`\if@acmowned` Whether ACM owns the rights to the paper  
843 `\newif\if@acmowned`  
844 `\@acmownedtrue`

Keys:

```
845 \define@choicekey*{ACM@}{acmcopyrightmode}[%  
846   \acm@copyrightinput\acm@copyrightmode]{none,acmcopyright,acmlicensed,%  
847   rightsretained,usgov,usgovmixed,cagov,cagovmixed,%  
848   licensedusgovmixed,licensedcagovmixed,othergov,licensedothergov}{%  
849   \@printpermissiontrue  
850   \@printcopyrighttrue  
851   \@acmownedtrue  
852   \ifnum\acm@copyrightmode=0\relax % none  
853     \@printpermissionfalse  
854     \@printcopyrightfalse  
855     \@acmownedfalse  
856   \fi  
857   \ifnum\acm@copyrightmode=2\relax % acmlicensed  
858     \@acmownedfalse  
859   \fi  
860   \ifnum\acm@copyrightmode=3\relax % rightsretained  
861     \@acmownedfalse  
862   \fi  
863   \ifnum\acm@copyrightmode=4\relax % usgov  
864     \@printpermissiontrue  
865     \@printcopyrightfalse  
866     \@acmownedfalse  
867   \fi  
868   \ifnum\acm@copyrightmode=6\relax % cagov  
869     \@acmownedfalse  
870   \fi  
871   \ifnum\acm@copyrightmode=8\relax % licensedusgovmixed  
872     \@acmownedfalse  
873   \fi  
874   \ifnum\acm@copyrightmode=9\relax % licensedcagovmixed  
875     \@acmownedfalse  
876   \fi  
877   \ifnum\acm@copyrightmode=10\relax % othergov
```

```

878 \acmownedtrue
879 \fi
880 \ifnum\acm@copyrightmode=11\relax % licensedothergov
881 \acmownedfalse
882 \@printcopyrightfalse
883 \fi}

```

\setcopyright This is the syntactic sugar around setting keys.

```

884 \def\setcopyright#1{\setkeys{ACM@}{acmcopyrightmode=#1}}
885 \setcopyright{acmcopyright}

```

\@copyrightowner Here is the owner of the copyright

```

886 \def\@copyrightowner{%
887 \ifcase\acm@copyrightmode\relax % none
888 \or % acmcopyright
889 ACM.
890 \or % acmlicensed
891 Copyright held by the owner/author(s). Publication rights licensed to
892 ACM.
893 \or % rightsretained
894 Copyright held by the owner/author(s).
895 \or % usgov
896 \or % usgovmixed
897 ACM.
898 \or % cagov
899 Crown in Right of Canada.
900 \or %cagovmixed
901 ACM.
902 \or %licensedusgovmixed
903 Copyright held by the owner/author(s). Publication rights licensed to
904 ACM.
905 \or %licensedcagovmixed
906 Copyright held by the owner/author(s). Publication rights licensed to
907 ACM.
908 \or % othergov
909 ACM.
910 \or % licensedothergov
911 \fi}

```

\@copyrightpermission The canned permission block.

```

912 \def\@copyrightpermission{%
913 \ifcase\acm@copyrightmode\relax % none
914 \or % acmcopyright
915 Permission to make digital or hard copies of all or part of this
916 work for personal or classroom use is granted without fee provided
917 that copies are not made or distributed for profit or commercial
918 advantage and that copies bear this notice and the full citation on
919 the first page. Copyrights for components of this work owned by
920 others than ACM must be honored. Abstracting with credit is

```

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 950 \or % usgovmixed  
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 962 \or % cagov  
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 964 As such, the Canadian government retains all interest in the  
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 975 permissions@acm.org.  
 976 \or % cagovmixed  
 977 ACM acknowledges that this contribution was co-authored by an  
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 1013 this article, or to allow others to do so, for Government purposes  
 1014 only.  
 1015 \fi}

\copyrightyear By default, the copyright year is the same as \acmYear, but one can override this:

1016 \def\copyrightyear#1{\def\@copyrightyear{#1}}  
 1017 \copyrightyear{\@acmYear}

`\@teaserfigures` The teaser figures container  
1018 `\def\@teaserfigures{}`

`teaserfigure` The teaser figure  
1019 `\newenvironment{teaserfigure}{\Collect@Body\@saveteaser}{}`

`\@saveteaser` Saving the teaser  
1020 `\long\def\@saveteaser#1{\g@addto@macro\@teaserfigures{\@teaser{#1}}}`

`\thanks` We redefine amsart `\thanks`, so the anonymous key works  
1021 `\renewcommand{\thanks}[1]{%`  
1022 `\ifnotempty{#1}{%`  
1023 `\if@ACM@anonymous`  
1024 `\g@addto@macro\thankses{\thanks{A note}}%`  
1025 `\else`  
1026 `\g@addto@macro\thankses{\thanks{#1}}%`  
1027 `\fi}}`

### 3.11 Typesetting top matter

`\mktitle@bx` Some of our formats use two column design, some use one column one. In all cases we use wide title. Thus we typeset the top matter in a special box to be use in the construction `\@twocolumn[<box>]`.  
1028 `\newbox\mktitle@bx`

`\maketitle` The (in)famous `\maketitle`. Note that in sigchi-a mode authors are *not* in the title box.  
1029 `\def\maketitle{\begingroup`  
1030 `\let\@footnotemark\@footnotemark@nolink`  
1031 `\let\@footnotetext\@footnotetext@nolink`  
1032 `\renewcommand\thefootnote{\@fnsymbol\c@footnote}%`  
1033 `\@topnum\z@ % this prevents figures from falling at the top of page`  
1034 `% 1`  
1035 `\hsize=\textwidth`  
1036 `\def\@makefnmark{\hbox{\@textsuperscript{\@thefnmark}}}`  
1037 `\@mktitle\if@ACM@sigchiamode\else\@mkauthors\fi\@mkteasers`  
1038 `\@printtopmatter`  
1039 `\if@ACM@sigchiamode\@mkauthors\fi`  
1040 `\setcounter{footnote}{0}%`  
1041 `\def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}`  
1042 `\@titlenotes`  
1043 `\@subtitlenotes`  
1044 `\@authornotes`  
1045 `\let\@makefnmark\relax \let\@thefnmark\relax`  
1046 `\let\@makefntext\noindent`  
1047 `\ifx\@empty\thankses\else`  
1048 `\@footnotetext{\def\par{\let\par\@par}\parindent\z@\@setthanks}%`  
1049 `\fi`  
1050 `\if@printpermission\@footnotetext{\parindent\z@\@copyrightpermission}\fi`



```

1051 \@footnotetext{\parindent\z@
1052   \if@ACM@manuscript\else
1053     \if@ACM@journal\else % Print the conference short name
1054       {\itshape \acmConference@shortname, \acmConference@venue}\par
1055     \fi
1056   \fi
1057   \if@printcopyright
1058     \copyright\ \@copyrightyear\ \@copyrightowner\
1059   \else
1060     \@copyrightyear\
1061   \fi
1062   \if@ACM@manuscript
1063     Manuscript submitted to ACM\\
1064   \else
1065     \if@ACM@journal
1066       \@permissionCodeOne/\@acmYear/\@acmMonth-ART\@acmArticle\
1067       \$\@acmPrice\\
1068     \else % Conference
1069       \@isbn
1070       \ifx\@acmPrice\@empty.\else\dots\$\@acmPrice\fi\\
1071     \fi
1072   \fi
1073   DOI: \@doi}%
1074 \mkabstract
1075 \if@ACM@printcss
1076   \ifx\@concepts\@empty\else\bgroup
1077     {\@specialsection{CCS Concepts}%
1078     \@concepts\par}\egroup
1079   \fi
1080 \fi
1081 \if\@terms\@empty\else\bgroup
1082   {\@specialsection{General Terms}%
1083   \@terms\par}\egroup
1084 \fi
1085 \ifx\@keywords\@empty\else\bgroup
1086   {\@specialsection{Additional Key
1087     Words and Phrases}\@keywords}\par\egroup
1088 \fi
1089 \andify\authors
1090 \andify\shortauthors
1091 \global\let\authors=\authors
1092 \global\let\shortauthors=\shortauthors
1093 \if@ACM@printbib
1094   \mkbibcitation
1095 \fi
1096 \hypersetup{pdfauthor={\authors},
1097   pdftitle={\@title}, pdfkeywords={\@concepts}}%
1098 \printendtopmatter
1099 \endgroup
1100 \setcounter{footnote}{0}%

```

```

1101 \@afterindentfalse
1102 \@afterheading
1103 }

\@specialsection This macro starts section for proceedings and uses small for journals
1104 \def\@specialsection#1{%
1105   \if@ACM@journal
1106     \par\medskip\small\noindent#1: %
1107   \else
1108     \section*{#1}%
1109   \fi}

\@printtopmatter The printing of top matter starts the new page, and uses the given title box.
1110 \def\@printtopmatter{%
1111   \ifx\@startPage\@empty
1112     \gdef\@startPage{1}%
1113   \else
1114     \setcounter{page}{\@startPage}%
1115   \fi
1116   \thispagestyle{firstpagestyle}%
1117   \noindent
1118   \ifcase\ACM@format@nr
1119     \relax % manuscript
1120     \box\mktitle@bx\par
1121     \noindent\hrulefill\par
1122   \or% acmsmall
1123     \box\mktitle@bx\par
1124     \noindent\hrulefill\par
1125   \or % acmlarge
1126     \box\mktitle@bx\par
1127     \noindent\hrulefill\par
1128   \or % acmtog
1129     \twocolumn[\box\mktitle@bx]%
1130   \or % sigconf
1131     \twocolumn[\box\mktitle@bx]%
1132   \or % siggraph
1133     \twocolumn[\box\mktitle@bx]%
1134   \or % sigplan
1135     \twocolumn[\box\mktitle@bx]%
1136   \or % sigchi
1137     \twocolumn[\box\mktitle@bx]%
1138   \or % sigchi-a
1139     \par\box\mktitle@bx\par\bigskip
1140   \fi
1141 }

\@mktitle The title of the article
1142 \def\@mktitle{%
1143   \ifcase\ACM@format@nr

```

```

1144 \relax % manuscript
1145 \mktitle@i
1146 \or% acmsmall
1147 \mktitle@i
1148 \or % acmlarge
1149 \mktitle@i
1150 \or % acmtog
1151 \mktitle@ii
1152 \or % sigconf
1153 \mktitle@iii
1154 \or % siggraph
1155 \mktitle@iii
1156 \or % sigplan
1157 \mktitle@iii
1158 \or % sigchi
1159 \mktitle@iii
1160 \or % sigchi-a
1161 \mktitle@iv
1162 \fi
1163 }

\mktitle@i The version of \mktitle for most journals
1164 \def\mktitle@i{\hsize=\textwidth
1165 \setbox\mktitle@bx=\vbox{\raggedright\LARGE\bfseries\sffamily\noindent
1166 \title\par
1167 \ifx\@subtitle\@empty\else
1168 \noindent\mdseries\@subtitle\par
1169 \fi}}%

\mktitle@ii The version of \mktitle for TOG
1170 \def\mktitle@ii{\hsize=\textwidth
1171 \setbox\mktitle@bx=\vbox{\raggedright\Huge\sffamily\noindent
1172 \def\@currentfmarkstyle{\Huge\sffamily}}%
1173 \title
1174 \ifx\@subtitle\@empty\else
1175 \par\noindent{\LARGE\@subtitle}
1176 \fi
1177 \par\bigskip}}%

\mktitle@iii The version of \mktitle for sigproc
1178 \def\mktitle@iii{\hsize=\textwidth
1179 \setbox\mktitle@bx=\vbox{\centering\Huge\sffamily\bfseries\noindent
1180 \title
1181 \ifx\@subtitle\@empty\else
1182 \par\noindent{\LARGE\mdseries\@subtitle}
1183 \fi
1184 \par\bigskip}}%

\mktitle@iv The version of \mktitle for sigchi-a

```

```

1185 \def\@mktitle@iv{\hsize=\textwidth
1186     \setbox\mktitle@bx=\vbox{\raggedright\leftskip5pc\bfseries\Huge
1187         \noindent\leavevmode\leaders\hrule height 2pt\hfill\kern0pt\par
1188         \noindent\@title
1189         \ifx\@subtitle\@empty\else
1190             \par\noindent\mdseries\@subtitle
1191         \fi
1192     \par\bigskip}}%

\@mkauthors Typesetting authors
1193 \def\@mkauthors{\begin{group}
1194     \hsize=\textwidth
1195     \ifcase\ACM@format@nr
1196     \relax % manuscript
1197         \@mkauthors@i
1198     \or % acmsmall
1199         \@mkauthors@i
1200     \or % acmlarge
1201         \@mkauthors@i
1202     \or % acmtog
1203         \@mkauthors@ii
1204     \or % sigconf
1205         \@mkauthors@iii
1206     \or % siggraph
1207         \@mkauthors@iii
1208     \or % sigplan
1209         \@mkauthors@iii
1210     \or % sigchi
1211         \@mkauthors@iii
1212     \or % sigchi-a
1213         \@mkauthors@iv
1214     \fi
1215 \end{group}
1216 }

\@authorfont Somehow different conferences use different fonts for author names. Why?
1217 \def\@authorfont{\LARGE\sffamily}

\@affiliationfont Font for affiliations
1218 \def\@affiliationfont{\normalsize\normalfont}

Adjusting fonts for different formats
1219 \ifcase\ACM@format@nr
1220 \relax % manuscript
1221 \or % acmsmall
1222 \or % acmlarge
1223 \or % acmtog
1224 \def\@authorfont{\LARGE\sffamily}
1225 \def\@affiliationfont{\large}

```

```

1226 \or % sigconf
1227   \def\@authorfont{\LARGE}
1228   \def\@affiliationfont{\large}
1229 \or % siggraph
1230   \def\@authorfont{\normalsize\normalfont}
1231   \def\@affiliationfont{\normalsize\normalfont}
1232 \or % sigplan
1233 \or % sigchi
1234   \def\@authorfont{\bfseries}
1235   \def\@affiliationfont{\mdseries}
1236 \or % sigchi-a
1237   \def\@authorfont{\bfseries}
1238   \def\@affiliationfont{\mdseries}
1239 \fi

```

\@mkauthors@i This is version used in most formats. Note that \and between authors with the same affiliation becomes \_and\_:

```

1240 \def\@mkauthors@i{%
1241   \def\@currentauthors{%
1242     \def\and{%
1243       \andify\@currentauthors\par\noindent
1244       \@currentauthors\def\@currentauthors{}}%
1245   \def\@author##1{%
1246     \ifx\@currentauthors\@empty
1247       \gdef\@currentauthors{\@authorfont\MakeUppercase{##1}}%
1248     \else
1249       \g@addto@macro{\@currentauthors}{\and\MakeUppercase{##1}}%
1250     \fi
1251     \def\and{}}%
1252   \def\email##1##2{%
1253   \def\affiliation##1##2{%
1254     \ifx\@currentauthors\@empty\else
1255       \andify\@currentauthors\par\noindent\@currentauthors
1256     \fi
1257     \def\@currentauthors{\def\@tempa{##2}\ifx\@tempa\@empty\else
1258       \unskip, {\@affiliationfont##2}\fi\def\and{\par\noindent}}%
1259   \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1260     \noindent\addresses\andify\@currentauthors\par\noindent\@currentauthors\par\medskip}%
1261 }

```

\@mkauthors@ii This is version used in acmtog. A more vertical design

```

1262 \def\@mkauthors@ii{\par\medskip
1263   \def\@currentauthors{%
1264     \def\and{%
1265       \def\@author##1{%
1266         \ifx\@currentauthors\@empty
1267           \gdef\@currentauthors{\@authorfont
1268             \MakeUppercase{##1}}%
1269         \else
1270           \g@addto@macro{\@currentauthors}{\and\MakeUppercase{##1}}%

```

```

1271 \fi\def\and{}}%
1272 \def\email##1##2{%
1273 \def\affiliation##1##2{%
1274 \ifx\@currentauthors\empty\else
1275 \andify\@currentauthors\par\noindent\@currentauthors
1276 \fi
1277 \def\@currentauthors{\def\@tempa{##2}\ifx\@tempa\empty\else
1278 \par\noindent{\@affiliationfont##2}\fi
1279 \def\and{\par\noindent{\@affiliationfont and}\par
1280 \noindent\def\and{}}}%
1281 \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1282 \noindent\addresses\andify\@currentauthors\par\noindent\@currentauthors\par\medskip}%
1283 }

\author@bx The box to put individual author to
1284 \newbox\author@bx

\author@bx@wd The width of the author box
1285 \newdimen\author@bx@wd

\author@bx@sep The separation between the author boxes
1286 \newskip\author@bx@sep
1287 \author@bx@sep=1pc\relax

\@mkauthors@iii The sigconf version. Here we use centered design with each author in a separate box.
1288 \def\@mkauthors@iii{%
First, we need to determine the design of the author strip. The boxes are separated by
\author@bx@sep plus two \author@bx@sep margins. This means that each box must
be of width  $(\text{\textwidth} - \text{\author@bx@sep})/N - \text{\author@bx@sep}$ , where  $N$  is the
number of boxes per row.
1289 \author@bx@wd=\textwidth\relax
1290 \advance\author@bx@wd by -\author@bx@sep\relax
1291 \ifcase\num@authors
1292 \relax % 0?
1293 \or % 1=one author per row
1294 \or % 2=two authors per row
1295 \divide\author@bx@wd by \num@authors\relax
1296 \or % 3=three authors per row
1297 \divide\author@bx@wd by \num@authors\relax
1298 \or % 4=two authors per row (!)
1299 \divide\author@bx@wd by 2\relax
1300 \else % three authors per row
1301 \divide\author@bx@wd by 3\relax
1302 \fi
1303 \advance\author@bx@wd by -\author@bx@sep\relax
Now, parsing of \addresses:
1304 \gdef\@currentauthors{}%
1305 \gdef\@currentaffiliation{}%

```

```

1306 \def\@author##1{\ifx\@currentauthors\@empty
1307 \gdef\@currentauthors{\par##1}%
1308 \else
1309 \g@addto@macro\@currentauthors{\quad##1}%
1310 \fi}%
1311 \def\email##1##2{\ifx\@currentaffiliation\@empty
1312 \gdef\@currentaffiliation{\nolinkurl{##2}}%
1313 \else
1314 \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1315 \fi}%
1316 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1317 \gdef\@currentaffiliation{##2}%
1318 \else
1319 \g@addto@macro\@currentaffiliation{\par##2}%
1320 \fi}%

```

Actual typesetting is done by \and macro

```

1321 \def\and{\bgroup\hsize=\author@bx@wd\def\and{\quad}%
1322 \global\setbox\author@bx=\vtop{\centering
1323 \authorfont\@currentauthors\par\@affiliationfont
1324 \@currentaffiliation}\egroup
1325 \box\author@bx\hspace{\author@bx@sep}%
1326 \gdef\@currentauthors{}%
1327 \gdef\@currentaffiliation{}}%

```

And here we use it:

```

1328 \hsize=\textwidth
1329 \global\setbox\mktitle@bx=\vbox{\noindent
1330 \box\mktitle@bx\par\medskip\leavevmode
1331 \lineskip=1pc\relax\centering\hspace*{-1em}%
1332 \addresses\and\par\bigskip}}

```

\@mkauthors@iv The sigchia version. Now we put authors in the main text, and no more than 2 authors per line.

```

1333 \def\@mkauthors@iv{%

```

First, we need to determine the design of the author strip. The boxes are separated by \author@bx@sep plus two \author@bx@sep margins. This means that each box must be of width  $(\text{\textwidth} - \text{\author@bx@sep})/N - \text{\author@bx@sep}$ , where  $N$  is the number of boxes per row.

```

1334 \author@bx@wd=\columnwidth\relax
1335 \advance\author@bx@wd by -\author@bx@sep\relax
1336 \ifcase\num@authors
1337 \relax % 0?
1338 \or % 1=one author per row
1339 \else % 2=two authors per row
1340 \divide\author@bx@wd by 2\relax
1341 \fi
1342 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of \addresses:

```

1343 \gdef\@currentauthors{}%
1344 \gdef\@currentaffiliation{}%
1345 \def\@author##1{\ifx\@currentauthors\@empty
1346   \gdef\@currentauthors{\par##1}%
1347 \else
1348   \g@addto@macro\@currentauthors{\quad##1}%
1349 \fi}%
1350 \def\email##1##2{\ifx\@currentaffiliation\@empty
1351   \gdef\@currentaffiliation{\nolinkurl{##2}}%
1352 \else
1353   \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1354 \fi}%
1355 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1356   \gdef\@currentaffiliation{##2}%
1357 \else
1358   \g@addto@macro\@currentaffiliation{\par##2}%
1359 \fi}%

```

Actual typesetting is done by \and macro

```

1360 \def\and{\bgroup\hsize=\author@bx\wd\def\and{\quad}%
1361   \global\setbox\author@bx=\vtop{\raggedright
1362     \@authorfont\@currentauthors\par\@affiliationfont
1363     \@currentaffiliation}\egroup
1364   \box\author@bx\hskip\author@bx@sep
1365   \gdef\@currentauthors{}%
1366   \gdef\@currentaffiliation{}}%

```

And here we use it:

```

1367   \bgroup\hsize=\columnwidth
1368   \par\raggedright\leftskip=\z@
1369   \lineskip=1pc\noindent\addresses\and\par\bigskip\egroup}

```

\@authornotemark Adding footnotemark to authors

```

1370 \def\@authornotemark{\g@addto@macro\@currentauthors{\footnotemark}}

```

\@mkteasers Typesetting teasers

```

1371 \def\@mkteasers{%
1372   \ifx\@teaserfigures\@empty\else
1373     \def\@teaser##1{\par\bigskip\bgroup
1374       \captionsetup{type=figure}##1\egroup\par}
1375     \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par
1376       \noindent\@teaserfigures\par\medskip}%
1377     \fi}

```

\@setaddresses This is an amsart macro, which we do not need.

```

1378 \def\@setaddresses{}

```

\@mkabstract Typesetting abstract

```

1379 \def\@mkabstract{\bgroup
1380   \ifx\@abstract\@empty\else

```



```

1381 {\if@ACM@journal
1382     \small\noindent
1383     \else
1384     \section*{ABSTRACT}%
1385     \fi
1386     \@abstract\par}%
1387 \fi\egroup}

```

`\@mkbibcitation` Print bibcitation format

```

1388 \def\@mkbibcitation{\bgroup
1389     \par\medskip\small\noindent{\bfseries ACM Reference format:}\par
1390     \noindent\authors. \@acmYear. \@title. \textit{\@journalNameShort}
1391     \@acmVolume, \@acmNumber, Article~\@acmArticle\
1392     (\@acmPubDate), \ref{TotPages}~pages.\par
1393     \noindent DOI: \@doi
1394 \par\egroup}

```

`\@printendtopmatter` End the top matter

```

1395 \def\@printendtopmatter{\par\medskip
1396     \ifcase\ACM@format@nr
1397     \relax % manuscript
1398     \noindent\hrulefill\par\medskip
1399     \or% acmsmall
1400     \noindent\hrulefill\par\medskip
1401     \or % acmlarge
1402     \noindent\hrulefill\par\medskip
1403     \or % acmtog
1404     \par\bigskip
1405     \or % sigconf
1406     \par\bigskip
1407     \or % siggraph
1408     \par\bigskip
1409     \or % sigplan
1410     \par\bigskip
1411     \or % sigchi
1412     \par\bigskip
1413     \or % sigchi-a
1414     \fi
1415 }

```

`\@setthanks` We redefine `\setthanks` using `\long`

```

1416 \def\@setthanks{\long\def\thanks##1{\par##1\@addpunct.}\thankses}

```

### 3.12 Headers and Footers

We use `fancyhdr` for our headers and footers:

```

1417 \RequirePackage{fancyhdr}

```

`\ACM@linenum` The number of lines (plus one) on the page

```

1418 \def\ACM@linenum{42}
1419 \ifcase\ACM@format@nr
1420 \relax % manuscript
1421 \def\ACM@linenum{43}
1422 \or% acmsmall
1423 \def\ACM@linenum{51}
1424 \or % acmlarge
1425 \def\ACM@linenum{54}
1426 \or % acmtog
1427 \def\ACM@linenum{61}
1428 \or % sigconf
1429 \def\ACM@linenum{60}
1430 \or % siggraph
1431 \def\ACM@linenum{60}
1432 \or % sigplan
1433 \def\ACM@linenum{60}
1434 \or % sigchi
1435 \def\ACM@linenum{53}
1436 \or % sigchi-a
1437 \def\ACM@linenum{40}
1438 \fi

```

\ACM@linecount@bx This is the box displayed in the review mode

```

1439 \if@ACM@review
1440 \newsavebox{\ACM@linecount@bx}
1441 \savebox{\ACM@linecount@bx}[4em][t]{\parbox[t]{4em}{%
1442 \@tempcnta\@ne\relax
1443 \loop{\color{red}\scriptsize\the\@tempcnta}\@
1444 \advance\@tempcnta by \@ne\ifnum\@tempcnta<\ACM@linenum\repeat}}
1445 \fi

```

\ACM@linecount How to display the box

```

1446 \def\ACM@linecount{%
1447 \if@ACM@review
1448 \begin{picture}(0,0)%
1449 \put(-26,-22){\usebox{\ACM@linecount@bx}}%
1450 \end{picture}%
1451 \fi}

```

standardpagestyle The pagestyle for all pages but the first one

```

1452 \fancypagestyle{standardpagestyle}{%
1453 \fancyhf{}%
1454 \renewcommand{\headrulewidth}{\z@}%
1455 \renewcommand{\footrulewidth}{\z@}%
1456 \ifcase\ACM@format@nr
1457 \relax % manuscript
1458 \fancyhead[RE]{\thepage}%
1459 \fancyhead[LO]{\ACM@linecount\thepage}%
1460 \fancyhead[LE]{\ACM@linecount\shortauthors}%

```

```

1461 \fancyhead[R0]{\shorttitle}%
1462 \fancyfoot[R0,LE]{\footnotesize Manuscript submitted to ACM}%
1463 \or% acmsmall
1464 \fancyhead[RE]{\sffamily\@acmArticle:\thepage}%
1465 \fancyhead[LO]{\ACM@linecount\sffamily\@acmArticle:\thepage}%
1466 \fancyhead[LE]{\ACM@linecount\sffamily\shortauthors}%
1467 \fancyhead[R0]{\sffamily\shorttitle}%
1468 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1469 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1470 \or % acmlarge
1471 \fancyhead[LE]{\ACM@linecount\sffamily
1472 \@acmArticle:\thepage\quad\textbullet\quad\shortauthors}%
1473 \fancyhead[LO]{\ACM@linecount}%
1474 \fancyhead[R0]{\sffamily
1475 \shorttitle\quad\textbullet\quad\@acmArticle:\thepage}%
1476 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1477 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1478 \or % acmtog
1479 \fancyhead[LE]{\ACM@linecount\sffamily
1480 \@acmArticle:\thepage\quad\textbullet\quad\shortauthors}%
1481 \fancyhead[LO]{\ACM@linecount}%
1482 \fancyhead[R0]{\sffamily
1483 \shorttitle\quad\textbullet\quad\@acmArticle:\thepage}%
1484 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1485 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1486 \else % Proceedings
1487 \fancyfoot[R]{\footnotesize\thepage}%
1488 \fancyhead[L]{\ACM@linecount}%
1489 \fi
1490 }
1491 \pagestyle{standardpagestyle}

\@folio@wd Folio blob width, height, offsets and max number
\@folio@ht
\@folio@voffset
\@folio@max
1492 \newdimen\@folio@wd
1493 \@folio@wd=\z@
1494 \newdimen\@folio@ht
1495 \@folio@ht=\z@
1496 \newdimen\@folio@voffset
1497 \@folio@voffset=\z@
1498 \def\@folio@max{1}
1499 \ifcase\ACM@format@nr
1500 \relax % manuscript
1501 \or% acmsmall
1502 \@folio@wd=45.75pt\relax
1503 \@folio@ht=1.25in\relax
1504 \@folio@voffset=.2in\relax
1505 \def\@folio@max{8}
1506 \or % acmlarge
1507 \@folio@wd=43.25pt\relax
1508 \@folio@ht=79pt\relax

```

```

1509 \@folio@voffset=.55in\relax
1510 \def\@folio@max{10}
1511 \fi

```

\@folioblob The macro to typeset the folio blob.

```

1512 \def\@folioblob{\@tempcnta=\@articleSeq\relax
First, we calculate \@articleSeq modulo \@folio@max
1513 \loop
1514   \ifnum\@tempcnta>\@folio@max\relax
1515   \advance\@tempcnta by - \@folio@max
1516 \repeat
1517 \advance\@tempcnta by -1\relax
1518 \@tempdima=\@folio@ht\relax
1519 \multiply\@tempdima by \the\@tempcnta\relax
1520 \advance\@tempdima by -\@folio@voffset\relax
1521 \begin{picture}(0,0)
1522 \makebox[\z@]{\raisebox{-\@tempdima}{%
1523   \rlap{%
1524     \raisebox{-0.45\@folio@ht}{\z@}{\z@}{%
1525       \rule{\@folio@wd}{\@folio@ht}}}%
1526   \parbox{\@folio@wd}{%
1527     \centering
1528     \textcolor{white}{\LARGE\bfseries\sffamily\@acmArticle}}}%
1529 \end{picture}}
1530

```

firstpagestyle The pagestyle for all pages but the first one

```

1531 \fancypagestyle{firstpagestyle}{%
1532 \fancyhf{}%
1533 \renewcommand{\headrulewidth}{\z@}%
1534 \renewcommand{\footrulewidth}{\z@}%
1535 \ifcase\ACM@format@nr
1536 \relax % manuscript
1537 \fancyhead[L]{\ACM@linecount}%
1538 \fancyfoot[RO,LE]{\small\thepage}%
1539 \fancyfoot[RE,LO]{\footnotesize Manuscript submitted to ACM}%
1540 \or% acmsmall
1541 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1542 \@acmNumber, Article \@acmArticle. Publication date:
1543 \@acmPubDate.}%
1544 \fancyhead[LE]{\ACM@linecount\@folioblob}%
1545 \fancyhead[LO]{\ACM@linecount}%
1546 \fancyhead[RO]{\@folioblob}%
1547 \fancyheadoffset[RO,LE]{0.6\@folio@wd}%
1548 \or% acmlarge
1549 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1550 \@acmNumber, Article \@acmArticle. Publication date:
1551 \@acmPubDate.}%
1552 \fancyhead[RO]{\@folioblob}%

```

```

1553 \fancyhead[LE]{\ACM@linecount\@folioblob}%
1554 \fancyhead[LO]{\ACM@linecount}%
1555 \fancyheadoffset[RO,LE]{1.4\@folio@wd}%
1556 \or % acmtog
1557 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1558 \@acmNumber, Article \@acmArticle. Publication date:
1559 \@acmPubDate.}%
1560 \fancyhead[L]{\ACM@linecount}%
1561 \else % Conference proceedings
1562 \fancyhead[L]{\ACM@linecount}%
1563 \fancyfoot[R]{\footnotesize\thepage}%
1564 \fi
1565 }

```

### 3.13 Sectioning

Fonts for sections etc. are different for different formats. Also, some formats use the ugly period after section number (sigh):

```

1566 \def\@secfont{\sffamily\bfseries\raggedright\MakeUppercase}
1567 \def\@subsecfont{\sffamily\bfseries\raggedright}
1568 \def\@subsubsecfont{\sffamily\itshape}
1569 \def\@parfont{\itshape}
1570 \setcounter{secnumdepth}{3}
1571 \ifcase\ACM@format@nr
1572 \relax % manuscript
1573 \or% acmsmall
1574 \or % acmlarge
1575 \def\@secfont{\sffamily\large\raggedright\MakeUppercase}
1576 \def\@subsecfont{\sffamily\large\raggedright}
1577 \or % acmtog
1578 \def\@secfont{\sffamily\large\raggedright\MakeUppercase}
1579 \def\@subsecfont{\sffamily\large\raggedright}
1580 \or % sigconf
1581 \def\@secfont{\bfseries\Large\raggedright\MakeUppercase}
1582 \def\@subsecfont{\bfseries\Large\raggedright}
1583 \or % siggraph
1584 \def\@secfont{\bfseries\sffamily\Large\raggedright\MakeUppercase}
1585 \def\@subsecfont{\bfseries\sffamily\Large\raggedright}
1586 \or % sigplan
1587 \def\@secfont{\bfseries\Large\raggedright\MakeUppercase}
1588 \def\@subsecfont{\bfseries\Large\raggedright}
1589 \or % sigchi
1590 \setcounter{secnumdepth}{1}
1591 \def\@secfont{\bfseries\sffamily\raggedright\MakeUppercase}
1592 \def\@subsecfont{\bfseries\sffamily\raggedright}
1593 \or % sigchi-a
1594 \setcounter{secnumdepth}{0}
1595 \def\@secfont{\bfseries\sffamily\raggedright\MakeUppercase}
1596 \def\@subsecfont{\bfseries\sffamily\raggedright}

```

1597 \fi

\@adddotafter Add punctuation after the command

1598 \def\@adddotafter#1{#1\@addpunct{.}}

Sectioning is different for different levels

```
1599 \renewcommand\section{\@startsection{section}{1}{\z@}%
1600 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1601 {.25\baselineskip}%
1602 {\@secfont}}
1603 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
1604 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1605 {.25\baselineskip}%
1606 {\@subsecfont}}
1607 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{10pt}%
1608 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1609 {-3.5\p@}%
1610 {\@subsubsecfont\@adddotafter}}
1611 \renewcommand\paragraph{\@startsection{paragraph}{4}{\parindent}%
1612 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1613 {-3.5\p@}%
1614 {\@parfont\@adddotafter}}
1615 \renewcommand\part{\@startsection{part}{9}{\z@}%
1616 {-10\p@ \@plus -4\p@ \@minus -2\p@}%
1617 {4\p@}%
1618 {\@parfont}}
```

### 3.14 Theorems

acmplain The acmplain theorem style

```
1619 \newtheoremstyle{acmplain}%
1620 {.5\baselineskip\@plus.2\baselineskip
1621 \@minus.2\baselineskip}% space above
1622 {.5\baselineskip\@plus.2\baselineskip
1623 \@minus.2\baselineskip}% Space below
1624 {\itshape}% body font
1625 {\parindent}% indent amount
1626 {\scshape}% head font
1627 {.}% punctuation after head
1628 {.5em}% spacing after head
1629 {\thmname{#1}\thmnumber{ #2}\thmnote{ (#3)}}% head spec
```

acmdefinition The acmdefinition theorem style

```
1630 \newtheoremstyle{acmdefinition}%
1631 {.5\baselineskip\@plus.2\baselineskip
1632 \@minus.2\baselineskip}% space above
1633 {.5\baselineskip\@plus.2\baselineskip
1634 \@minus.2\baselineskip}% Space below
1635 {\normalfont}% body font
```

```

1636 {\parindent}% indent amount
1637 {\itshape}% head font
1638 {.}% punctuation after head
1639 {.5em}% spacing after head
1640 {\thmname{#1}\thmnumber{ #2}\thmnote{ \itshape(#3)}}% head spec

```

The definitions for theorems:

```

1641 \theoremstyle{acmplain}
1642 \newtheorem{theorem}{Theorem}[section]
1643 \newtheorem{conjecture}[theorem]{Conjecture}
1644 \newtheorem{proposition}[theorem]{Proposition}
1645 \newtheorem{lemma}[theorem]{Lemma}
1646 \newtheorem{corollary}[theorem]{Corollary}
1647 \theoremstyle{acmdefinition}
1648 \newtheorem{example}[theorem]{Example}
1649 \newtheorem{definition}[theorem]{Definition}

```

proof We want small caps proof name

```

1650 \renewenvironment{proof}[1][\proofname]{\par
1651   \pushQED{\qed}%
1652   \normalfont \topsep6\p@\@plus6\p@\relax
1653   \trivlist
1654     \item[\indent\hskip\labelsep
1655       \scshape
1656       #1\@addpunct{.}]\ignorespaces
1657 }{%
1658   \popQED\endtrivlist\@endpfalse
1659 }

```

### 3.15 Conditional typesetting

We use the comment package for conditional typesetting:

```

1660 \if@ACM@screen
1661   \includecomment{screenonly}
1662   \excludecomment{printonly}
1663 \else
1664   \excludecomment{screenonly}
1665   \includecomment{printonly}
1666 \fi

```

### 3.16 End of Class

```

1667 \normalsize\normalfont
1668 \end{class}

```

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