2018
MCM/ICM
Summary Sheet

Summary

The summary is an essential part of your MCM/ICM paper. The judges place considerable weight on the summary, and winning papers are often distinguished from other papers based on the quality of the summary.

To write a good summary, imagine that a reader will choose whether to read the body of the paper based on your summary: Your concise presentation in the summary should inspire a reader to learn about the details of your work. Thus, a summary should clearly describe your approach to the problem and, most prominently, your most important conclusions. Summaries that are mere restatements of the contest problem, or are a cut-and-paste boilerplate from the Introduction are generally considered to be weak.

Besides the summary sheet as described each paper should contain the following sections:

- **Restatement and clarification of the problem**: State in your own words what you are going to do.

- **Explain assumptions and rationale/justification**: Emphasize the assumptions that bear on the problem. Clearly list all variables used in your model.

- **Include your model design and justification** for type model used or developed.

- **Describe model testing and sensitivity analysis**, including error analysis, etc.

- **Discuss the strengths and weaknesses** of your model or approach.

Your MCM/ICM paper Title

Team # 0000

February 11, 2018

Contents

1   Introduction

The Mathematical Contest in Modeling (MCM) & The Interdisciplinary Contest in Modeling (ICM). Contest Rules, Registration and Instructions: `http://www.comap.com/undergraduate/contests/mcm/instructions.php`

2   Section example

Documents usually have some levels of sections to keep its contents organized. LATEX supports this type of organization and also customization of the sectioning and numbering. Section numbering is automatic and can be disabled.

2.1   subection example

2.2   subsubection example

3   Citation examples

Citation examples: article [1], book [2], webpage [3, 4].

4   Equation example

A inline equation is shown as $E = m \cdot c^2$, a display equation with number is shown as equation (1)

$$E = m \cdot c^2 \qquad (1)$$

and a display equation without number is shown as follow

$$E = m \cdot c^2$$

5   Items example

-
-
-

1.

2.

3.

6 Table example

A table example is shown as table 1.

Table 1: Table example

	AAAAAA	BBBBBB	CCCCCC	DDDDDD
XXX	1	2	3	4
YYY	5	6	7	8

Table 2: Table example

	AAAAAA	BBBBBB	CCCCCC	DDDDDD
XXX	1	2	3	4
YYY	5	6	7	8

7 Figure example

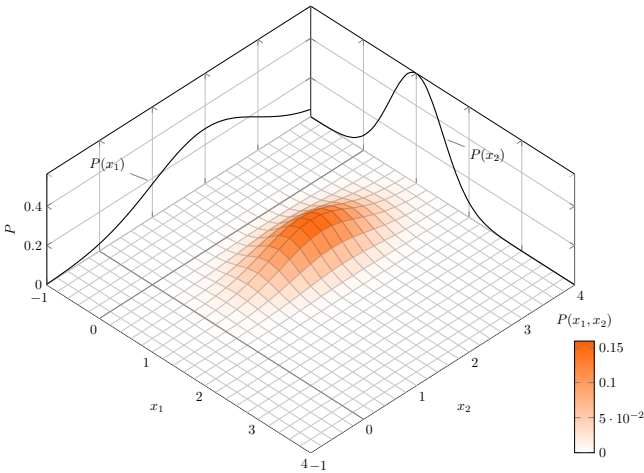A simple figure example is shown as figure 1.

Figure 1: Figure example

For two independent side-by-side figures, you can use two minipages inside a figure enviroment. Here's an example, shown as figure 2 and 3.
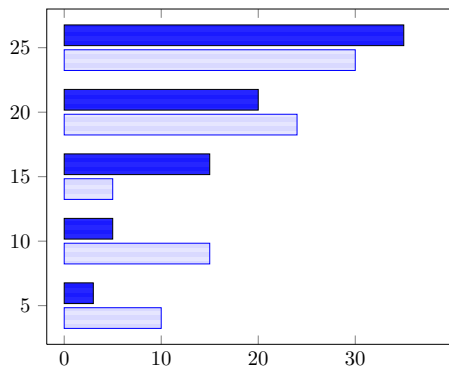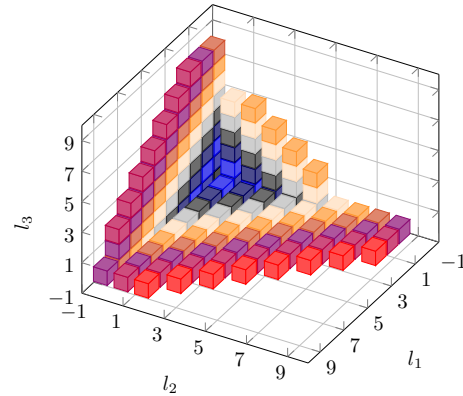
Figure 2: Figure example

Figure 3: Figure example

References

[1] Eric Beauregard, Jean Proulx, and D. Kim Rossmo. Spatial patterns of sex offenders: Theoretical, empirical, and practical issues. *Aggression and Violent Behavior*, 10(5):579–603, 2005.

[2] Scotia J. Hicks and Bruce D. Sales. *Crime Analysis: From First Report to Final Arrest*. American Psychological Association, Washington, DC, 2006.

[3] Spotcrime.com. `http://www.spotcrime.com`. Accessed on january 14, 2015.

[4] Doboszczak, Stefan and Virginia Forstall. Mathematical modeling by differential equations, 2013. `http://www.norbertwiener.umd.edu/Education/m3cdocs/Presentation2.pdf`. Accessed on january 14, 2015.

Appendices

A   Your First Appendix

From here, begin your first Appdendix... your can include some program script, such as matlab, c/cpp, python.

A.1   MATLAB example

```matlab
% Matlab example
n = 200;
Pltg = 5e-6;
Pgrw = 1e-2;
NW = [n 1:n-1];
SE = [2:n    1];
veg = zeros(n);
imh = image( cat(3,(veg==1),(veg==2),zeros(n)) );
for i=1:3000
    num =              (veg(NW,:)==1) + ...
         (veg(:,NW)==1)     +      (veg(:,SE)==1) + ...
                      (veg(SE,:)==1);

    veg = 2*( (veg==2) | (veg==0 & rand(n)<Pgrw) ) - ...
             ( (veg==2) & (num >0 | rand(n)<Pltg) );

    set(imh, 'cdata', cat(3,(veg==1),(veg==2),zeros(n)) );
    drawnow
end
```

B   cpp example

```cpp
#include <stdio.h>
int main(int argc, char ** argv)
{
  printf("Hello world!\n"); // heollo world!
  return 0;
}
```

C   cpp example

```
1  from pylab import *
2  import scipy.signal as signal
3  #A function to plot frequency and phase response
4  def mfreqz(b,a=1):
5      w,h = signal.freqz(b,a)
6      h = abs(h)
7      return(w/max(w), h)
```

D   Your Second Appendix

Table 3: Data example(Here we use long table)

AAAAAAAAAAAAAA	BBBBBBBBBBBBB	CCCCCCCCCCCCCC
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
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15		
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