Problem Chosen	2022	Team Control Number
C	**MCM/ICM** **Summary Sheet**	**2211494**

The LaTeX Template for MCM Version v6.3.1

Summary

Here is the main abstract part.
Go to the next line.

Keywords: keyword1; keyword2

Contents

1 Introduce

1.1 Background

Market traders buy and sell volatile assets to maximize their total return. Quantitative trading is a great means to achieve this.

The so-called quantitative trading means that investors use computer technology, financial engineering modeling, and other means to make investment decisions and execute trading strategies in strict accordance with the rules set to determine the amount and price of volatile assets to be bought and sold.

With the development of computer technology and modern financial theory, quantitative trading, which realizes automatic trading of securities with the help of electronic technology, has come into being. Quantitative trading has many advantages:

- Multiply efficiency by using historical data for strategy checking,

- Capture trading opportunities in real-time across the market, dramatically improving profitability,

- Allows for more objective measurement of trading results,

- Access to profit opportunities that are difficult to find by human hands alone.

With these advantages, quantitative trading has received widespread attention from the industry since its inception in the 1970s and has grown at an alarming rate.

1.2 Problem Restatement

- minimizes the discomfort to the hands, or

- maximizes the outgoing velocity of the ball.

We focus exclusively on the second definition.

- the initial velocity and rotation of the ball,

- the initial velocity and rotation of the bat,

- the relative position and orientation of the bat and ball, and

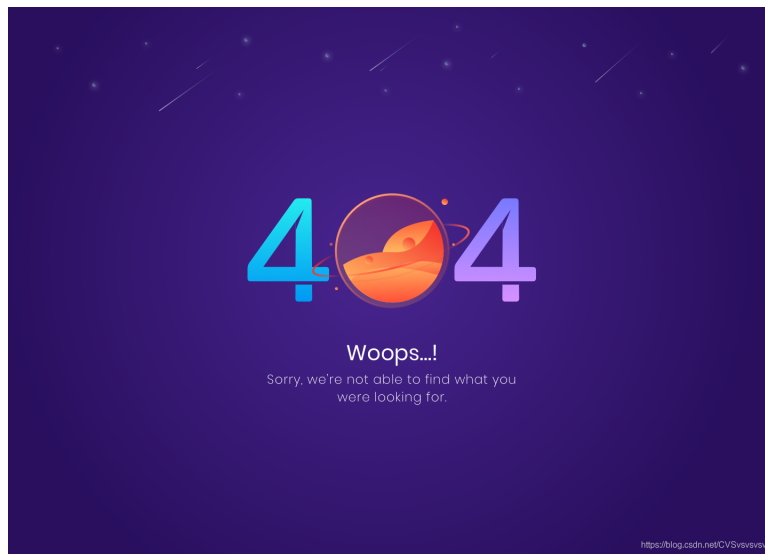- the force over time that the hitter hands applies on the handle.

Figure 1: this is a figure demo

1.3 Overview

Here is a example to cite the referenced article[1].
Another article[2].

2 Assumptions and Justifications

2.1 Model Preparation

This is an inline formula. $a = \sqrt{b+c}$.

$$E = mc^2 \tag{1}$$

$$F = ma \tag{2}$$

Theorem 2.1. *LaTeX*

Lemma 2.2. *TeX.*

Proof. The proof of theorem. □
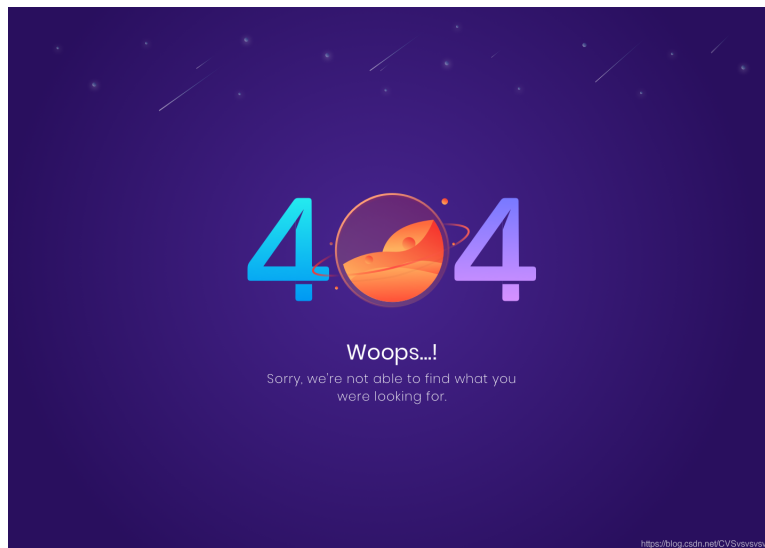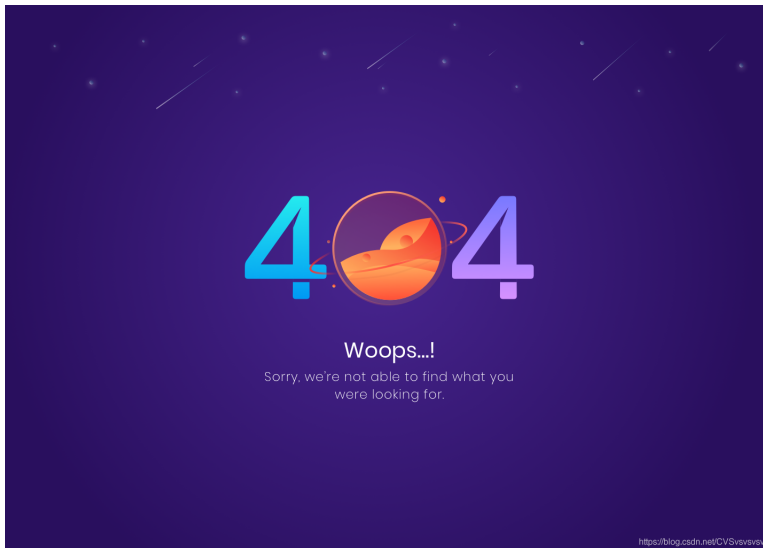

Figure 2: this is a figure demo

2.1.1 Table-1

OS	Release	Editor
Windows	MikTeX	TexMakerX
Unix/Linux	teTeX	Kile
Mac OS	MacTeX	TeXShop
General	TeX Live	TeXworks

2.1.2 Table-2

1234	5678
1	2
3	4

2.1.3 Table-3

symbols	definitions
v_i	velocity of ball before collision
v_f	velocity of ball after collision
V_f	velocity of bat after collision
S	the shear modulus the bat
Y	Youngs modulus of the bat

2.2 Cite

Here is a example to cite the referenced article[1].
Another article[2].

$$\begin{pmatrix} *20ca_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} = \frac{Opposite}{Hypotenuse} \cos^{-1}\theta \arcsin\theta$$

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$$p_j = \begin{cases} 0, & \text{if } j \text{ is odd} \\ r!\,(-1)^{j/2}, & \text{if } j \text{ is even} \end{cases}$$

Suspendisse vitae elit. Aliquam arcu neque, ornare in, ullamcorper quis, commodo eu, libero. Fusce sagittis erat at erat tristique mollis. Maecenas sapien libero, molestie et, lobortis in, sodales eget, dui. Morbi ultrices rutrum lorem. Nam elementum ullamcorper leo. Morbi dui. Aliquam sagittis. Nunc placerat. Pellentesque tristique sodales est. Maecenas imperdiet lacinia velit. Cras non urna. Morbi eros pede, suscipit ac, varius vel, egestas non, eros. Praesent malesuada, diam id pretium elementum, eros sem dictum tortor, vel consectetuer odio sem sed wisi.

$$\arcsin\theta = \oiiint_\varphi \lim_{x\to\infty} \frac{n!}{r!\,(n-r)!} \tag{1}$$

3   Solution to Problem1

3.1   ...

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4   Solution to Problem2

4.1   ...

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5   Solution to Problem3

5.1   ...

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6   Solution to Problem4

6.1   ...

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egestas vel, odio.

7   Sensitivity Analysis

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

8   Strengths and weaknesses

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8.1   Strengths

- **Applies widely**
  This system can be used for many types of airplanes, and it also solves the interference during the procedure of the boarding airplane,as described above we can get to the optimization boarding time.We also know that all the service is automate.

8.2   Weakness

- **Improve the quality of the airport service**
  Balancing the cost of the cost and the benefit, it will bring in more convenient for airport and passengers.It also saves many human resources for the airline.

9   Reference

References

[1] S. Konishi, K. Nakajima, I. Uchida, H. Kikyo, M. Kameyama, and Y. Miyashita, "Common inhibitory mechanism in human inferior prefrontal cortex revealed by event-related functional mri," *Brain*, vol. 122, no. 5, p. 981, 1999.

[2] qiuyh, "article's title," *journal name*, vol. 20, no. 40, 2019.

Appendices

Appendix A First appendix

Aliquam lectus. Vivamus leo. Quisque ornare tellus ullamcorper nulla. Mauris porttitor pharetra tortor. Sed fringilla justo sed mauris. Mauris tellus. Sed non leo. Nullam elementum, magna in cursus sodales, augue est scelerisque sapien, venenatis congue nulla arcu et pede. Ut suscipit enim vel sapien. Donec congue. Maecenas urna mi, suscipit in, placerat ut, vestibulum ut, massa. Fusce ultrices nulla et nisl. Here are simulation programmes we used in our model as follow.