

```

/*****
    Author: Erik Kell          Date: 26 March 2022
    Class: CS 202             Title: Midterm Exam

```

Programs are also on github:  
<https://github.com/airjet00/CS202>

\*\*\*\*Purpose\*\*\*\*

Midterm exam. Code needs to be clear, concise, and readable. Create a pdf report containing source code and first 10 pages of output for a book for EACH problem.

\*\*\*\*What to Do\*\*\*\*

1. (Version of HW3: Additional Program 1)  
Write a program that reads in a book (Project Gutenberg or similar) and outputs the text based on given characters wrapping value.  
  
Usage: prettyprint 768.txt 50  
Should print the book with a max of 50 char per line.
2. Modify program from #1 to print the text in two column format. The command-line arguments are the input file name, the number of lines per page, the width of the columns, and the number of blank spaces between the columns.

Usage: twocolumn 768.txt 40 38 4  
Should print 40 lines per page, with each column a max of 38 char wide and 4 blank spaces between the columns. Output "-----" to show each page break.

\*\*\*\*Optional next steps\*\*\*\*

N/A

```

/*****/

#include <iostream>
#include <vector>
#include <fstream>

using TYPE = std::string;

//Method prints the text with x number of char per line
void printFile(std::vector<TYPE> fileData, const int charPerLine){
    int count = 0;
    for(int i = 0; i < fileData.size(); i++)
    {
        //checking char count on each line and printing if 50 or under
        if((count + fileData[i].size()) < charPerLine){
            std::cout << fileData[i] << " ";

```

```

        count = count + fileData[i].size() + 1;
    }
    else if((count + fileData[i].size()) == charPerLine)
    {
        std::cout << fileData[i];
        count = count + fileData[i].size();
    }
    else if((count + fileData[i].size()) > charPerLine)
    {
//        std::cout << count << "\n"; //to check count of each line
        std::cout << "\n";
        count = 0;
        continue;
    }
    else
    {
        break;
    }
}
std::cout << "\n";
}

//open file method
void loadFile(std::string fileName, const int charPerLine)
{
    std::vector<TYPE>(fileData);
    std::ifstream file;
    file.open(fileName);
    if(!file.is_open()) return;

    std::string word;
    while (file >> word)
    {
        fileData.push_back(word);
    }
    //call to print file
    printFile(fileData, charPerLine);
}

int main(int argc, char *argv[]){

    std::string fileName = argv[1];
    const char* chNum = argv[2];
    const int charPerLine = std::stoi(chNum);

    //TEST TEXT FILES
    //    std::string fileName =
"/Users/erikkell/Programming/CS202/CS202/testfile.txt";
    //    /Users/erikkell/Programming/CS202/CS202/ten_page_book.txt

    loadFile(fileName, charPerLine);

    return 0;
}

```

## PROGRAM 1

### INPUT:

./main/Users/erikkell/Programming/CS202/CS202/testfile.txt 40

### OUTPUT:

Section 1.10.33 of "de Finibus Bonorum Malorum", written by Cicero in 45 BC "At eos et accusamus et iusto odio ducimus qui blanditiis praesentium deleniti atque corrupti quos dolores et molestias excepturi sint occaecati non provident, similique sunt in culpa officia deserunt mollitia animi, id est et dolorum fuga. Et harum quidem rerum est et expedita distinctio. Nam libero cum soluta nobis est eligendi optio nihil impedit quo minus id quod maxime facere possimus, omnis voluptas est, omnis dolor repellendus. Temporibus quibusdam et aut officiis debitis aut necessitatibus saepe eveniet ut et repudiandae sint et molestiae non Itaue earum rerum hic tenetur a delectus, ut aut reiciendis voluptatibus alias consequatur aut perferendis asperiores repellat." 1914 translation H. Rackham "On the other hand, we with righteous indignation and dislike who are so beguiled and demoralized by charms of pleasure of the moment, so by desire, that they cannot foresee the and trouble that are bound to ensue; and blame belongs to those who fail in their through weakness of will, which is the as saying through shrinking from toil pain. These cases are perfectly simple easy to distinguish. In a free hour, our power of choice is untrammelled and nothing prevents our being able to do we like best, every pleasure is to be and every pain avoided. But in certain and owing to the claims of duty or the of business it will frequently occur pleasures have to be repudiated and accepted. The wise man therefore always in these matters to this principle of he rejects pleasures to secure other pleasures, or else he endures pains to worse pains."

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```

2. Modify program from #1 to print the text in two column format. The command-line arguments are the input file name, the number of lines per page, the width of the columns, and the number of blank spaces between the columns.

Usage: twocolumn 768.txt 40 38 4  
Should print 40 lines per page, with each column a max of 38 char wide and 4 blank spaces between the columns. Output "-----" to show each page break.

```

*****/

```

```

#include <iostream>
#include <vector>
#include <fstream>
#include <string>

```

```

using TYPE = std::string;
using std::stoi;

```

```

//Method builds and returns columns as vector
std::vector<TYPE> createColumn(std::vector<TYPE> fileData, const int
linesPerPage,
                                const int columnWidth, int& columnCount) {
    std::vector<TYPE> vColumn;
    std::string s;
    int count = 0;
    int countLines = 0;
    //loop thr and build column using columnCount as a ref for i
    for (int i = columnCount; i <= fileData.size(); i++) {
        //if less than column width
        if ((s.size() + fileData[i].size()) < columnWidth) {
            columnCount = i;
            if(columnCount == fileData.size()) {
                s.append(fileData[i]);
                vColumn.push_back(s);
                return vColumn;
            }
            s.append(fileData[i]).append(" ");
        }
        //if equal to column width
    } else if ((s.size() + fileData[i].size()) == columnWidth) {
        s.append(fileData[i]);
        vColumn.push_back(s);
        s = "";
        columnCount = i;
        countLines++;
        if(countLines == linesPerPage || columnCount ==
            fileData.size()) return vColumn;
    }
}

```

```

        //if greater than column width
    } else if ((s.size() + fileData[i].size()) > columnWidth) {
        vColumn.push_back(s);
        columnCount = i;
        i--;
        countLines++;
        s = "";
        if(countLines == linesPerPage) return vColumn;
    }
}
return vColumn;
}

//Method prints the text with x number of char per line
void printFile(std::vector<TYPE> fileData, const int linesPerPage,
               const int columnWidth, const int spaceBetweenColumns) {

    int LTCCount = 0;
    int RTCount = 0;
    bool flag = true;
    int dataPlace = 0;
    std::string s;
    std::vector<TYPE> strColumn1;
    std::vector<TYPE> strColumn2;

    while(flag) {
        //When even, make left column
        if ((LTCCount + RTCount) % 2 == 0) {
            //dataPlace to calc where at in fileData
            std::vector<TYPE> vectorCol1 = createColumn(fileData,
                                                         linesPerPage, columnWidth, dataPlace);
            strColumn1.insert(strColumn1.end(), vectorCol1.begin(),
                              vectorCol1.end());

            LTCCount++;
            //if size doesn't match line count then is uneven column
            //and finished
            if (strColumn1.size() != (linesPerPage * LTCCount)) {
                flag = false;
                break;
            }
            //When odd, make right column
        } else if ((LTCCount + RTCount) % 2 != 0) {
            //dataPlace to calc where at in fileData
            std::vector<TYPE> vectorCol2 = createColumn(fileData,
                                                         linesPerPage, columnWidth, dataPlace);
            strColumn2.insert(strColumn2.end(), vectorCol2.begin(),
                              vectorCol2.end());

            RTCount++;

            //if size doesn't match line count then is uneven column
            //and finished
            if (strColumn2.size() != (linesPerPage * RTCount)) {
                flag = false;
                break;
            }
        }
    }
}

```

```

    }
// printing loop
std::string spaceBC;
int count = 0;
std::ofstream resultFile("resultTest.txt");
for (int p = 0; p < strColumn1.size(); p++) {
    //counting space between columns
    while((columnWidth - strColumn1[p].size() + spaceBetweenColumns)
           != spaceBC.size()) {
        spaceBC.append(" ");
    }
    //print to file/screen
    resultFile << strColumn1[p] << spaceBC << strColumn2[p] << "\n";
    std::cout << strColumn1[p] << spaceBC << strColumn2[p] <<
                                                    std::endl;

    //testing column size and spaces
    //      std::cout << spaceBC.size() << " col size: " <<
    //      strColumn1[p].size() <<std::endl;

    spaceBC = "";
    //adding pg break
    if(((p+1) % linesPerPage) == 0){
        std::cout << "\n----- Pg. " << ((p+1)/linesPerPage)
<<" ----- \n" << std::endl;

        resultFile << "\n----- Pg. " << ((p+1)/linesPerPage) <<"
----- \n";
    }

}
resultFile.close();

}

//run file method
void runFile(std::string fileName, const int linesPerPage,
            const int columnWidth, const int spaceBetweenColumns)
{
    //open and added to vector fileData
    std::vector<TYPE>(fileData);
    std::ifstream file;
    file.open(fileName);
    if(!file.is_open()) return;

    std::string word;
    while (file >> word)
    {
        fileData.push_back(word);
    }
    //call to print file
    printFile(fileData, linesPerPage, columnWidth, spaceBetweenColumns);
}

int main(int argc, char *argv[]){

    //Arguments from command line

```

```
std::string fileName = argv[1];
const char* chLinesPerPage = argv[2];
const char* chColumnWidth = argv[3];
const char* chSpaceBetweenColumns = argv[4];

//convert to int
const int linesPerPage = stoi(chLinesPerPage);
const int columnWidth = stoi(chColumnWidth);
const int spaceBetweenColumns = stoi(chSpaceBetweenColumns);

//run method call
runFile(fileName, linesPerPage, columnWidth, spaceBetweenColumns);

//TEST TEXT FILES, for future testing
//    /Users/erikkell/Programming/CS202/CS202/testfile.txt
//    /Users/erikkell/Programming/CS202/CS202/ten_page_book.txt
return 0;
}
```

## PROGRAM 2

### INPUT:

./twocolumn /Users/erikkell/Programming/CS202/CS202/ten\_page\_book.txt 40  
35 4

### OUTPUT:

I. Introduction The Time Traveller (for so it will be convenient to speak of him) was expounding a recondite matter to us. His pale grey eyes shone and twinkled, and his usually pale face was flushed and animated. The fire burnt brightly, and the soft radiance of the incandescent lights in the lilies of silver caught the bubbles that flashed and passed in our glasses. Our chairs, being his cube patents, embraced and caressed us rather than submitted to be sat upon, and there was that luxurious after-dinner atmosphere, when thought runs gracefully free of the trammels of precision. And he put it to us in this way—marking the points with a lean forefinger—as we sat and lazily admired his earnestness over this new paradox (as we thought it) and his fecundity. “You must follow me carefully. I shall have to controvert one or two ideas that which are almost universally accepted. The geometry, for instance, they taught you at school is founded on a misconception.” “Is not that rather a large thing to expect us to begin upon?” said Filby, an argumentative person with red hair. “I do not mean to ask you to accept anything without reasonable ground for it. You will soon admit as much as I need from you. You know of course that a mathematical line, a line of thickness nil, has no real existence. They taught

you that? Neither has a mathematical plane. These things are mere abstractions.” “That is all right,” said the Psychologist. “Nor, having only length, breadth, and thickness,

a cube have a real existence.” “There I object,” said Filby. “Of course a solid body may exist. All real things—” “So most people think. But wait a moment. Can an instantaneous

exist?” “Don’t follow you,” said Filby. “Can a cube that does not last for any time at all, have a real existence?” Filby became pensive. “Clearly,” the Time Traveller proceeded, “any real body must have extension in four directions: it must have Length, Breadth, Thickness, and—Duration. But through a natural infirmity of the flesh, which I will explain to you in a moment, we incline to overlook this fact. There are really four dimensions, three

we call the three planes of Space, and a fourth, Time. There is, however, a tendency to draw an unreal distinction between the former three dimensions and the latter, because it happens that our consciousness moves intermittently in one direction along the latter from the beginning to the end of our lives.” “That,” said a very young man, making spasmodic efforts to relight his cigar over the lamp; “that . . . very clear indeed.” “Now, it is very



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remarkable that this is so extensively overlooked," continued the Time Traveller, with a slight accession of cheerfulness. "Really this is what is meant by the Fourth Dimension, though some people who talk about the Fourth his

Dimension do not know they mean it. It is only another way of looking at Time. \_There is no difference between Time and any of the three dimensions of Space except that our consciousness moves along it\_. But some foolish people have got hold of the wrong side of that idea. You have all heard what they have to say about this Fourth Dimension?" "\_I\_ have not," said the Provincial Mayor. "It is simply this. That Space, as our mathematicians have it, is spoken of as having three dimensions, on.

which one may call Length, Breadth, and Thickness, and is always definable by reference to three planes, each at right angles to the others. But some philosophical people have been asking why \_three\_ dimensions particularly—why not another direction at right angles to the other three?—and have even tried to construct a Four-Dimensional geometry. scientific

Professor Simon Newcomb was expounding this to the New York Mathematical Society only a month or so ago. You know how on a flat yesterday surface, which has only two it dimensions, we can represent a to figure of a three-dimensional

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trace this line in any of the passing dimensions of Space generally recognised? But certainly it traced to

solid, and similarly they think that by models of three dimensions they could represent one of four—if they could master the perspective of the thing. See?"

"I think so," murmured the Provincial Mayor; and, knitting

brows, he lapsed into an introspective state, his lips moving as one who repeats mystic words. "Yes, I think I see it now," he said after some time, brightening in a quite transitory manner. "Well, I do not mind telling you I have been at work upon this geometry of Four Dimensions for some time. Some of my results are curious. For instance, here is a portrait of a man at eight years old, another at fifteen, another at seventeen, another at twenty-three, and so

All these are evidently sections, as it were, Three-Dimensional representations of his Four-Dimensioned being, which is a fixed and unalterable thing.

"Scientific people," proceeded the Time Traveller, after the pause required for the proper assimilation of this, "know very well that Time is only a kind of Space. Here is a popular

diagram, a weather record. This line I trace with my finger shows the movement of the barometer. Yesterday it was so high,

night it fell, then this morning rose again, and so gently upward here. Surely the mercury did not

and have no dimensions, are

along the Time-Dimension with a uniform velocity from the cradle

such a line, and that line, travel therefore, we must conclude, was along the Time-Dimension." "But," said the Medical Man, staring hard at a coal in the fire, "if Time is really only a fourth dimension of Space, why is it, and why has it always been, regarded as something different? And why cannot we move in Time as we move about in the other dimensions of Space?" The Time Traveller smiled. "Are you so sure we can move freely in Space? Right and left we can go, backward and forward freely enough, minded, and men always have done so. I admit we move freely in two dimensions. But how about up and down? Gravitation limits us there." "Not exactly," said the Medical Man. "There are balloons." "But before the balloons, save for spasmodic jumping and the inequalities of the surface, man had no freedom of vertical movement." "Still they could move a little up and down," said the Medical Man. "Easier, far easier down than up." "And you cannot move at all in Time, you cannot get away from the present moment." "My dear sir, that is just where you are wrong. That is just where the whole world has gone wrong. We are always getting away from the present moment. Our mental existences, which are immaterial

the grave. Just as we should down if we began our existence fifty miles above the earth's surface." "But the great difficulty is this," interrupted the Psychologist. 'You can move about in all directions of Space, but you cannot move about in Time.' "That is the germ of my great discovery. But you are wrong to say that we cannot move about in Time. For instance, if I am recalling an incident very vividly I go back to the instant of its occurrence: I become absent-minded, as you say. I jump back for a moment. Of course we have no means of staying back for any length of Time, any more than a savage or an animal has of staying six feet above the ground. But a civilised man is better off than the savage in this respect. He can go up against gravitation in a balloon, and why should he not hope that ultimately he may be able to stop or accelerate his drift along the Time-Dimension, or even turn about and travel the other way?" "Oh, this," began Filby, "is all—" "Why not?" said the Time Traveller. "It's against reason," said Filby. "What reason?" said the Time Traveller. "You can show black is white by argument," said Filby, "but you will never convince me."

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"Possibly not," said the Time Traveller. "But now you begin to see the object of my investigations into the geometry of Four Dimensions. Long ago I had a vague inkling of a machine—" "To travel through Time!" exclaimed the Very Young Man. "That shall travel indifferently in any direction of Space and Time, as the driver determines." Filby contented himself with laughter. "But I have experimental

theories!" began the Psychologist. "Yes, so it seemed to me, and so I never talked of it until—" "Experimental verification!" cried I. "You are going to verify that?" "The experiment!" cried Filby, who was getting brain-weary. "Let's see your experiment anyhow," said the Psychologist, "though it's all humbug, you know." The Time Traveller smiled round at us. Then, still smiling

verification," said the Time Traveller. "It would be remarkably convenient for the historian," the Psychologist suggested. "One might travel back and verify the accepted account of the Battle of Hastings, for instance!" "Don't you think you would attract attention?" said the Medical Man. "Our ancestors had no great tolerance for anachronisms." "One might get one's Greek from the very lips of Homer and Plato," the Very Young Man thought. "In which case they would certainly plough you for the Little-go. The German scholars have improved Greek so clock, much." "Then there is the future," said the Very Young Man. "Just think! One might invest all one's money, leave it to accumulate at interest, and hurry on ahead!" "To discover a society," said I, "erected on a strictly communistic basis." "Of all the wild extravagant

faintly, and with his hands deep in his trousers pockets, he walked slowly out of the room, and we heard his slippers shuffling down the long passage to his laboratory. The Psychologist looked at us. "I wonder what he's got?" "Some sleight-of-hand trick or other," said the Medical Man, and Filby tried to tell us about a conjuror he had seen at Burslem, but before he had finished his preface the Time Traveller came back, and Filby's anecdote collapsed. II. The Machine The thing the Time Traveller held in his hand was a glittering metallic framework, scarcely larger than a small and very delicately made. There was ivory in it, and some transparent crystalline substance. And now I must be explicit, for this that follows—unless his explanation is to be accepted—is an absolutely unaccountable thing. He took one of the small octagonal tables that were scattered about the room, and

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set it in front of the fire, with two legs on the hearthrug. On this table he placed the mechanism. Then he drew up a chair, and sat down. The only other object on the table is was a small shaded lamp, the bright light of which fell upon the model. There were also perhaps a dozen candles about, two in brass candlesticks upon the mantel and several in sconces, so that the room was brilliantly illuminated. I sat in a low arm-chair nearest the fire, and I drew this forward so as to be almost between the Time Traveller and the fireplace. Filby sat behind him, looking over his the shoulder. The Medical Man and the Provincial Mayor watched him in Presently profile from the right, the Psychologist from the left. The

twinkling appearance about this bar, as though it was in some way unreal." He pointed to the part with his finger. "Also, here is one little white lever, and here another." The Medical Man got up out of his chair and peered into the thing. "It's beautifully made," he said. "It took two years to make," retorted the Time Traveller. Then, when we had all imitated the action of the Medical Man, he said: "Now I want you clearly to understand that this lever, being pressed over, sends the machine gliding into the future, and this other reverses motion. This saddle represents the seat of a time traveller. I am going to press the lever, and off the machine will go. It will

Very Young Man stood behind the Psychologist. We were all on the alert. It appears incredible to me that any kind of trick, however subtly conceived and however adroitly done, could have been played upon us under these conditions. The Time Traveller looked at us, and then at the mechanism. "Well?" said the Psychologist. "This little affair," said the Time Traveller, resting his elbows upon the table and pressing his hands together above the apparatus, "is only a model. It is my plan for a machine to travel through time. You will forefinger.

notice that it looks singularly askew, and that there is an odd

vanish, pass into future Time, and disappear. Have a good look at the thing. Look at the table too, and satisfy yourselves there is no trickery. I don't want to waste this model, and then be told I'm a quack." There was a minute's pause perhaps. The Psychologist seemed about to speak to me, but changed his mind. Then the Time Traveller put forth his finger towards the lever. "No," he said suddenly. "Lend me your hand." And turning to the Psychologist, he took that individual's hand in his own and told him to put out his

So that it was the Psychologist himself who sent forth the model

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Time Machine on its interminable voyage. We all saw the lever turn. I am absolutely certain there was no trickery. There was a breath of wind, and the lamp flame jumped. One of the candles on the mantel was blown out, and the little machine suddenly swung round, became indistinct, was seen as a ghost for a second perhaps, as an eddy of faintly glittering brass and ivory; and it was gone—vanished! Save for the lamp the table was bare. Everyone was silent for a minute. Then Filby said he was damned. The the

Psychologist recovered from his stupor, and suddenly looked under the table. At that the Time Traveller laughed cheerfully. "Well?" he said, with a reminiscence of the Psychologist. Then, getting up, he went to the tobacco jar on the mantel, and with the his back to us began to fill his pipe. We stared at each other. "Look here," said the Medical Man, "are you in earnest about this? Do you seriously believe that that machine has travelled into

there"—he indicated the laboratory—"and when that is put together I mean to have a journey on my own account." "You mean to say that that machine has travelled into the future?" said Filby. "Into the future or the past—I don't, for certain, know which." After an interval the Psychologist had an inspiration. "It must have gone into the past if it has gone anywhere," he said. "Why?" said the Time Traveller. "Because I presume that it has not moved in space, and if it travelled into

future it would still be here all this time, since it must have travelled through this time." "But," said I, "If it travelled into the past it would have been visible when we came first into this room; and last Thursday when we were here; and

Thursday before that; and so forth!" "Serious objections," remarked the Provincial Mayor, with an air of impartiality, turning towards the Time Traveller. "Not a bit," said the Time Traveller,

time?" "Certainly," said the Time Traveller, stooping to light a spill at the fire. Then he turned, lighting his pipe, to look at the Psychologist's face. (The Psychologist, to show that he was not unhinged, helped himself to a cigar and tried to light it uncut.) "What is more, I have a big machine nearly finished in delightfully.

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delightfully. We cannot see it, nor can we appreciate this machine, any thing

more than we can the spoke of a wheel spinning, or a bullet flying through the air. If it is travelling through time fifty times took

or a hundred times faster than we are, if it gets through a minute while we get through a second, the impression it creates will of course be only one-fiftieth or one-hundredth of what it would make if it were not travelling in time. That's plain enough." He passed his hand through the space in which the machine had been. "You see?" he said, laughing. We sat and stared at the vacant table for caught

a minute or so. Then the Time Traveller asked us what we thought of it all. "It sounds plausible enough tonight," said the Medical Man; "but wait until tomorrow. Wait for the common sense of the morning." "Would you like to see the Time Machine itself?" asked the Time Traveller. And therewith, taking the lamp in his hand, he led the way down the long, some

draughty corridor to his laboratory. I remember vividly the flickering light, his queer, broad head in silhouette, the dance of the shadows, how we all followed him, puzzled but incredulous, and how there in the laboratory we beheld a larger edition of the

and, to the Psychologist: "You think. You can explain that. It's presentation below the threshold, you know, diluted presentation." "Of course," said the Psychologist, and reassured us. "That's a simple point of psychology. I should have thought of it. It's plain enough, and helps the paradox

parts had certainly been filed or sawn out of rock crystal. The

was generally complete, but the twisted crystalline bars lay unfinished upon the bench beside some sheets of drawings, and I

one up for a better look at it. Quartz it seemed to be. "Look here," said the Medical Man, "are you perfectly serious? Or is this a trick—like that ghost you showed us last Christmas?"

"Upon that machine," said the Time Traveller, holding the lamp aloft, "I intend to explore time. Is that plain? I was never more serious in my life." None of us quite knew how to take it. I

Filby's eye over the shoulder of the Medical Man, and he winked at me solemnly. III. The Time Traveller Returns I think that at that time none of us quite believed in the Time Machine. The fact is, the Time Traveller was one of those men who are too clever to be believed: you never felt that you saw all round him; you always suspected some subtle reserve,

ingenuity in ambush, behind his lucid frankness. Had Filby shown the model and explained the matter in the Time Traveller's words, we should have shown him far less scepticism. For we should have perceived his motives: a pork-butcher could understand

little mechanism which we had seen  
vanish from before our eyes. Parts  
his  
were of nickel, parts of ivory,

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Things that would have made the  
fame of a less clever man seemed  
tricks in his hands. It is a  
mistake to do things too easily.  
The serious people who took him  
seriously never felt quite sure of  
his deportment; they were somehow  
aware that trusting their  
reputations for judgment with him  
was like furnishing a nursery with  
if

eggshell china. So I don't think  
any of us said very much about time  
travelling in the interval between  
that Thursday and the next, though  
its odd potentialities ran, no  
doubt, in most of our minds: its  
bell.

plausibility, that is, its  
practical incredibleness, the  
curious possibilities of  
anachronism and of utter confusion  
were

it suggested. For my own part, I  
a

was particularly preoccupied with  
the trick of the model. That I  
remember discussing with the  
Medical Man, whom I met on Friday  
at the Linnæan. He said he had  
seen a similar thing at Tübingen,  
and laid considerable stress on the  
blowing-out of the candle. But how  
the trick was done he could not  
explain. The next Thursday I went  
again to Richmond—I suppose I was  
one of the Time Traveller's most  
constant guests—and, arriving  
late, found four or five men  
already assembled in his  
drawing-room. The Medical Man was  
standing before the fire with a  
sheet of paper in one hand and his  
watch in the other. I looked round

Filby. But the Time Traveller had  
more than a touch of whim among  
elements, and we distrusted him.

for the Time Traveller,  
and—"It's half-past seven  
now," said the Medical Man. "I  
suppose we'd better have  
dinner?" "Where's—?"  
said I, naming our host.  
"You've just come? It's  
rather odd. He's unavoidably  
detained. He asks me in this note  
to lead off with dinner at seven

he's not back. Says he'll  
explain when he comes." "It  
seems a pity to let the dinner  
spoil," said the Editor of a  
well-known daily paper; and  
thereupon the Doctor rang the

The Psychologist was the only  
person besides the Doctor and  
myself who had attended the  
previous dinner. The other men

Blank, the Editor aforementioned,

certain journalist, and another—a  
quiet, shy man with a beard—whom  
I didn't know, and who, as far as  
my observation went, never opened  
his mouth all the evening. There  
was some speculation at the  
dinner-table about the Time  
Traveller's absence, and I  
suggested time travelling, in a  
half-jocular spirit. The Editor  
wanted that explained to him, and  
the Psychologist volunteered a  
wooden account of the "ingenious  
paradox and trick" we had  
witnessed that day week. He was in  
the midst of his exposition when  
the door from the corridor opened  
slowly and without noise. I was  
facing the door, and saw it first.

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"Hallo!" I said. "At last!" articulation. "I'm all  
And the door opened wider, and the right." He stopped, held out his

Time Traveller stood before us. I gave a cry of surprise. "Good heavens! man, what's the matter?" cried the Medical Man, who saw him next. And the whole faces  
tableful turned towards the door. He was in an amazing plight. His coat was dusty and dirty, and smeared with green down the his  
sleeves; his hair disordered, and as it seemed to me greyer—either with dust and dirt or because its colour had actually faded. His face was ghastly pale; his chin had a brown cut on it—a cut half-healed; his expression was haggard and drawn, as by intense suffering. For a moment he hesitated in the doorway, as if he had been dazzled by the light. Then he came into the room. He walked with just such a limp as I have seen in footsore tramps. We stared lameness  
at him in silence, expecting him to speak. He said not a word, but came painfully to the table, and made a motion towards the wine. The Editor filled a glass of champagne, and pushed it towards him. He drained it, and it seemed to do him good: for he looked round the table, and the ghost of his old smile flickered across his face. "What on earth have you been up to, man?" said the Doctor. The Time Traveller did not seem to hear. "Don't let me disturb you," say, he said, with a certain faltering

glass for more, and took it off at a draught. "That's good," he said. His eyes grew brighter, and a faint colour came into his cheeks.

His glance flickered over our

with a certain dull approval, and then went round the warm and comfortable room. Then he spoke again, still as it were feeling

way among his words. "I'm going to wash and dress, and then I'll come down and explain things.... Save me some of that mutton. I'm starving for a bit of meat." He looked across at the Editor, who was a rare visitor, and hoped he was all right. The Editor began a question. "Tell you presently," said the Time Traveller. "I'm—funny! Be all right in a minute." He put down his glass, and walked towards the staircase door. Again I remarked his

and the soft padding sound of his footfall, and standing up in my place, I saw his feet as he went out. He had nothing on them but a pair of tattered, blood-stained socks. Then the door closed upon him. I had half a mind to follow, till I remembered how he detested any fuss about himself. For a minute, perhaps, my mind was wool-gathering. Then, "Remarkable Behaviour of an Eminent Scientist," I heard the Editor say, thinking (after his wont) in headlines. And this brought my

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attention back to the bright dinner-table. "What's the game?" said the Journalist. "Has he been doing the Amateur Cadger? I don't follow." I met the eye of the Psychologist, and read my own interpretation in his face. I thought of the Time Traveller limping painfully upstairs. I don't think anyone else had noticed his lameness. The

clothes-brushes in the Future? The Journalist too, would not believe at any price, and joined the Editor in the easy work of heaping ridicule on the whole thing. They were both the new kind of journalist—very joyous, irreverent young men. "Our Special Correspondent in the Day after Tomorrow reports," the Journalist was saying—or rather

first to recover completely from this surprise was the Medical Man, who rang the bell—the Time Traveller hated to have servants waiting at dinner—for a hot plate. At that the Editor turned to his knife and fork with a grunt, and the Silent Man followed suit. The dinner was resumed. Conversation was exclamatory for a little while with gaps of wonderment; and then the Editor got fervent in his curiosity. "Does our friend eke out his modest income with a crossing? or has he his Nebuchadnezzar phases?" he inquired. "I feel assured it's this business of the Time Machine," I said, and took up the Psychologist's account of our previous meeting. The new guests were frankly incredulous. The Editor raised objections. "What \_was\_ this time travelling? A man couldn't cover himself with dust by rolling in a paradox, could he?" And then, as the idea came home to him, he resorted to caricature. Hadn't they any

shouting—when the Time Traveller came back. He was dressed in ordinary evening clothes, and nothing save his haggard look remained of the change that had startled me. "I say," said the Editor hilariously, "these chaps here say you have been travelling into the middle of next week! Tell us all about little Rosebery, will you? What will you take for the lot?" The Time Traveller came to the place reserved for him without a word. He smiled quietly, in his old way. "Where's my mutton?" he said. "What a treat it is to stick a fork into meat again!" "Story!" cried the Editor. "Story be damned!" said the Time Traveller. "I want something to eat. I won't say a word until I get some peptone into my arteries. Thanks. And the salt." "One word," said I. "Have you been time travelling?" "Yes," said the Time Traveller, with his mouth full, nodding his head. "I'd give a shilling a line for a verbatim note," said the

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Editor. The Time Traveller pushed his glass towards the Silent Man and rang it with his fingernail; at which the Silent Man, who had been staring at his face, started convulsively, and poured him wine. The rest of the dinner was uncomfortable. For my own part, sudden questions kept on rising to my lips, and I dare say it was the same with the others. The Journalist tried to relieve the tension by telling anecdotes of Hettie Potter. The Time Traveller devoted his attention to his dinner, and displayed the appetite of a tramp. The Medical Man smoked a cigarette, and watched the Time Traveller through his eyelashes. The Silent Man seemed even more clumsy than usual, and drank champagne with regularity and determination out of sheer

"But the thing's a mere paradox," said the Editor. "I can't argue tonight. I don't mind telling you the story, but I can't argue. I will," he went on, "tell you the story of what has happened to me, if you like, but you must refrain from interruptions. I want to tell it. Badly. Most of it will sound like lying. So be it! It's true—every word of it, all the same. I was in my laboratory at four o'clock, and since then ... I've lived eight days ... such days as no human being ever lived before! I'm nearly worn out, but I shan't sleep till I've told this thing over to you. Then I shall go to bed. But no interruptions! Is it agreed?" "Agreed," said the Editor, and the rest of us echoed "Agreed."



nervousness. At last the Time Traveller pushed his plate away, and looked round us. "I suppose I must apologise," he said. "I was simply starving. I've had a most amazing time." He reached out his hand for a cigar, and cut of the end. "But come into the smoking-room. It's too long a story to tell over greasy plates." And ringing the bell in passing, he led the way into the adjoining room. "You have told Blank, and Dash, and Chose about the machine?" he said to me, leaning back in his easy-chair and naming the three new guests. "But

And with that the Time Traveller began his story as I have set it forth. He sat back in his chair at first, and spoke like a weary man. Afterwards he got more animated. In writing it down I feel with only too much keenness the inadequacy pen and ink—and, above all, my own inadequacy—to express its quality. You read, I will suppose, attentively enough; but you cannot see the speaker's white, sincere face in the bright circle of the little lamp, nor hear the intonation of his voice. You cannot know how his expression followed the turns of his story! Most of us

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hearers were in shadow, for the candles in the smoking-room had not been lighted, and only the face of the Journalist and the legs of the Silent Man from the knees downward were illuminated. At first we glanced now and again at each other. After a time we ceased to do that, and looked only at the Time Traveller's face.