CS 207
Assignment # 1

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I. Introdution to formatting your assignment the right way

You should use LaTeXto make your assignments readable and easy to mark. Simply replace this and the following sections in order to automatically make your assignments look great! Here's some Latin to take up space. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat [2]. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur [1]. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum [3].

A. Writing a subsection

This is a subsection. Many assignments have multiple parts to them and so there should be a subsection for each part. Just give the subsection a witty name – or the one provided by the assignment. Here's some more Latin. Lorem ipsum sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat [2]. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur [1]. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum [3].

1) A subsubsection: This is a subsubsection. You probably won't have to do this often, but if you have a really detailed subsection, here ya go. I like Latin. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat [2]. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur [1]. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum [3].

2) Another Subsubsection: Here's another subsubsection – and here's some more Latin. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat [2]. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur [1]. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum [3].

II. Equations and Lists

Use the following as templates for writing equations. More Latin! Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat [2]. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur [1]. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum [3].

A. Here's Some Equation Templates

$$E_k = \frac{1}{2}mv^2 \tag{1}$$

$$time = (distance/velocity) \times E_k$$

B. Here's some lists

Here is a list of various things:

- Thing 1
- Thing 2
  - Sub-Thing 1
  - Sub-Thing 2
    - Sub-Sub-Thing 1
    - Sub-Sub-Thing 2
  - Last Sub-Thing
- Last thing

III. Including Figures

Here's how you include figures. There's a bunch of different ways to do it. And here's some more Latin. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat [2]. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur [1]. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum [3].

(a) First caption (b) Second caption (c) Third caption

Fig. 1. A collection of subfigures

Fig. 2. Regular, single centered figure

IV. Task 2 - Referencing cool stuff used in other places

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TABLE I
Table of things

Column header 1	Column header 2	Column header 3
10	22 things	68360.5
15	16 things	48142.7
20	14 things	42781.1
22	13 things	40764.5
23	9 things	26577.2

A particular example of a meme can be seen on Fig. 2.

Below follows the text file content, check out Listing 1:

```
graph G {
"0" [label="0 J", type=0, supply=0, demand=0]
"0"--"5"[label=" d = 397.387\n t = 427", distance=397.387, time=427]
"0"--"8"[label=" d = 585.713\n t = 558", distance=585.713, time=558]
"1" [label="1 S", type=1, supply=0, demand=22]
"1"--"5"[label=" d = 243.602\n t = 174", distance=243.602, time=174]
```

```
"2" [label="2 J", type=0, supply=0, demand=0]
"2"--"9"[label=" d = 802.2\n t = 483", distance=802.2, time=483]
}
```

Listing 1. The underlying textual form of the graph

Holy smokes! That was powerful. You can also check out automatically numbered Fig. 2, but if you screw up and reference something that does not exist in your document, you get this – **??**. Watch out!

Thus, if the stuff shown in Fig. 2 was looked at, then you can check Listing 2 in Appendix A, which is cool and good.

For mommy's political centrists or anyone who likes centered stuff:

This is a centered text. You weren't baffled.

V. Conclusion

This was merely a whacky demonstration of the power that this weird LaTeX typesetting blesses you with. Prepared by Mikhail Shchukin, Department of Computer Science, University of Regina. Now it's time for you to go and compile your assignment report without any compiling errors, moved away floating figures and more.

WAIT, OH SHI...

Appendix A
Lifehack code

```
const int ledR = 3;
const int ledG = 9;
const int ledB = 11;

void setup() {
  // put your setup code here, to run once:
  pinMode(ledR, OUTPUT);
  pinMode(ledG, OUTPUT);
  pinMode(ledB, OUTPUT);
  pinMode(6, OUTPUT);
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:
  int brightness = analogRead(A0);
  int mbrightness = map(brightness,0, 1023, 0, 255);
  Serial.println(mbrightness);
  digitalWrite(6,HIGH);
  if (mbrightness > 20){
    int red, green, blue = 0;
    int x = brightness;
    red = 80 + log(x)*log(x)*sqrt(x) * 1.5;
    green = 200 - log(red)*log(red)*sqrt(red) * 1.5;
    blue = 255 - log(green)*log(green)*sqrt(green) * 1.5;
    setRGB(red,green,blue);
    tone(5,brightness);
  } else {
    setRGB(0,0,0);
    noTone(5);
  }
}

void setRGB(int red, int green, int blue) {
  analogWrite(ledR, red);
  analogWrite(ledG, green);
  analogWrite(ledB, blue);
```

}

Listing 2. The output of the routing algorithm solving the problem

REFERENCES

[1] G. Monge. *Mmoire sur la thorie des dblais et des remblais. Histoire de lAcadmie Royale des Sciences de Paris, avec les Mmoires de Mathmatique et de Physique pour la młme anne*. , pages 666704, 1781.
[2] L. Kantorovich. *On the translocation of masses*. C.R. (Doklady) Acad. Sci. URSS (N.S.), 37:199201, 1942.
[3] Graphviz.org. *Graphviz - Graph Visualization Software*. 2019. [online] Available at: http://www.graphviz.org/ [Accessed 24 Mar. 2019].