Answer Sheet Session 2

To be given 1 day before session 2. Students try out the problems first. Then they see this solution and compare it with theirs. We discuss the problems in session 2.

Reminder to TRY IT YOURSELF FIRST

Note that this answer sheet is just a guide to show how things can turn out. The real submission would be the pictures of the results viewed in CURA.

Also note that you should only see this sheet if you CANNOT come up with a code that works at all. Otherwise, your CURA images are enough for a submission.

In fact, the point is to make improvements to the code and make something better than the given code. Put your own spin on it.

This course made to show real work. We start with something relatively simple with minimal instruction and self-learn with online resources. Then we try and keep doing more and more complex things until we have something substantial!

The only difference in real life work is that you don’t get the answer sheet. You make your own!

By the end of this internship, you should add something of your own above and beyond what is mentioned in the answer sheets. That is when you graduate and get ready for the real world!

# Session 2 Code Sample

This is the full program to get out a simple square. It is made intentionally longer and more cumbersome. Can you find a way to make it shorter?

#include <iostream>

#include <fstream>

#include <string>

#include <math.h>

using namespace std;

int main ()

{

fstream fileRead; // File to read top and bottom

fstream fileMain; // file to write into

string line;

double x1,x2,y1,y2,e,d,erate; // xy coordinates and extrusion value

int i;

erate = 0.013161;

// Reading Top File

fileRead.open("top\_filler.txt", ios::in);

fileMain.open("example1.gcode", ios::out); // truncate for the top fill

cout<<"Reading from top filler file\n";

while (getline(fileRead,line))

{

fileMain<<line<<endl;

cout<<line<<endl;

}

fileRead.close();

cout<<"\nTop filler file finished\n";

fileMain.close();

// write middle section of code

fileMain.open("example1.gcode", ios::app);

fileMain<<"\nG1 F1200 X180 Y140 E0 \n"; // setting original position and speed

x1=180;

y1=140;

x2=200;

y2=160;

//x=20;

//y=20;

//d = sqrt(x\*x + y\*y);

d=20;

e = d\*erate;

fileMain<<"\nG1 X"<<x2<<" Y"<<y1<<" E"<<e;

fileMain<<"\nG1 X"<<x2<<" Y"<<y2<<" E"<<(e\*2);

fileMain<<"\nG1 X"<<x1<<" Y"<<y2<<" E"<<(e\*3);

fileMain<<"\nG1 X"<<x1<<" Y"<<y1<<" E"<<(e\*4)<<endl;

cout<<"\nMaking square";

fileMain.close();

//Reading Bottom File

fileRead.open("bottom\_filler.txt", ios::in);

fileMain.open("example1.gcode", ios::app); // append to add bottom

cout<<"\nReading from bottom filler file\n";

while (getline(fileRead,line))

{

fileMain<<line<<endl;

cout<<line<<endl;

}

fileRead.close();

cout<<"\nBottom filler file finished";

fileMain.close();

}