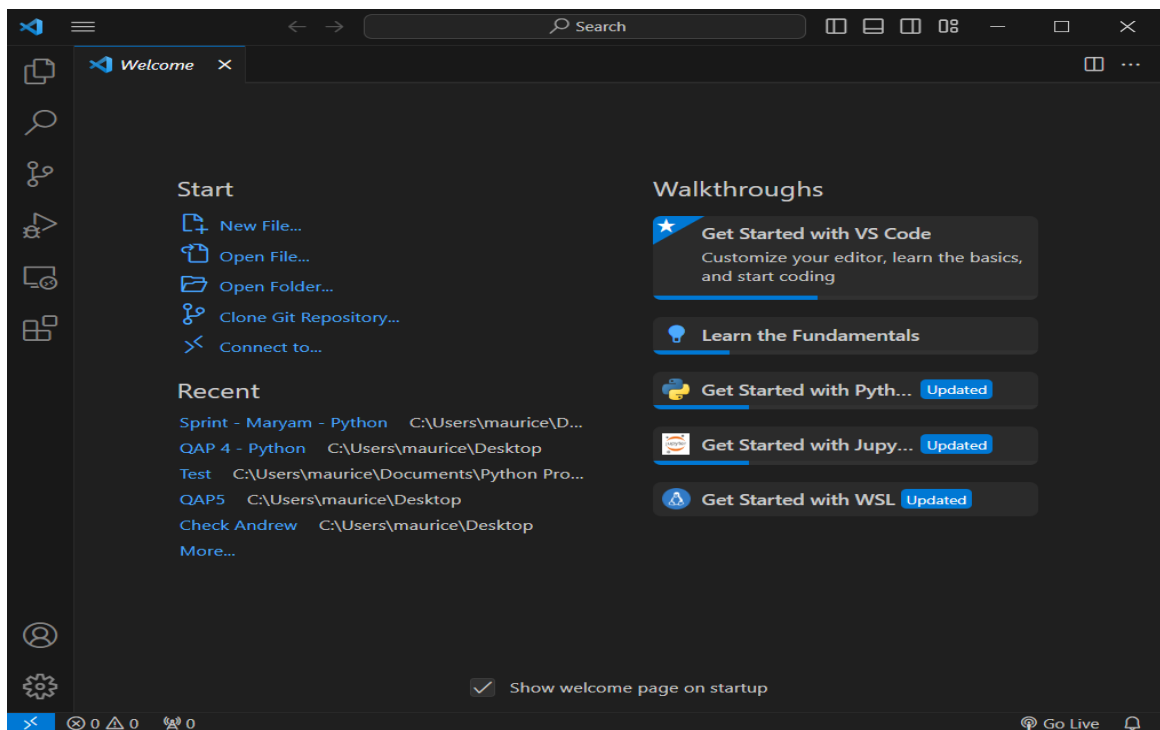# Intro to Python - Lesson 1 and 2

For this afternoon's class we will use IPO Charts to plan a program. This is a very important step in the programming process and often ignored.   Please view the following before the class at 1.
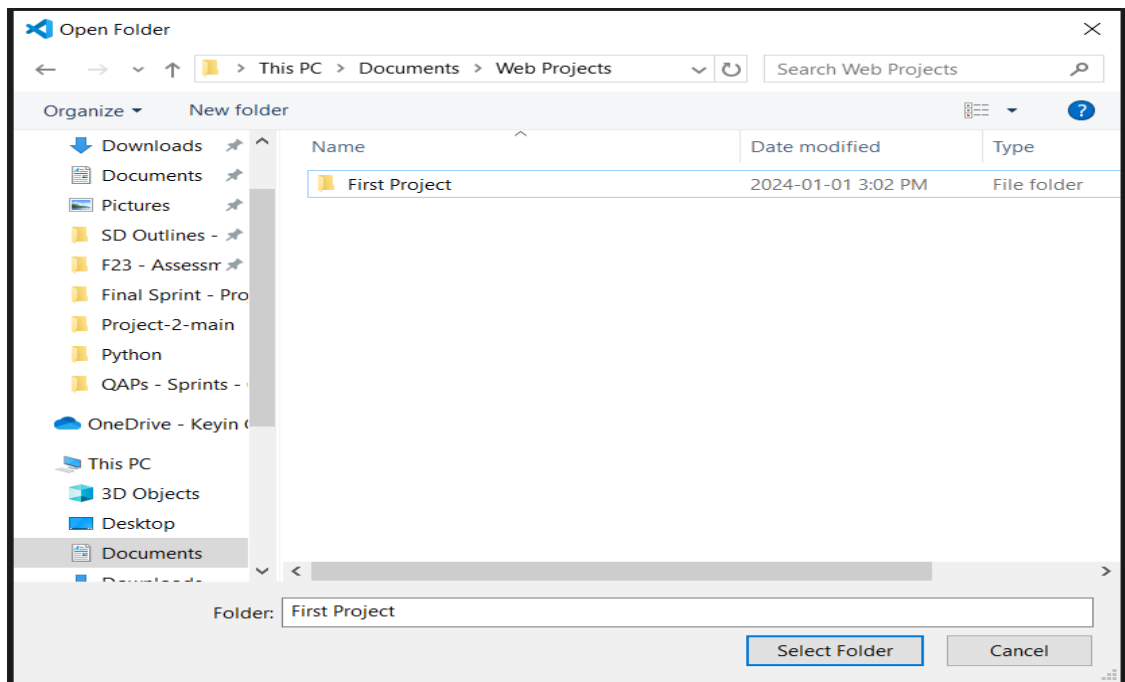
https://www.youtube.com/watch?v=Y8Tko2YC5hA   – What is Python?
https://www.youtube.com/watch?v=vUn5akOlFXQ   – What is an IDE?
https://www.youtube.com/watch?v=xUhPxj8if0U   – Python Variables and Datatypes
https://www.youtube.com/watch?v=OBqk7ccoGPI   – Input, Processing and Output
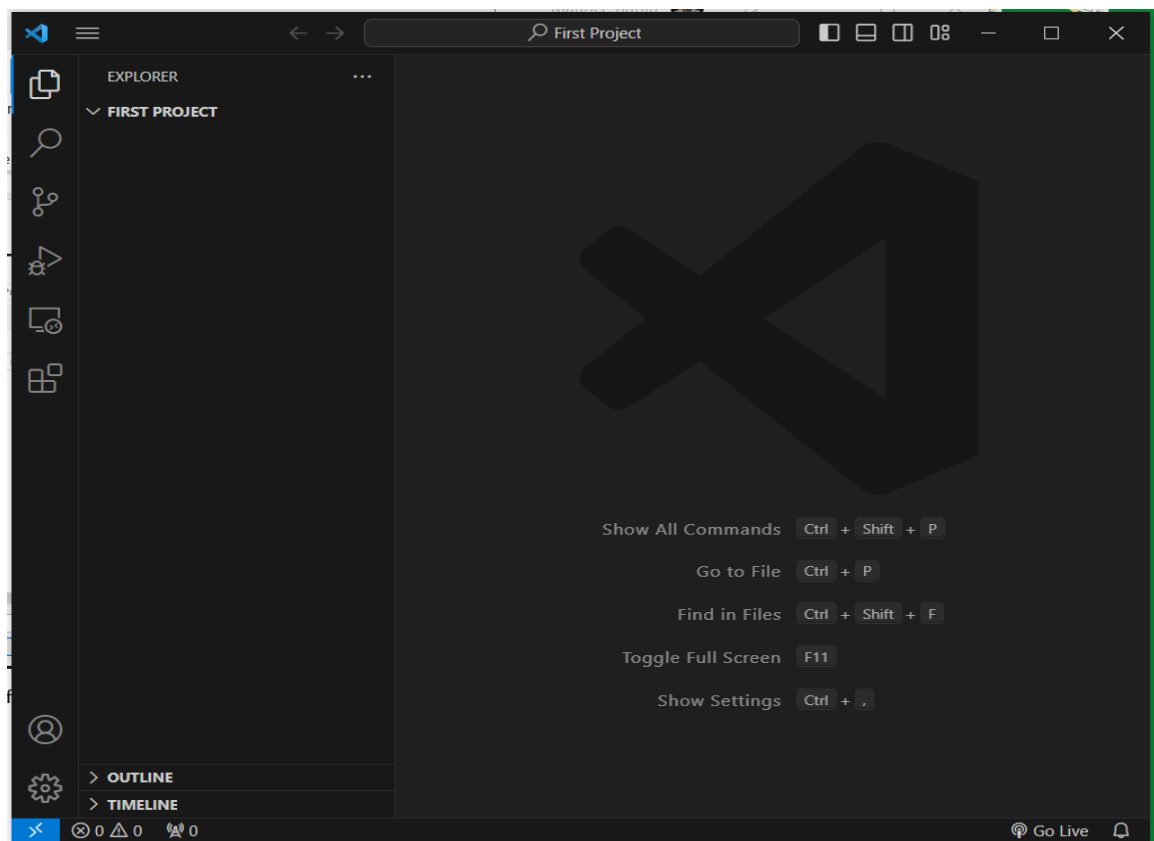https://www.youtube.com/watch?v=a10a11oxjrA   – Planning with IPO Charts

Preparing for a new project using VS Code. Start VS Code and receive the Welcome Screen. From this screen select the **Open Folder** option or use **File / Open Folder** from the menu.

From the Open Folder dialog box, navigate to the Documents Folder – you may set up a folder for Web Projects and open that folder as well, then select the New Folder option – this will add a new folder and provide an appropriate name for the folder. Click on the Folder to select it and click on the Select Folder button on the bottom of the screen.

This will now open this new project – all documents that you create for the project will be saved to this folder – all the files will be in the same place.

Hover on the Project folder shown, the first icon to the right that appears is to add a new file. Enter the name of the file – depending on the application you are going to code. For Python programs use a .py extension, and for web documents add an .html extension to the file. This will add the file to the project folder and open the template so you can start. **Happy Coding.**

Use the following exercises to practice IPO Charts. We will convert these into programs later this week.

1. Write a program that will allow the user to enter two integer values, and display the results including the Sum, Difference, Product and Quotient.

2. Help ABC Company with a program that determines weekly payroll for employees. Enter the number of hours worked, the pay rate per hour, and the total sales or the week. The gross pay is calculated as the hourly pay plus the commission. The weekly pay is the hours worked by the pay rate. The Commission is 4% of the total sales for the week. Deductions are calculated on the gross pay using an income tax rate of 20%, an EI rate of 2.8% and a CPP rate of 4.95%. Also calculate the Medical premium at 3% of gross pay, and the pension using a rate of 2.5% of the gross pay. Add all the deductions for the total deductions. Finally find the net pay as the gross pay less all the deductions. Display all input and calculated values to the screen for the user.

3. NL Chocolate Company pays salespeople expenses when they go on business trips. Input will include the salesperson name, the location of the trip, the number of days for the trip, and the number of kilometers travelled. Calculate the per diem amount using a rate of $56.00 per day for food and accidentals. The lodging amount is calculated at $125.00 per night. Finally, the mileage amount is calculated at .24 cents per kilometer. The total claim is all three values added together. Taxes (HST) is calculated t 15% on the per diem and lodging amounts only. The Claim total is the total claim plus the taxes. Display all input values and calculated values to the screen for the user.

4. Computer Liquidations wants to gather data on new inventory items they bring into their store. Input the item name, the item cost (the amount the company paid for the item), and the number in stock. Calculate the retail price (the amount on the sales tag) by adding a markup of 75% to the item cost. The total inventory at cost is the item cost multiplied by the number on hand, and the total inventory at retail is the retail cost multiplied by the number in stock. The difference between these two values is the gross margin. Finally, determine the sales price of the item with 10% off, 25% off, 33% off, and 50% off – Note that this is the cost after the discount. Display all input values and calculated values to the screen for the user.

See you at 1.