Week 1

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Objectives & Outcomes

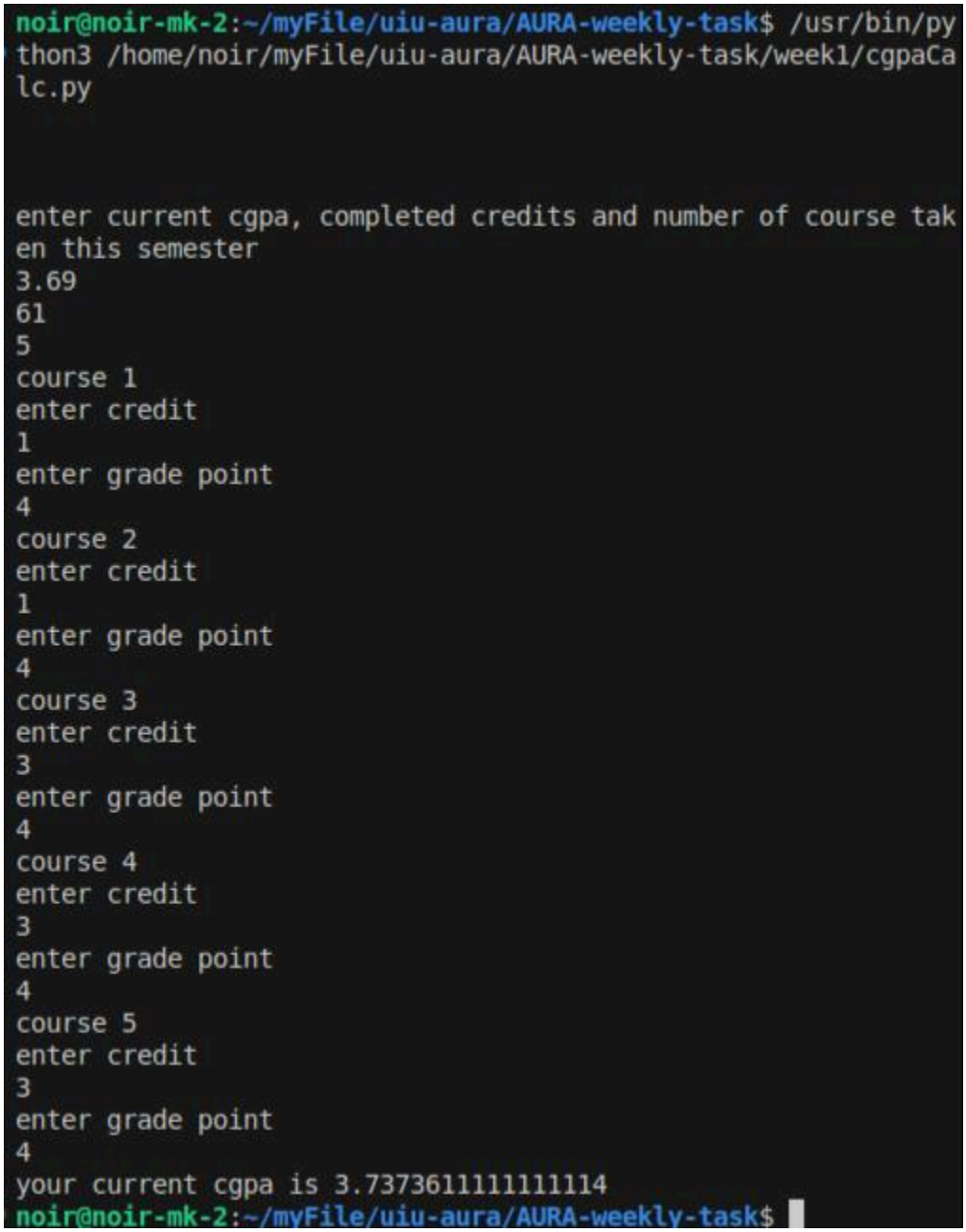
- **Planned**:
  - Set up environment, Git/GitHub, and learn core Python syntax.
- **Achieved**:
  - Basic knowledge about git push/commit.
  - In depth knowledge about python basics (loops, conditions, variable types)
  - Version control using git

Script: ***cgpaCalc.py***

Code & Explanations

- **What it does :** Calculates CGPA. It can calculate term GPA as well as overall CGPA. User have to enter his current credit and CGPA, and the grades and credit of his current courses.
- **How it works :** At first the programme takes input for CGPA and completed credits and number of courses taken in the running semester. Then the GPA is being calculated using this formula, GPA=∑Credits/∑(Grade Point×Credit). After calculating GPA, CGPA is being calculated using this formula,
  CGPA = prev_credits + new_credits (prev_cg × prev_credits) + (new_gpa × new_credits). Lastly the result is printed
- **Key functions :** Totally runs on the terminal, no dependencies need to be installed. Can calculate both term GPA and overall CGPA. User can add as many course as possible

- **Screenshots :**



Challenges & Solutions

- **Issue:** Divided by zero
- **Symptoms / errors:** If the denominator of the division is zero it throws an error
- **Fix implemented:** Added a simple if statement if denominator = 0 , then it will terminate the process

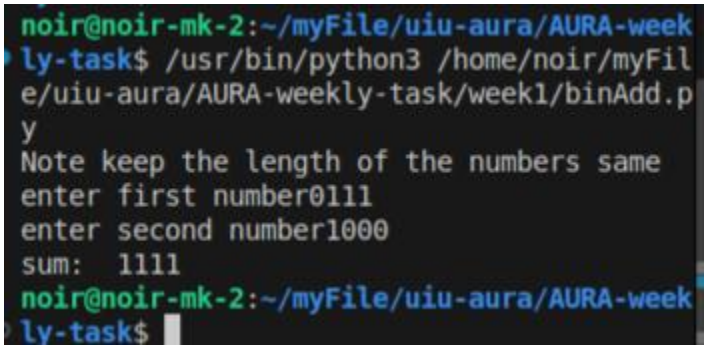
Script: ***binAdd.py***

Code & Explanations

- **What it does :** Adds 2 binary number of the same length
- **How it works :** At first the programme takes 2 binary numbers of the same length. Then it takes each digit from right to left and performs binary addition and updates sum and carry. Here the result is being stored from left to right, so after the full calculation it needs to be reversed. Here is the basic rule for the calculation,

inputs	carry in	total	result	carry out
0+0+0	0	0	0	0
0+1+0	0	1	1	0
1+1+0	0	2	0	1
1+1+1	1	3	1	1

- **Screenshots :**



Challenges & Solutions

- **Issue:** Faced errors with input times
- **Symptoms / errors:** At first I was taking input as an integer, and because of it the for loop couldn't access i'th element of the number
- **Fix implemented:** Converted the input as string

Git/Github

First I created a local folder for my project and linked it with my Github. After the first successful connection, i use

```
git add .
git commit -m “message”
git push
```

to update my code.