EMUPENT

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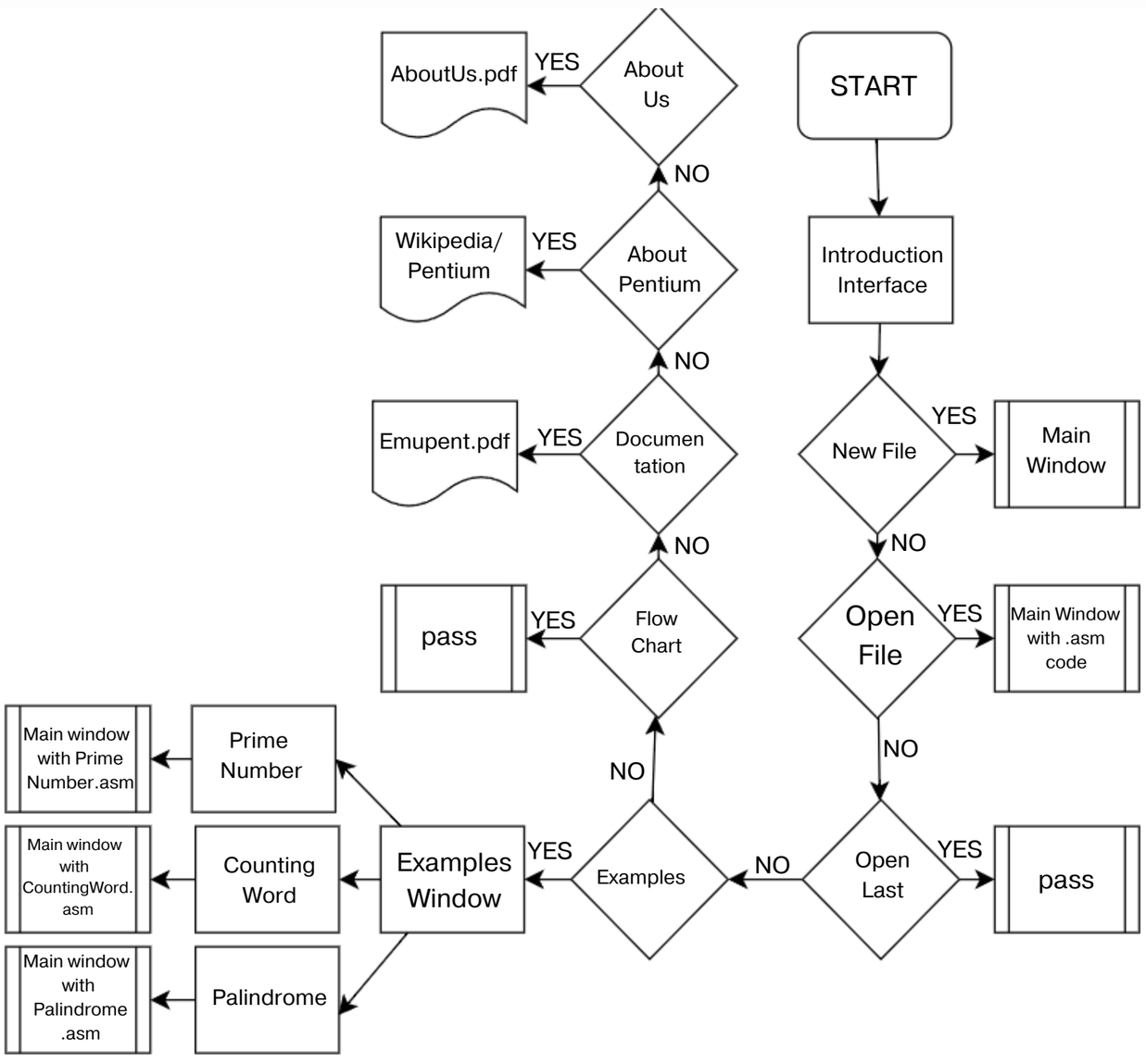
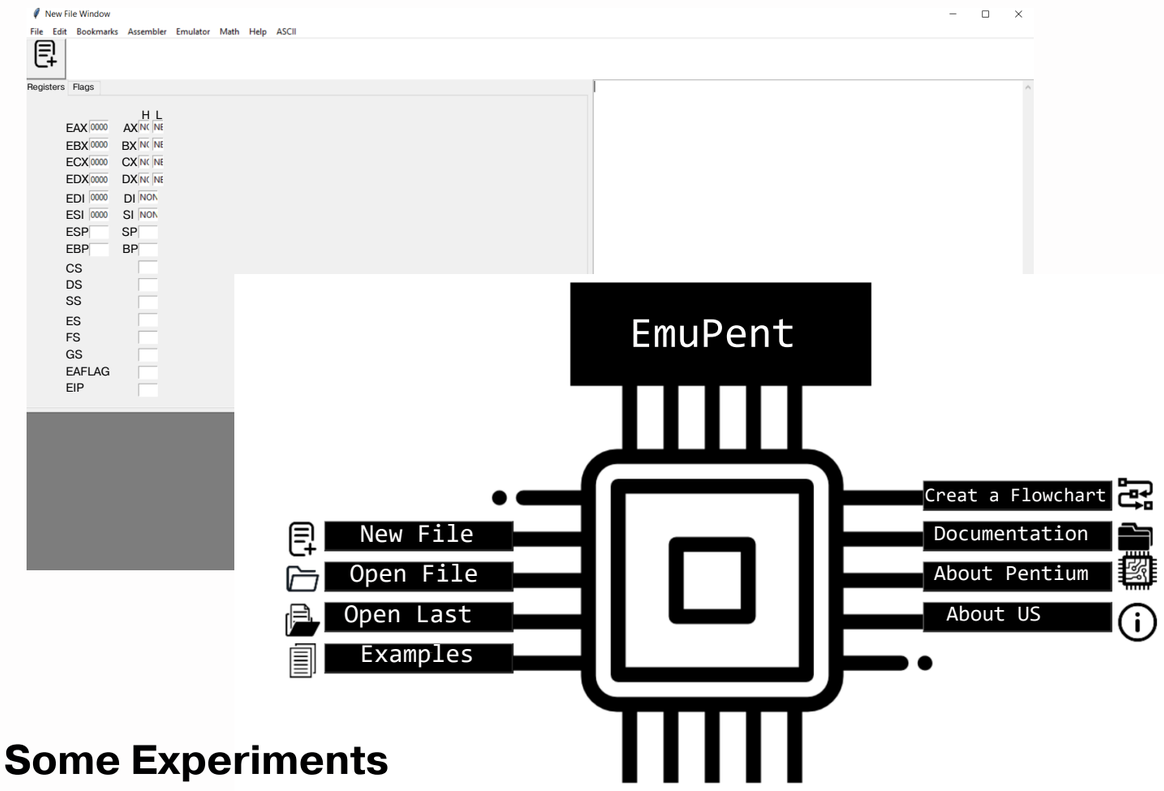
- We tried to design a Pentium emulator, which we named EMUPENT.
- While working on our project, we tried to take reference from the emu8086 developed by Glaimt ISHAAN, which we used in the ELE338 Microprocessor Architecture and Programming Laboratory course.
- In our project, we are able to run approximately 30 commands.
- Along with this, we conducted some experiments that we did in the ELE338 Microprocessor Architecture and Programming Laboratory course.

- For ease of use and resource availability, we chose the Python programming language.
- When creating the interface, we had two options: Tkinter and PyQt5. We chose the Tkinter library because it is more understandable and easier.
- This choice led us to encounter errors while creating the console.
- These errors caused us to use the Python console instead of creating our own.
- We planned 8 buttons, but since the project is not completely finished, only two of them are working.

- The system includes 30 commands comprising arithmetic, logic, loop, and interrupt operations.
- The 32-bit registers are EAX, EBX, ECX, EDX.
- The 16-bit registers are AX, BX, CX, DX.
- Additionally, 8 flag registers are active. These are TF, IF, CF, PF, AF, ZF, SF, and OF.
- The ESI, EDI, SI, and DI registers are also actively running.



Interface of the EMUPENT



Some Experiments

Experiment #1- Palindrome Control

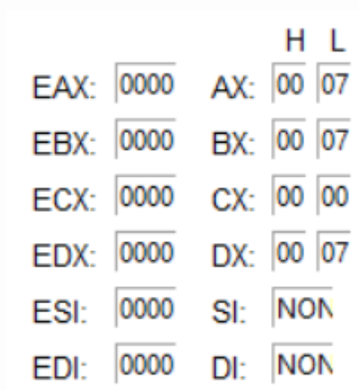
(a)Use interrupt to check whether the word you entered from the console is a palindrome

```
C:\Windows\py.exe
WELCOME TO THE PALINDROME EXPERIMENT
To check whether the letters from the first digit to
the median digit of a word are identical to the
letters from the last digit to the median digit (If
the string is more than 30 letters, you will get an
error message.):
Enter a word:
aibohphobia
It is a Palindrome
Enter a word:
HelloWorld
It is not a Palindrome
```

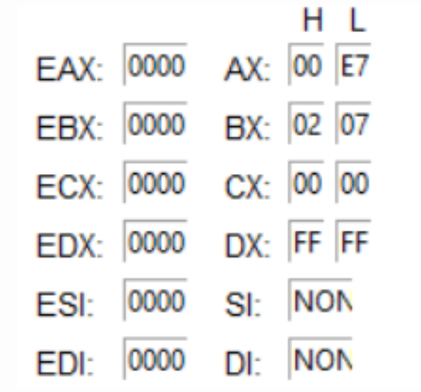
Experiment #2- Prime Numbers

According to experiment:
(a) If the number is a Prime number that number will be held in DX register.
(b) If the number is not a Prime number result in DX should be FFFFh.

When enter 7.



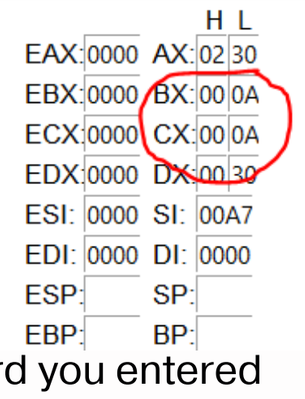
When enter 231.



Experiment #3- Counting Word

(a) Write an 8088/8086 assembly language code which will count the number of words in a sentence hold in a memory location.

msg db 'Technically, anything with a microprocessor can be considered a robot.$'



Experiment #3- Palindrome Control

(a)Use interrupt to check whether the word you entered from the console is a palindrome