B2 · Discussion #9 · 2021-03-26

Announcements

- HW #4 due Monday → designed to give you experience working w/a dataset
  - hand in one per group via group submission on Gradescope

- Final Project & Proposal have been released → decide which societal problem you want solve & find large dataset

- Final Project Groups due Monday ... fill out spreadsheet!
  → randomly assigned after Monday

- Final Project Proposal due Monday, 4/5/21 @ 10 am EDT

- Wellness Day on Wednesday, 3/31/21 ... no lecture or lab

- Friday, 4/2/21 is last day to drop a course

- Had to use gcc compiler this week. Can use anyone you want next week

- This week and next: we are reinforcing concepts that you've already learned using MATLAB. After that, it will be new concepts.

Review Material

- Intro
- integer division
- input (input buffer)
- output
- selection
- loops (while vs. do-while)
- empty or null statement

Remind us ~10:38 am EST to stop Discussion for the quiz! (15 min + 5 upload)
  → FYI: serious points will be taken off for late submissions

INPUT BUFFER

Enter a number: 4f

→ scan in 4, but f is left in the input buffer

fflush(stdin);

LOOPS

- for loop:
```
for (i=0; i<=N; i++)
    printf ("Hey!\n")  ←action
```

- nested for loop:
```
for (i=0; i<=N; i++)
{
    //action in outer loop, including inner
    for (j=0; j<=L; j++)
    {
        //action in inner loop
    }
}
```

- while loop: action can get skipped entirely, may not even use it
```
while (condition example)
{
    action_1;
    action_2;
}
```

- do while loop: action is always on top, so it runs @ least once
```
do
{
    action_1;
    action-2;
}
while (condition example);
```

ex.
```
do
{   printf ("Enter a quiz grade: ");
    scanf (" %f", &grade);
while (i=0; i<=4; i++)
```
while (scanf("%f, &grade) ==1)

TYPECASTING

(type) expression

float number;

number = 1/5;   ← 0.0000

number = (float) 1/5;   ← 0.2000

generating Random #'s

header files: <time.h>, <stdlib.h>

set the seed in the program:
        srand (time (NULL));

general formula:

$$\boxed{rand() \% (MAX - MIN +1) + MIN}$$

ex. generate random # from 5 to 10
        rand() % 6 + 5