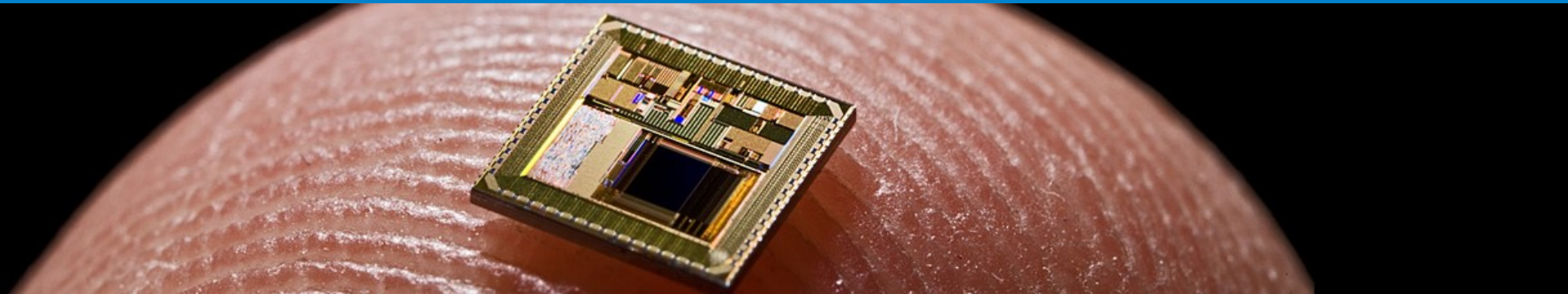


Data Structure

HW1

- inversion using stack

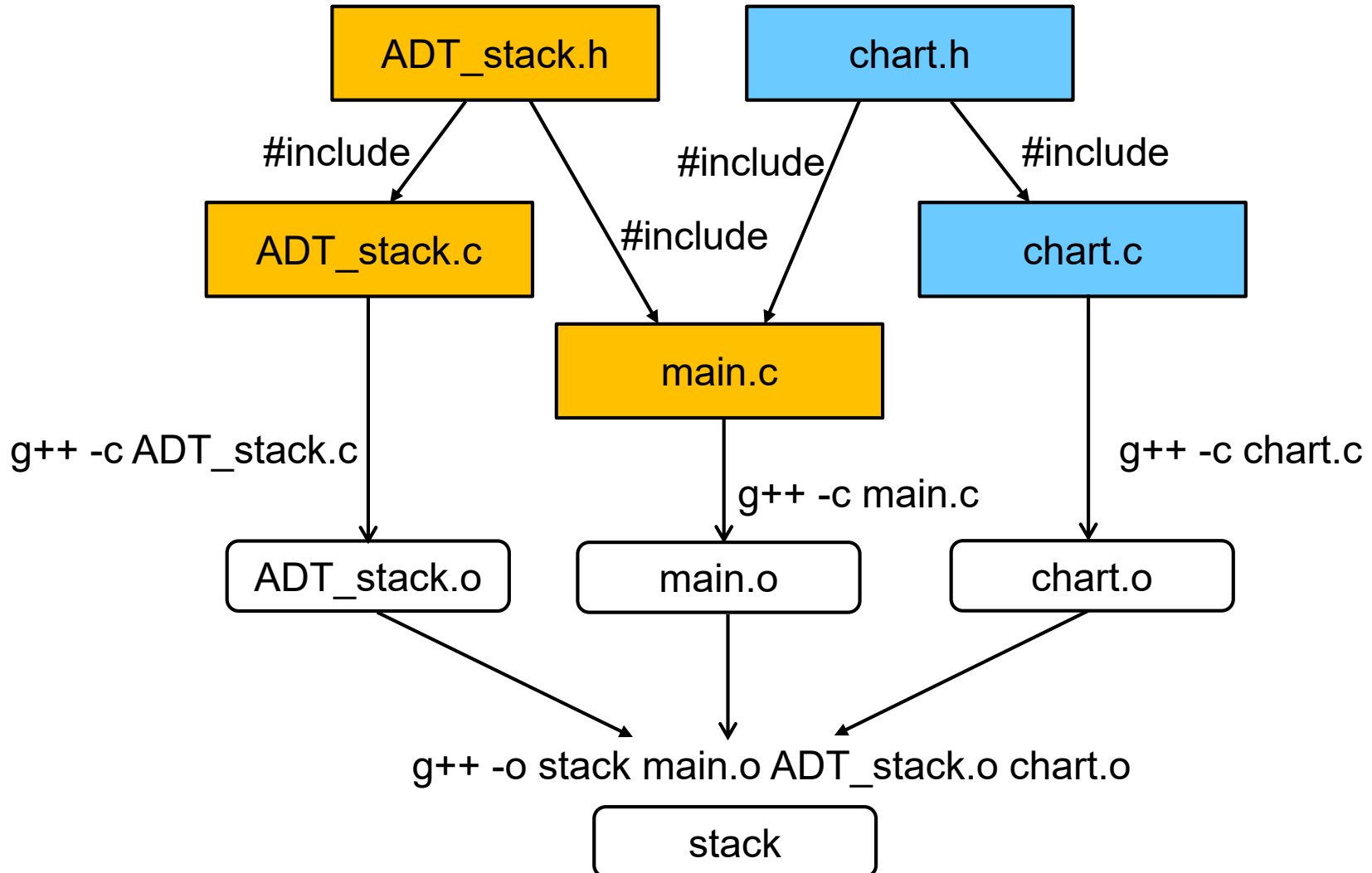
2017-09-20



File Structure and Compilation Procedure

Your code

provided



Edit Makefile

```
[REDACTED]  
ADT_stack.o: ADT_stack.c  
    g++ -c ADT_stack.c  
  
main.o: main.c  
    g++ -c main.c  
  
all: ADT_stack.o [REDACTED] main.o  
    g++ -o stack main.o ADT_stack.o [REDACTED]  
  
run: all  
    ./stack > chart.html  
  
clean:  
    rm -rf *.o stack
```

Download chart.h chart.c,main.c

- Download chart.zip

- Extract into your folder (three files are extracted, chart.h chart.c,main.c)
- After that, enter 'ls' command

- ◆ You can see the following in terminal



A terminal window showing the output of the 'ls' command. The output is: ADT_stack.c ADT_stack.h chart.c chart.h main.c Makefile. Three red boxes are drawn around the output: one around 'ADT_stack.c ADT_stack.h', one around 'chart.c chart.h', and one around 'main.c'. Arrows point from text labels to these boxes: 'You have already coded (if you didn't, do right now)' points to the first box, 'Provided by website' points to the second box, and 'Your homework (partially provided)' points to the third box.

```
ADT_stack.c ADT_stack.h chart.c chart.h main.c Makefile
```

You have already coded
(if you didn't, do right now)

Provided by website

Your homework
(partially provided)

Print student list in forward way (this code is provided, just run)

```
// ADT Stack
#include <stdio.h>
#include "ADT_stack.h"
#include "chart.h"

// #define REVERSE 0 // reverse
```

This list has to be commented

```
int main() {

    // new type definition
    typedef struct {
        char name[20];
        int score;
    } STD;

    // prepare 5 data
    STD student[5] = {
        {"James", 95},
        {"Yoosoo", 87},
        {"Paul", 93},
        {"Peter", 76},
        {"Park", 100}
    };
};
```

The right html file is generated by using code below

```
#ifndef REVERSE
generate_chart_header();
//          me          my boss          my score
generate_chart_node(student[0].name, student[0].name, student[0].score);
generate_chart_node(student[1].name, student[0].name, student[1].score);
generate_chart_node(student[2].name, student[1].name, student[2].score);
generate_chart_node(student[3].name, student[2].name, student[3].score);
generate_chart_node(student[4].name, student[3].name, student[4].score);
generate_chart_footer();
#else

#endif

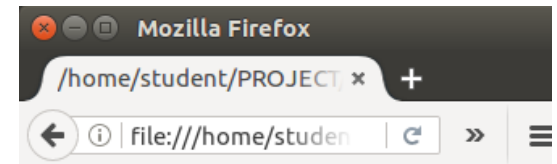
return 0;
}
```

On terminal, type the following:

make all
make run

chart.html

Will be created, open it with browser



Print student list in reverse way (your home, fill out the blank box)

```
// ADT Stack
#include <stdio.h>
#include "ADT_stack.h"
#include "chart.h"
```

```
#define REVERSE 0 // reverse
```

Delete comment

```
int main() {
    // new type definition
    typedef struct {
        char name[20];
        int score;
    } STD;

    // prepare 5 data
    STD student[5] = {
        {"James", 95},
        {"Yoosoo", 87},
        {"Paul", 93},
        {"Peter", 76},
        {"Park", 100}
    };
};
```

```
#ifndef REVERSE
generate_chart_header();
//
generate_chart_node(student[0].name, student[0].name, student[0].score);
generate_chart_node(student[1].name, student[1].name, student[1].score);
generate_chart_node(student[2].name, student[2].name, student[2].score);
generate_chart_node(student[3].name, student[3].name, student[3].score);
generate_chart_node(student[4].name, student[4].name, student[4].score);
generate_chart_footer();
#else
```

Fill out code

```
// start here, for homework
// Stack Creation
```

```
// push them
int i;
for(i=0; i<5; i++) {
```

```
// pop them
STD* boss=NULL; // backup previous boss
STD* std;
generate_chart_header();
while(
```

```
) {
    //
}
generate_chart_footer();
```

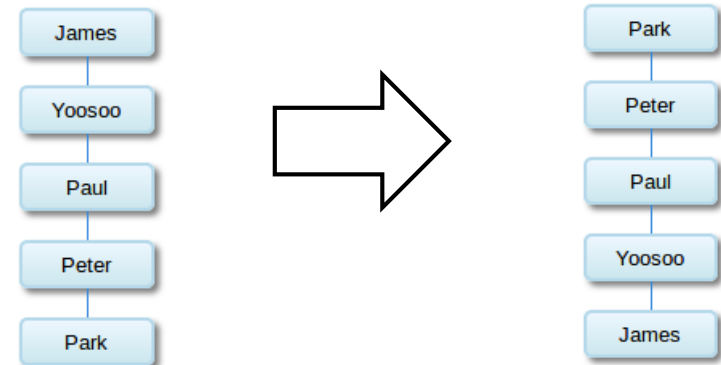
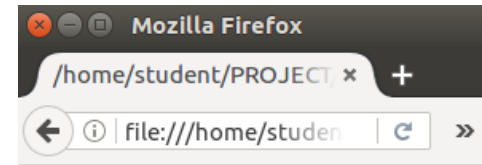
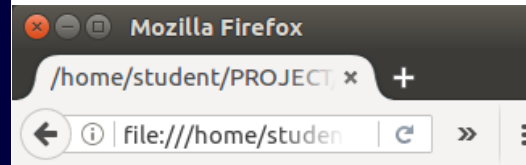
```
#endif
return 0;
}
```

On terminal, type the following:

make all
make run

chart.html

Will be created, open it with browser, you can see the reversed student list



- Korean student needs to submit two files, into ABEEK website
 - (1) Source code:
 - ◆ Compress your homework folder, named hw1_[id].zip
 - For example, **hw1_20161235.zip**
 - (2) Report
 - ◆ In addition, **attach the report** (Microsoft word format) to explain your homework in terms of implementation.
- Foreign students have to mail me directly with these two files as attachment
 - boltanut@knu.ac.kr



**Kyungpook National University /
Daejin Park**

**Cloud-Connected IoT System Platform Lab.
<http://CCIoTLab.com/come331>**

To be continued ...