TI DSP, MCU 및 Xilinx Zynq FPGA 프로그래밍 전문가 과정

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5 일차

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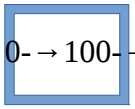
Stack 연결리스트

```
#include<stdio.h>
#include<malloc.h>
#include<stdlib.h>
#define EMPTY 0

struct node{
	int data;
	struct node *link;
};

typedef struct node Stack;

Stack *get_node()
{
	Stack* tmp;
	tmp = (Stack*)malloc(sizeof(Stack));
	tmp->link=EMPTY;
	return tmp;
}

void push(Stack **top, int data)
{
	Stack *tmp;
	tmp = *top;
```

```
        *top = get_node();
        (*top)->data = data;
        (*top)->link = tmp;
}

int pop(Stack **top)
{
        Stack *tmp;
        int num;
        tmp = *top;
        if(*top == EMPTY)
        {
                printf("Stack is empty!!!\n");
                return 0;
        }

        num = tmp->data;
        *top = (*top)->link;
        free(tmp);
        return num;
}

int main(void)
{
        Stack *top = EMPTY;
        push(&top,10);
        push(&top,20);
        push(&top,30);
        printf("%d\n",pop(&top));
        printf("%d\n",pop(&top));
        printf("%d\n",pop(&top));
        printf("%d\n",pop(&top));
        return 0;

}
```

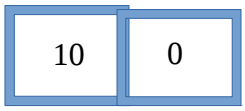
Main Stack

Top 의주소 1000



top

Heap

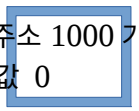


100

data link

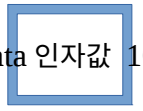
Push

top 의주소 1000 가리키는값 0



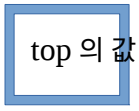
top

data 인자값 10

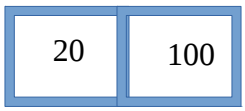


data

top 의 값 0



tmp

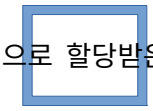


200

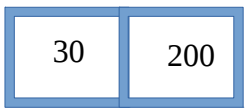
data link

Get_node

Heap 에 malloc 으로 할당받은 주소 100



tmp

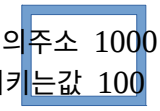


300

data link

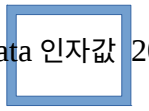
Push

top 의주소 1000 가리키는값 100



top

data 인자값 20



data

top 의 값 100

tmp

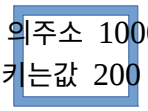
Get_node

Heap 에 malloc 으로 할당받은 주소 200

tmp

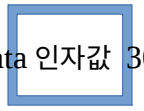
Push

Top 의주소 1000 가리키는값 200



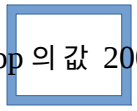
top

data 인자값 30



data

top 의 값 200



tmp

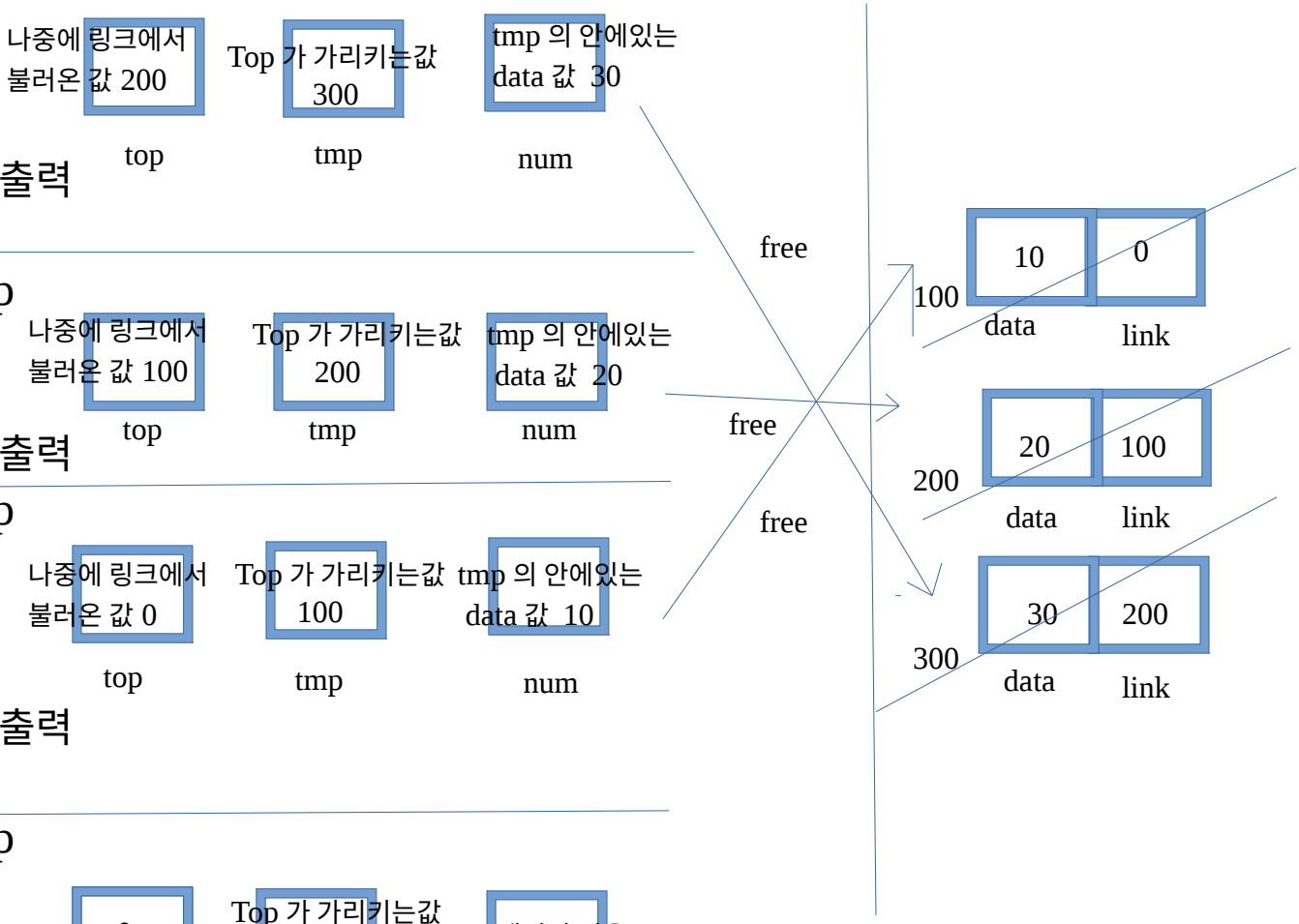
Get_node

Heap 에 malloc 으로 할당받은 주소 200

tmp

Pop

Heap



Stack is empty!!!출력하고

0 출력