TI DSP, MCU 및 Xilinx Zynq FPGA 프로그래밍 전문가 과정

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5 일차

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Queue 연결리스트

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

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

typedef struct node queue;

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

void enqueue(queue** head, int data){

    if(*head == NULL)
    {
        *head = get_node();
        (*head)->data = data;
        return;
    }
    enqueue(&(*head)->link,data);
```

```c
}

queue* dequeue(queue* head,int data){

    queue* tmp = head;

    if(tmp ==NULL)
    printf("There are no data that you delete\n");

    if(head->data != data)
    head->link = dequeue(head->link, data);

    else
    {
        //queue *res = head->link;
        printf("Now you delete %d\n", data);
        free(tmp);
        return head->link;
    }
    return head;

}

void print_queue(queue* head){
    queue* tmp = head;

    while(tmp)
    {
        printf("%d\n",tmp->data);
        tmp = tmp->link;
    }
}

int main(void){
```
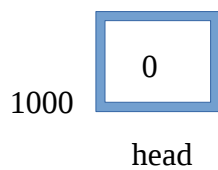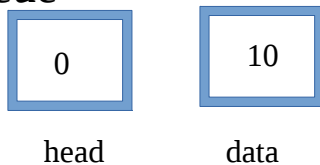
```
    int i;
    queue* head = NULL;
    srand(time(NULL));
    for(i = 0; i < 3; i++)
    {
        enqueue(&head, (i + 1) * 10);
    }
    print_queue(head);
    head = dequeue(head,20);
    print_queue(head);
    return 0;
}
```
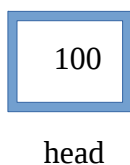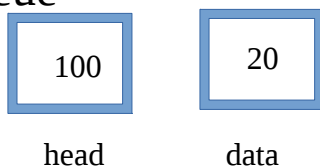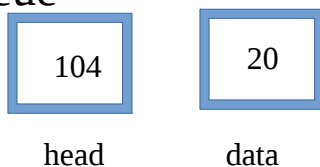
Main

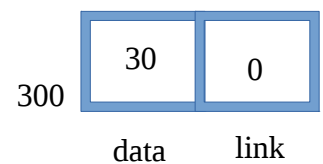| 0 |
|---|

1000

head

Enqueue

0

head

10

data

Heap

10	200

100

data   link

Get_node

100

head

20	300

200

data   link

Enqueue

100

head

20

data

30	0

300

data   link

Enqueue

104

head

20

data

Enqueue

0		20
head		data

Get_node

200
tmp

Enqueue

200		30
head		data

Enqueue

204		30
head		data

Enqueue

0		30
head		data

Get_node

300
tmp

Print_queue

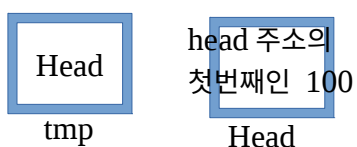| Head		head 주소의 첫번째인 100
tmp		Head
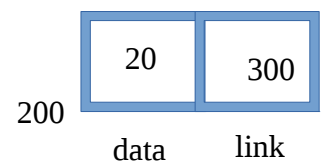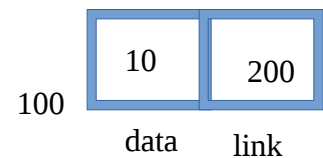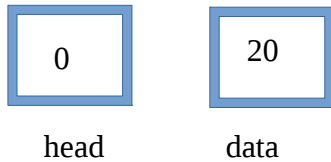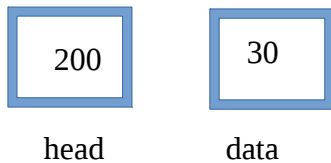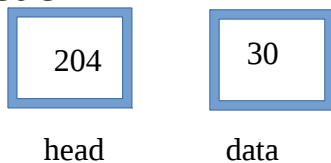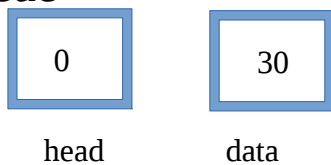
While(tmp 가 0 이아니면)

Printf(tmp 의값은 주소가 들어있는데 주소안에 가리키는 data)

$$(tmp \rightarrow data)$$

tmp = tmp → link   tmp 가 가리키는곳의 link 를 tmp 에 대입한다

(연결된곳의 다음을 알려준다)

루프 While 을 돌면서 tmp 의 가리키는값이 없어지면 종료한다