

## Computer Architecture Hw 2

1. Convert the C code to the MIPS program as much as possible (45 pts). Please first write the register mapping (15 pts).

```
/* This program displays the factorial values from 1 to N. N is entered by the user. */
#include<stdio.h>

int factorial(int number)
{
    int i=1, fact=1;
    for(i=1 ; i<number ; i++)
    {
        fact=fact*i;
    }

    return fact;
}

void display(int number)
{
    int i=1, fact;
    for(i=1 ; i<number ; i++)
    {
        fact=factorial(i);
        printf("%d \n",fact);
    }
}

void main()
{
    int number;
    printf("Enter a number:");
    scanf("%d",&number);
    display(number);
}
```

2. Convert the C code to the MIPS program as much as possible (25 pts). Please first write the register mapping (15 pts).

```
#include<stdio.h>

void array_copy(int *source,int *destination,int size)
{
    int i=0;
    for(i=0 ; i<size ; i++)
    {
        destination[i]=source[i];
    }
}
```

```
}  
  
void array_print(int *array,int size)  
{  
    int i=0;  
    for(i=0 ; i<size ; i++)  
    {  
        printf("%d \n",array[i]);  
    }  
}  
  
void main()  
{  
    int a[10]={1,2,3,4,5,6,7,8,9,10};  
    int b[10];  
  
    array_copy(a,b,10);  
    array_print(a,10);  
    array_print(b,10);  
}
```

Deadline: 15. November. 2011, 23.59

Submission: Please submit your homework to the Online Course System. Other submissions will **NOT** be graded. Please contact Esra Ruzgar for further questions.

Homework Policies:

1. Cheating is strongly discouraged.
2. Late homeworks will be graded as 0.
3. Please comment your source codes.

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