

ICS 233 – Spring 2009

Computer Architecture and Assembly Language

Programming Assignment 1

Write a MIPS assembly program that does the following:

- a) Ask the user to enter number of rows, R , and read it.
- b) Ask the user to enter number of columns, C , and read it.
- c) Ask the user to enter an $R \times C$ matrix of signed integers.
- d) Print a menu from which the user can select one of the following options:
 1. Print the entered array
 2. Print a row
 3. Print a column
 4. Exit the program

Note that row numbers and column numbers are assumed to start from 0. A sample execution of the program is shown below:

```
Enter number of rows:2
Enter number of columns:3
Enter an array of 2x3 integers:
1
2
3
4
5
6
Select one of the following functions:
  1. Print the entered array
  2. Print a row
  3. Print a column
  4. Exit the program
```

If the user selects the first option, then the following should be displayed:

```
Array of 2x3 integers is:
1 2 3
4 5 6
```

If the user selects the second option, then the following should be displayed:

```
Enter a row number: 1
Row 1 is:
4 5 6
```

If the user selects the third option, then the following should be displayed:

```
Enter a column number: 2
Column 2 is:
3
6
```

Submission Guidelines:

All submissions will be done through WebCT.

Submit the source code of the program. Make sure that your program is well documented.

Grading Policy:

The grade will be divided according to the following components:

- Correctness of code: program works properly and produces correct results
- Completeness of code: all cases are handled properly
- Documentation of code: program is well documented

Late Policy:

The programming assignment should be submitted on the due date by midnight. Late submissions are accepted, but will be penalized 5% for each late day and for a maximum of 3 late days (or 15%). Assignments submitted after 3 late days will not be accepted.