A3 (30 marks)

Objectives: Memory Access and System Call

Q1. Write a MIPS program that prompts the user to enter *one string* with 3 characters and then displays them in reverse order.

Sample run

```
Enter three characters: xyz
Your characters in reverse order: zyx
```

Q2. Write a MIPS program that prompts the user to enter a 3-digit decimal number and finds the sum of the 3 digits. Assume the user enters valid input. *Hint*: what is the hex decimal value for ASCII '0'?

Sample run

```
Enter a 3 digit number: 999
The sum of the 3 digits is: 27
```

Q3. Write a MIPS program that prompts the user to enter a 3-digit hex number, where all digits are from A-F (capital letters only), and then displays the decimal equivalent. Assume the user enters valid input. *Hint*: what is the hex decimal value for alphabets?

Sample run

```
Enter a 3-digit hex number (all digits must be from A to F): ABC
The decimal equivalent is: 2748
```

Note: if any of your solutions is unreasonably long (e.g. twice as many instructions as another solution would need), then you might lose some marks for the extra instructions.

Submission Instructions: Compress all your files (including the assembly files) into one zip file and submit it **to Canvas.** You can resubmit an assignment, but the new submission overwrites the old one and receives a new timestamp.