
[Loops] in MIPS Assembly

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1. (100 pts) Write four MIPS–Assembly programs to implement the following mathematical expressions (use only the "LOOP approach": see lecture notes):

   (a) (1 loop) : $\sum_{a=1}^{2}[a]$

   (b) (2 loops) : $\sum_{b=1}^{2}\sum_{a=1}^{2}[a+b]$

   (c) (3 loops) : $\sum_{c=1}^{2}\sum_{b=1}^{2}\sum_{a=1}^{2}[a+b+c]$

   (d) (4 loops) : $\sum_{d=1}^{2}\sum_{c=1}^{2}\sum_{b=1}^{2}\sum_{a=1}^{2}[a+b+c+d]$

   Place the result, of each mathematical expression, in the console of MARS.

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- **At the end of each problem clearly state the formula (expression) and the final result (decimal)**
- **In the report include a partial screenshots of the console AND the Register–Plane with the final result (decimal)**.

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How to Solve Summations
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  https://youtu.be/KbvD6FlIJGU

  https://youtu.be/vGQMmpTInPU

  https://youtu.be/RCQfH2lUQ3k
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- Prepare a report (PDF) taking in to account the following guidelines.
  1. Present the problem and the Assembly–Code
     (a) The programs should be simple and well– documented
     (b) The programs should be modularized
     (c) Detailed comments are necessary
  2. Indicate if the program runs successfully according to specifications
  3. Discuss the result and clearly state the result in decimal.
- How can I submit my software assignment?

  The homework–report should **ALL** be written ... using only a word processor (Microsoft WORD, ..., or TEX/LATEX). **Absolutely no handwriting/handgraphing and photographing**. Writing the report follow the sample homework given in CANVAS (Files).

  ... Upload the report in PDF to CANVAS

- Late submission policy:

  LATE WORK (assignment) POLICY. You lose 50% each day an assignment is late and after 2 days, it will not be accepted.

- Grading:

Documentation	Excellent (3)	Average (2)	Low (1)
Functionality	Compiles fine (7)	Compiles warnings (4)	Does not Compile (2)
Delivery	On–time (%100)	Next–Day (50%)	After two days (%20)