Faculty of Computer Science and Information Technology

TMF1214 Computer Architecture

Semester 2, 2017/2018

Group Project

Title	**Programmer Calculator**
Type	This project is to be conducted in a group of MAXIMUM **SIX (6)**. You are free to choose your own group members within the same lecture Group.
Objectives	The objectives are: • To understand the number systems used in computer architecture; and • To familiar with assembly programming language.
Tasks	In this project, each group is required to design and develop a command line interface (CLI) version of programmer calculator using assembly language. The functions of this calculator are: 1. Allows conversion between decimal number, 16-bit binary number and hexadecimal number system 2. Able to perform Boolean operations which include AND, OR, XOR, and NOT on the input Prepare a **15-minute presentation** that explains the design, functions and how to use calculator, and lesson learned
Deliverables	The softcopy of the: 1. Assembly files (source code) for the calculator 2. Presentation slide in PowerPoint format
Marks	This project is worth **20 %** of all marks for TMF 1214 Computer Architecture course.
Due date	**4th May 2018 (Friday) by 1600 hour**
Extension	**No extension of the due date will be given**. If, due to circumstances beyond your control, your group are unable to complete the assignment by the due date, your group should submit the incomplete assignment presented in a professional manner and complete a request for special consideration.
Submission	Submit the deliverables through **eLEAP**. Use the link that is provided for your group to do so. Allow your group an ample time to learn how to perform the online submission through **eLEAP** to avoid any submission problem. One group should submit only **a copy of the assembly files and presentation slide.**

Lateness policy	Late assignments may be graded as Fail and awarded zero (0) mark.
Plagiarism policy	The final submission must be identifiably your own group work.
Assessment	Components • Programmer Calculator 10 % • Presentation & slide 10 % **TOTAL MARKS 20%**
Miscellaneous	You may be asked or called to explain your work as a team. Hence be prepared and all the member are required to participate equally.

Assessments Rubric:

Criteria	Unsatisfactory [0 – 2 marks]	Fair [3 – 5 marks]	Good [6 – 8 marks]	Excellent [9 – 10 marks]
A. Programmer Calculator [50%]				
Number system Conversion	• Able to covert user input from **ONE number system to any ONE number system**	• Able to covert user input from any **ONE number system to any TWO number systems**	• Able to convert user input from any **TWO number systems to any other number systems**	• Able to convert all user input from any number systems to any other number systems
Interface	• No selection for number system on user's input • Hard to use interface	• No selection for number system on user's input • Easy to use user interface • Require re-execution of the calculator to allow switching between functions / operations / number systems	• Allow limited user selection on the number system to be used • Easy to use user interface • Require some re-execution of the calculator to allow switching between functions / operations / number systems	• Allow user to select any number system to be used. • Easy to use user interface / program iteration
Error handling	• No error handling • Unable to execute the programs	• Minimum error handling. • Unable to execute once error occur.	• Consider most of the possible error inputs • Able to executes in most of the case/scenario	• Well error handling for all user inputs. • Execute without errors
B. Presentation Slide [25%]				
Visual appeal	• There are many errors in spelling, grammar and punctuation. • The slides were difficult to read and • No visual appeal.	• There are many errors in spelling, grammar and punctuation • Minimal effort made to make slides appealing or too much going on.	• There are some errors in spelling, grammar and punctuation. • Significant visual appeal.	• There are no errors in spelling, grammar and punctuation. • Visually appealing/engaging
Content	• Too much information was contained on many slides • The presentation was a brief look at the topic but many questions were left unanswered.	• Too much information was contained on many slides. • The presentation was informative but several	• Too much information on two or more slides. • The presentation was a good summary of required evaluations.	• Information is clear and concise on each slide. • The presentation was a concise summary of the

	• Majority of information irrelevant and significant points left out.	elements went unanswered. • Much of the information irrelevant; coverage of some of the required evaluations.	• Most important information covered; little irrelevant info.	required evaluations with all questions answered. • Comprehensive and complete coverage of information.
C. Presentation [25%]				
Skill	• Minimal eye contact by more than one member focusing on small part of audience. • The audience was not engaged. • Majority of presenters spoke too quickly or quietly making it difficult to understand. • Inappropriate/disinterested body language.	• Members focused on only part of audience. • Sporadic eye contact by more than one presenter. • The audience was distracted. • Speakers could be heard by only half of the audience. • Body language was distracting	• Most members spoke to majority of audience; steady eye contact. • The audience was engaged by the presentation. • Majority of presenters spoke at a suitable volume. • Some fidgeting by member(s).	• Regular/constant eye contact. • The audience was engaged, and presenters held the audience's attention. • Appropriate speaking volume & body language.
Preparedness/ Participation/ Group Dynamics	• Unbalanced presentation or tension resulting from over-helping. • Multiple group members not participating. • Evident lack of preparation/rehearsal. Dependence on slides.	• Significant controlling by some members with one minimally contributing. • Primarily prepared but with some dependence on just reading off slides.	• Slight domination of one presenter. Members helped each other. • Very well prepared.	• All presenters knew the information, participated equally, and helped each other as needed. • Extremely prepared and rehearsed.