Institiúid Teicneolaíochta Cheatharlach
INSTITUTE of TECHNOLOGY CARLOW
At the Heart of South Leinster

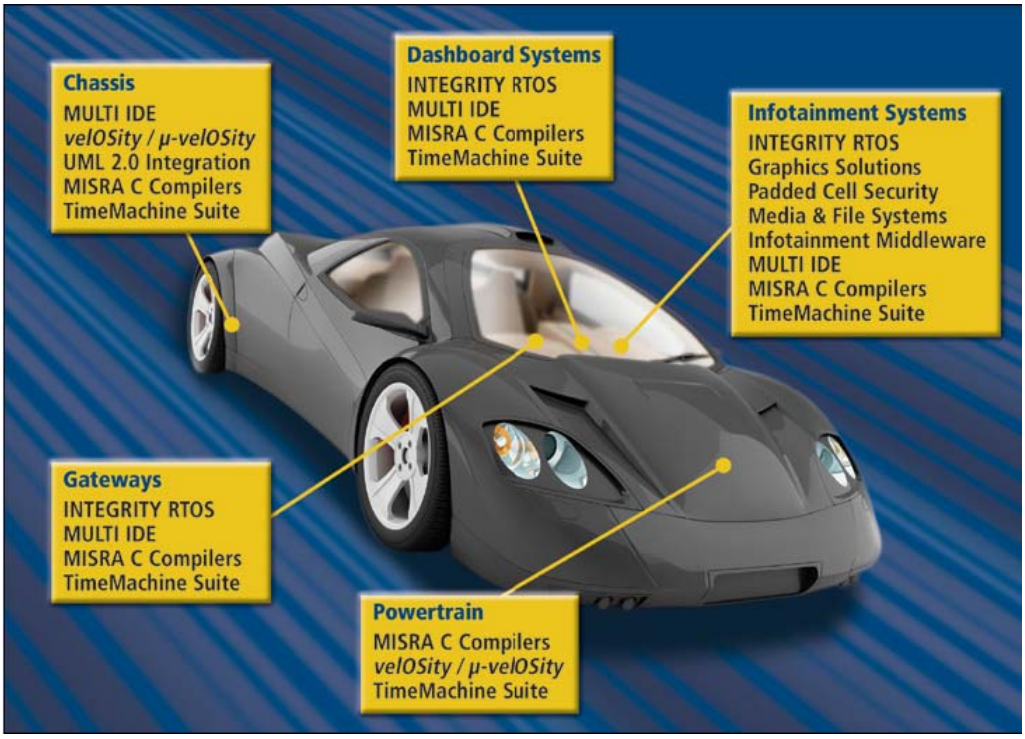
Institute of Technology, Carlow

B.Sc (Honour) in Software Engineering

Project Plan

For

MISRA C Code Compliance Checker Project



Student Name: **Mingjun Zhou**

Student ID: **C00094981**

Supervisor: **Dr. Christophe Meudec**

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1. Introduction

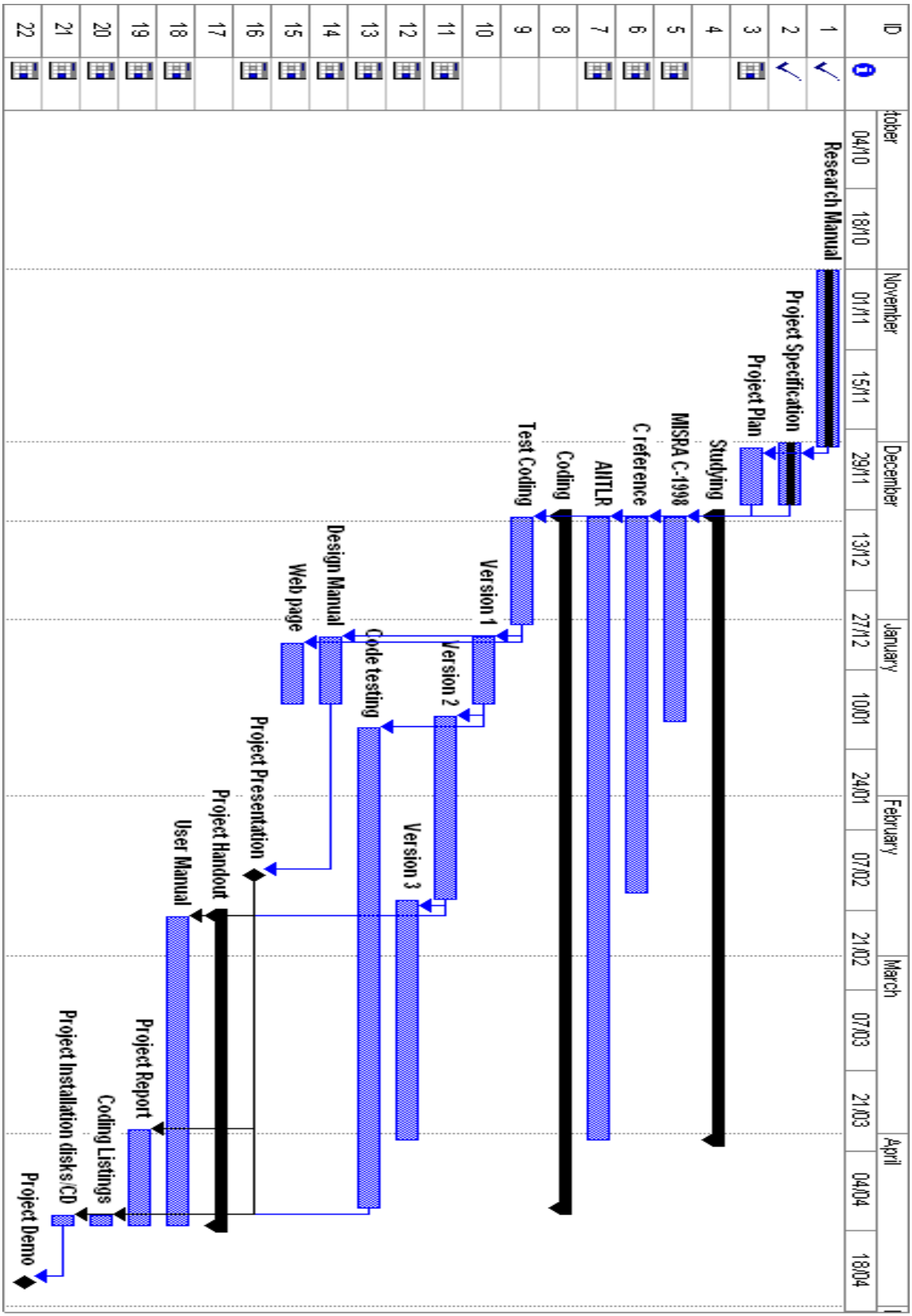
This plan is made for my final year project which is called MISRA C Code compliance Checker.

For this project, I will use third part software called ANTLR, and JAVA as my programming language. And the tool will provide command line prompt to implement my tool.

2. Plan table

		Task Name	Duration	Start	Finish	Predecessors
1	✓	Research Manual	23 days?	Sun 01/11/09	Tue 01/12/09	
2	✓	Project Specification	9 days	Tue 01/12/09	Fri 11/12/09	1
3		Project Plan	8 days?	Wed 02/12/09	Fri 11/12/09	1
4		**Studying**	**80 days?**	**Mon 14/12/09**	**Thu 01/04/10**	
5		MISRA C-1998	27 days?	Mon 14/12/09	Mon 18/01/10	3,2
6		C reference	49 days?	Mon 14/12/09	Wed 17/02/10	3
7		ANTLR	80 days?	Mon 14/12/09	Thu 01/04/10	3
8		**Coding**	**88 days?**	**Mon 14/12/09**	**Tue 13/04/10**	
9		Test Coding	15 days?	Mon 14/12/09	Fri 01/01/10	3
10		Version 1	10 days?	Mon 04/01/10	Fri 15/01/10	9
11		Version 2	24 days?	Mon 18/01/10	Thu 18/02/10	10
12		Version 3	30 days?	Fri 19/02/10	Thu 01/04/10	11
13		Code testing	60 days	Wed 20/01/10	Tue 13/04/10	10
14		Design Manual	10 days?	Mon 04/01/10	Fri 15/01/10	9
15		Web page	9 days?	Tue 05/01/10	Fri 15/01/10	9
16		Project Presentation	0 days?	Mon 15/02/10	Mon 15/02/10	14
17		**Project Handout**	**40 days?**	**Mon 22/02/10**	**Fri 16/04/10**	
18		User Manual	40 days?	Mon 22/02/10	Fri 16/04/10	16,11
19		Project Report	13 days?	Wed 31/03/10	Fri 16/04/10	16
20		Coding Listings	2 days?	Thu 15/04/10	Fri 16/04/10	16,13
21		Project Installation disks/CD	2 days?	Thu 15/04/10	Fri 16/04/10	16,13
22		Project Demo	0 days	Tue 27/04/10	Tue 27/04/10	21

3. Ganttchart



4. Studying Stage

The studying stage will start from now to end of March, and there are 3 big parts which I need study along with my project.

- C reference studying
  i. The syntax of C
  ii. Structure of C
  iii. Etc.
- MISRA C-1998 Rules studying understanding
  i. Rules for 1st version,
  ii. Rules for 2nd version
  iii. Rules for 3rd version
- ANLTR 3.0 release and ANLTRworks 1.3.1 studying
  i. The syntax of ANLTR
  ii. Structure of ANLTR
  iii. How does Lexer and Parser works and how to make proper grammar for my project.
  iv. Etc.

5. Coding

The coding part will start right away from next week. This part is most important part in my project plan. I will do such steps as follow:

Firstly, I am going to try some coding in ANlTR to get familiar with it and its IDEs ANLTRworks. For this step, I am going to take half month.

Secondly, after step 1 and MISRA C rules studying and understanding, I will start working on the first version of my project. I will try to put some simple rules into it. Those rules are seems easy to implement with my tool. Such as rule Number: 9, 14, 119-127.

Rule 9: Comments shall not be nested.

Rule 14: The type *char* shall always be declared as *unsigned char* or *signed char*.

Rule 119: The error indicator *errno* shall not be used.

Rule120: The macro offsetof, in library <stddef.h>, shall not be used.

Rule 121: <locale.h> and the *setlocale* function shall not be used.

Rule 122: The *setjmp* macro and the *longjmp* function shall not be used.

Rule123: Rule 123 (required): The signal handling facilities of <signal.h> shall not be used.

Rule 124: The input/output library <stdio.h> shall not be used in production code.

Rule 125: The library functions *atof, atoi* and *atol* from library <stdlib.h> shall not be used.

Rule 126: The library functions *abort, exit, getenv* and *system* from library <stdlib.h> shall not be used.

Rule 127: The time handling functions of library <time.h> shall not be used.

Thirdly, based on how well the first version goes, I will add more complicated rules for 2nd and 3rd version. And so on.

2nd version aimed rules:

Rule 11: Identifiers (internal and external) shall not rely on significance of more than 31 characters. Furthermore the compiler/linker shall be checked to ensure that 31 character significance and case sensitivity are supported for external identifiers.

Rule 17: *typedef* names shall not be reused.

Rule 20: All object and function identifiers shall be declared before use.

Rule 21: Identifiers in an inner scope shall not use the same name as an identifier in an outer scope, and therefore hide that identifier.

6. Design Stage

Along the coding part, I will also start with design of the whole project. The parts of it would be included as follow:

- Domain Modelling
- OOA&D
- UML

7. Testing Stage

After each small part of coding and the separate versions, the code testing will be involved. The code testing design will follow the coding stage.

8. Repeating part 3 and 5 until finish

9. Document preparation

Along design and coding stages, the documents will be doing at the same time.

Design document	After the first stage of studying and coding
Web page	Same as Design document
User Manual	After 2nd version and code testing
Project Report	Before 3rd version finish
Coding Listings	After the code testing stage
Project installation disk/CD	Same as coding listings