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Vanier College
Faculty of Science and Technology
Computer Science Department

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Course Title: System Development   **Semester**:   W-22
Course Number: 420-436-VA, all sections   **Teacher:**   Alex Vilvert
                                                 Phone:

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Individual Assignment #1 (38 marks)
Due by email by 6 p.m. on due date

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For this assignment:

- (2 marks) For each page that you hand in, design the page to be clear, straightforward, easy to understand, and professional looking.
- (2 marks) Submit one PDF containing all relevant pages. Make sure that they have appropriate headers, footers and page numbers. The file name should be **LastName_FirstName_Section_TeamName_Ass.1.pdf**
- (2 marks) On the cover page, in addition to the assignment number, include the following certification, and the date submitted. It should look something like this:

    I, [Print or type your name and student ID #] certify that this assignment is my own work.

    _____ (signature). Date: _____

Project planning

If you have never used MS Project before, you should go through a tutorial. You can find several on the Internet. You may also use ProjectLibre (https://www.projectlibre.com) for this assignment.

Below is a work breakdown structure for a simple software development project.

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Work Breakdown Structure for Software Development Project

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Task No.	Task Name	Duration (wks)	Predecessors
1	Collect requirements	2	--
2	Analyze business processes	1	--
3	Analyze data	1	--
4	Design system processes	4	1, 2
5	Design classes and database	2	1, 3
6	Design screens	3	4, 5
7	Design reports	4	4, 5, 6
8	Design tests	3	7
9	Present prototype	1	6, 7
10	Re-evaluate requirements	2	9
11	Program all features	5	10
12	Test	6	11
13	Analyze and design documentation	3	9, 10
14	Write documentation	3	13
15	Debug and refactor	2	11, 12
16	Test	2	15
17	Deploy	1	14, 16

For this project, you have four human resources:

- Dimitri: an analyst, programmer and designer, who can also test and write documentation.
- Sergei: a programmer, who can also collect and evaluate requirements, design classes, databases, screens and reports.
- Annie: a programmer/analyst, who can also deploy software at the customer's site.
- Gérard: a programmer and tester

Create an MS Project (or other project planning software) project as follows:

1. (2 marks) Enter the tasks listed in the work breakdown structure.
2. (4 marks) Assign tasks to the available resources so that they can work in parallel as much as possible, and that they can complete the project in as few weeks as possible. Make sure that you assign people only to tasks for which they are qualified. You can assign only one person to a given task.
3. (1 mark) Start date is September 16th, 2021.
4. (2 marks) Create a project Gantt chart, showing the WBS. Remember that the Gantt chart and WBS must be side-by-side to be understandable. Make the chart easy to read and understand.
5. (2 marks) List the tasks on the critical path.
6. (1 mark) Format this Gantt and WBS chart to fit **on one page**. Include a PDF of the chart as part of your assignment submission.
7. Save your project.

Now, using the same project, but **saving to a different file**:

8. Reassign resources to the various tasks, as follows:
   a. Make sure that task durations change appropriately whenever the number of resources change.
   b. There are now 4 more people working on the project: Angela, who has the same qualifications as Sergei, Howard, who has the same qualifications as Annie, Julie who has the same qualifications as Dimitri, and Fiacre who has the same qualifications as Gérard.
   c. (2 marks) Re-assign the tasks. **You can now assign more than one person to a task**. Change the duration of the tasks accordingly.
9. (1 mark) Level the resources, without splitting or adjusting individual assignments.
10. (2 marks) Include a PDF of the chart as part of your assignment submission. You may use more than one page.
11. (2 marks) List the tasks on the critical path.
12. Save your project.
13. (5 marks) In a few paragraphs (more than one), describe **in detail** how the addition of Angela, Howard, Julie and Fiacre has changed the project.
14. (2 marks) What are the end dates for the two projects? What is the duration of the two projects?
15. (5 marks) In a few paragraphs (more than one), describe **in detail**, how the critical path has changed. Explain why it has changed or why it has not changed.
16. (1 mark) Submit ONE PDF file for this assignment, which includes the answer to the various questions, as well as the Gantt and WBS charts.

Total marks available: 38 marks