UNIVERSITY OF JOHANNESBURG

Academy of Computer Science & Software Engineering

IFM01B1/IFM1B10: Introduction to Data Structures (VB)

GROUP ASSIGNMENT

Due: 23 September 2022, **12:00**

INSTRUCTIONS

Each class must contain the following information:

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' ************************************************************
' Team Number: assigned to team
' Team Member 1 Details: Surname, Initials (Student #)
' Team Member 2 Details: Surname, Initials (Student #)
' Team Member 3 Details: Surname, Initials (Student #)
' Team Member 4 Details: e.g. Smith, J (202000001)
' Practical: Team Project
' Class name: (name of the class)
' ************************************************************
```

All students must be present through the use of an audio recording. All team members need to be heard in the presentation, various online tools can be used to combine audio and video recordings into a single file for submission.

Failure to present as a team will result in an automatic 50% deduction unless valid arrangements have been made with the lecturer prior.

Failure to complete the peer evaluation will also result in no marks being rewarded. How the peer evaluation will be explained closer to the time of the project.

PRACTICAL QUESTION

For the project visit the following website to give your team and idea on what to create:

http://www.un.org/millenniumgoals/

In your team, design and develop a Visual Basic application that could potentially be used to address one of the eight Millennium Goals.

The application must, at the very least, demonstrate polymorphism.

All team members must be present to demonstrate the system to their assessor - be prepared to explain what the system does and how it is meant to address the Millennium Goal. As the submission time is not a normal practical session all team need to provide either a single audio recording that explains the project all team members need to be part of the presentation. There are many online tools that can be used to combine

recordings into a single file. The size of the recording cannot exceed 20 MB. The audio stream must not exceed 128 Kbit per second quality.

For the final submission there need to be the project file, the recording, and the design document all need to be uploaded to the **ifmgp** module on eve by a single group member.

For each additional unique (i.e. you cannot create 10 abstract methods to get 10 x 10 marks) programming concept you correctly apply and successfully demonstrate, you will be awarded additional marks, depending on its category. This practical assignment will be updated to reflect this category list at a later stage.

MARK ALLOCATION

Full design (this includes UML)	10
Audio presentation of the project	10
Applicability of Problem (does solution make sense for problem)	10
Polymorphism	30
Functions correctly	50
Presentation by team (description of problem, question, and answer)	10
Total	120
Bonus Marks - the unique inclusion of the following concepts (must be working and make sense to be used)	
Category A	
Shared, Utility methods, Constant, Enum	5
Category B	
Interface class, Abstract class, Overloading, Downcasting, DLL	10
Category C	
Save to file sequential	30
Category D	
Use of a source control tool (proof must be provided such as a URL to the repository)	30

As an example, a team receives a base mark of 80. In addition to their problem which shows how polymorphism can be correctly implemented (and why it SHOULD be implemented), the team has also opted to implement their project using the programming concepts Partial (Category A), Interface classes (Category B), and DLLs (Category B).

- If these concepts are all used validly and function correctly, an additional 25 marks will
- be awarded.
- Bonus marks are awarded once per concept type - implementing DLLs twice, for
- example, will only result in 10 marks (and not 20 marks)
- Individual marks will be calculated and transferred to each team member's Informatics

1B module - this mark will be calculated based on:

- The team mark (as calculated above)
- The team member's contribution to the project (as determined by the Peer Review)
- Submitting the Team Feedback