
ITRW 322 GROUP PROJECT

The goal of this project is to create an application that can be used in a virtual office environment. To this end, the following **minimum** requirements have to be met:

1. The project group must consist of **10 to 12** members;
2. The application must be able to:
 - a. Function in Windows 7, 8, or 10;
 - b. Send and receive data messages between two distinct systems **via the Internet**. The application must support a variety of standard data types, including:
 - i. Text;
 - ii. Still images;
 - iii. Video;
 - iv. Non-streaming audio, such as FLAC, AAC, or MP3;
 - c. Display the data types mentioned in point 2(b);
 - d. Encrypt and decrypt text messages;
 - e. Show and store conversations, i.e. sent and received messages can still be viewed offline;
 - f. Send voice notes;
3. The application should be user friendly;
4. The application should be able to function through a proxy; and
5. A user manual, in PDF format, must be included. The user manual should also describe the basic workings of all features in brief technical detail.

In addition to the above requirements, **a score of at least forty (40) must be obtained from the following features** (score per feature indicated in brackets); any features can be selected, so long as the sum of their scores is at least 40:

- [25]: The application has **real-time** video chat capabilities, i.e. it can be used to hold a coherent conversation between at least two people in real-time.
- [20]: A companion application, running on either Android, iOS or Windows Mobile, should be developed that can send messages to the primary application, as well as read messages sent from the primary application. The companion app should also be able to download all non-text files that are received.
- [15]: The companion app, if developed, can send commands to the machine running the primary application. The commands that can be sent should include:
 - View directory structure;
 - Open file or folder; and
 - Run simple commands using batch or command prompts.
- [10]: The primary application reduces the file size of video and audio files before sending them, without breaking them.
- [10]: Both the primary and companion applications, if developed, are aesthetically pleasing and appear professionally developed.
- [5]: The companion application, if developed, can send toast notifications.
- [5]: Primary application supports both concurrent and group conversations.

- [5]: The primary application reduces the file size of images before sending them.
- [5]: The primary application has background notification functions, such as tray balloons.
- [5]: The primary application has a browser based UI.
- [5]: Text messages are consistently received within 20 seconds of being sent.
- [5]: Primary application can be set up to control system power functions such as: shut down, restart, wake, timed shutdown, timed wake, and timed restart.

Mark allocation for application is as follows:

- | | |
|---|-----|
| • Minimum system requirements (points 1 to 4): | 50% |
| • Extra features (percentage according to working feature's score): | 40% |
| • User manual: | 10% |

Total mark allocation for project:

- | | |
|--------------------------------------|-----|
| • Application: | 85% |
| • Presentation during demonstration: | 15% |

Nota Bene:

- During demonstration both the primary application and the companion application, if included, **MUST WORK**. No code will be viewed or considered for evaluation.
- If the companion app is developed, you must bring your own device with the app preinstalled for demonstration purposes.
- The primary app must function on Windows as a standalone app. If any additional software is required for the application to run, it must be brought along for the demonstration.
- If the application makes use of an installer, a complete uninstaller should be included.
- If you wish to demonstrate using your own computer, please note that the Windows application must be demonstrated on a machine that accesses the Internet through the NWU network so that the proxy function can be tested.
- The technical descriptions in the user manual should be no longer than a paragraph each. The description should have the function as heading, briefly explain the problem, and then briefly explain how the problem was solved.
- No additional features are marked if the minimum requirements are not met. This means, for example, that it is pointless to develop the Android application if the primary application does not work, as the Android app will not be marked in that instance.
- Throughout the semester a number of progress reports will have to be submitted on eFundi. **All of these progress reports must be submitted; 10% will be subtracted from the final mark for every progress report that is not submitted on time.** It is the responsibility of the project leader to ensure that the reports are submitted on time.
- **Only the project leader submits work on eFundi.** If a new project leader is selected, the first item submitted by the new leader should indicate the change properly.

GUIDELINES FOR DISMISSAL OF PROJECT GROUP MEMBER

1. Each project group must have a project leader.
2. The project leader may dismiss a member from the project group in the event that:
 - a. There is a valid reason for the dismissal; and
 - b. The correct procedure has been followed in determining that dismissal is a reasonable response.
3. The following are the only reasons that are considered valid for dismissing a project group member:
 - a. The member fails to contribute where needed or required on a regular basis;
 - b. The member repeatedly and maliciously undermines the efforts of the group;
 - c. The member is wilfully and repeatedly absent from mandatory meetings as decided upon by the group and fails to contribute as a result; and
 - d. The member has requested to be transferred to another project group.
4. Should any of the reasons mentioned in 3(a), 3(b) or 3(c) be brought to the attention of the project leader, the leader should issue an immediate warning to the accused group member.
5. If the accused member continues to be accused of the transgressions mentioned in 3(a), 3(b) or 3(c), the group leader should contact the accused member as soon as possible and arrange for a hearing. The hearing is to be at the earliest possible time that the group leader, the accused member, as well as at least two other members of the group can be present. Should the accused member fail to appear at more than two (2) of these hearings, and there is no reasonable reason for the accused to be absent, the group may proceed with the accused's hearing in absentia.
6. At the hearing all relevant accusations must be discussed. During this discussion the accused member must be given a fair and reasonable chance to defend against the accusations.
7. Should the accused member be unable to reasonably defend against the accusations the project leader has the option to dismiss the accused member from the group. Dismissal requires that:
 - a. At least two other group members are present during the full length of the hearing to act as witnesses;
 - b. It is possible to distribute the dismissed member's work to other members; and
 - c. There is no workable alternative to dismissal.
8. In the event that the project leader is guilty of any of the transgressions mentioned in 3(a), 3(b) or 3(c), the group has the option of electing a new project leader. The new project leader should then follow the procedure as described in 5, 6, and 7 in dealing with the old project leader.
9. Any dismissed group member has the right to appeal the dismissal. The lecturer handles all appeals with regards to dismissals.
10. During the appeal the following will be required:
 - a. The group leader must provide evidence that the dismissed group member is potentially guilty of a transgression as mentioned in 3(a), 3(b) and 3(c). Evidence such as testimony from the group members, meeting notes, and signed schedule documents, will be considered sufficient;
 - b. The group leader must provide evidence that the correct procedure was followed in determining that the dismissal was reasonable. The testimony from all witnesses present at the hearing as described in 5, 6, and 7 will be considered sufficient; and
 - c. Any evidence brought by the dismissed member that refutes either 10(a) or 10(b).
11. In the event that the lecturer finds that the dismissal was unreasonable, or that workable alternatives exist, the dismissal may be overturned either completely, or in favour of any workable alternatives.
12. Should the dismissal stand the dismissed member is prohibited from joining any other project group.