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Assessment of Group Projects

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Abstract

When assigning a final grade to a student, one must be fair not only to the individual student, but to the entire class. When assigning grades for a group project, being fair to the entire group may be especially challenging in that all members of the group may not have pulled their own weight. This paper describes a method to track the progress of the work completed by all members of a group and thus will aid in assigning a final grade for group projects.

KEYWORDS: Group Project, Group Assessment

1. INTRODUCTION

Project-based learning has been widely studied by researchers in various disciplines and the results have generally found it to be effective in increasing student motivation, improving student attitudes toward learning, increasing student problem solving and collaboration skills, providing students with an integrated learning situation, addressing different learning styles, and providing growth in self-reliance. Project-based learning increases long-term retention of content, motivates the students to do additional work, illustrates to the students the value of the materials covered, and most importantly, provides practical experiences that enrich the student's academic experiences. (Albanese & Mitchell, 1993; Hutchings & Wutzdorff, 1988; Strobel & van Barneveld, 2009; Walker & Leary, 2009)

Additionally, group projects allow the student to simulate the interaction they will experience when entering the work force after graduation. Simulating real world experiences in the classroom is always a desired outcome for the Information Systems major. (Baugh 2013) Through group projects, students will learn to lean on others in the group for both their expertise and support. (Felder & Brent, 2001; Jaques, 2000) Learning to collaborate with others in a group to complete a focused project is of course a valued trait.

Although studies have shown that group work can provide the student with many practical experiences while working within a group dynamic, but there are also downsides of assigning group work to one's students.

This author generally has taught programming courses and did not usually assign group work. But when presented with a Project Management course to teach, this author determined that group work for the course was very appropriate. Project Management is involved with planning and initiating a project that has specific goals, created with a time line and a budget. Projects are most often created within a group structure.

Many concerns arise for the instructor who is assigning group work to his students. How are students assigned to each group? How is work assigned to each group member? How is a grade assigned to the group? How is a grade assigned to each member of the group? Has each member of the group participated equally in the project work? What should be done if someone in the group is not sharing the group workload? Should all members of the group be assigned the same grade?

This author initially shared all of these concerns at the onset of the Project Management course. Additionally, most concerning was how to fairly assess the quality of the work each group member completed.

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2. PROJECT MANAGEMENT GROUP PROJECT ORGANINZATION

There were 22 students in the course and the groups for this Project Management course consisted of 4 to 5 students each. The author decided to allow the students to partially select their fellow group members. Each student filled out a spreadsheet on which they listed whom they wanted to work with and why. They were also asked to identify anyone in the class they preferred not to work with, listing any concerns they had towards that specific student. All input from the students was confidential and not shared with any other students in the class. The author used the student's input and selected the group members, being careful to make sure each student was in a group with at least one of the selections from their input form.

Next was the project selection. The author provided two different projects for selection by each group. A very detailed description was provided for each project. Each group read both possible projects and then voted on the project they wanted. It turned out that three groups choose a healthcare related project and the other two choose an environmental research related project. It must be noted that care was taken by the author to ensure that each project contained equally detailed requirements and would result in a significant amount of work appropriate for group effort and not an individual student effort.

3. GROUP ASSESSMENT DATABASE

Keeping track of all of the work done by each student within each group seemed a daunting task. But a database to track everything seemed to be a possible solution. This author has a great deal of experience with writing custom database applications for many different types of clients. The information needed to assign a grade to a student within a group is just a set of data that needed organized. Therefore, writing a database to track the work performed by the students in the Project Management course seemed to be a logical approach.

A database was written using Microsoft Access for assessing student performance in this course. The access relationship screen, showing the schema is included in Figure 1. The database has an opening screen as seen in Figure 2.

The database allowed for the following information to be stored:

a) Demographics on all students is shown in Figure 3. In this section of the database, all contact information concerning each student was stored. Items stored included name, email, phone numbers, group the student was assigned to, semester and project selected. Each student was assigned a unique ID number that was used to track all work done by that particular student all semester.

b) Organization of all Groups is shown in Figure 4. - This section simply keeps track of the group number, semester year and what project the group is working.

c) An example of Weekly Update information is shown in Figure 5. – In this section each group was required to report the status of their project each week. Students were to enter information on the Friday of each week. If they did not enter their update, that would have a negative impact on the group final grade.

d) An example of the storage of Group Meeting Details is shown in Figure 6. This section is especially important for this author. All information concerning any meetings that the group had was stored in this section. These meetings were in class, outside of class, via phone, or via group email. The participation of each student in each group is tracked and thus will be part of the record of individual efforts when the assessment of the final grade is done.

e) Work Assigned - In this section as shown in the sample screen shot of Figure 7, all work that the group divided up among themselves is detailed. The group itself worked together to decide what each person would contribute to the project. The author had no input as to what tasks each person within each group was to complete. This part of the database is also essential in determining the final grade of each individual student. When assessing the final grade, this section is a history of what tasks the group assigned to each and thus should have been completed.

f) Problems/Concerns of Group – Figure 8. In this section any problems or issues that arose from the group were logged. But the students did not enter this information directly into the database themselves. If there were any problems or concerns, the group either told the instructor (the author) in person or emailed the information to her during the

semester. The author also stored information that she observed during the semester indicating that various students were not carrying their weight. The instructor saved all information and entered it in the database at the end of the project, before grading. This way, students did not see any negative information about each other and it also allowed for absolute anonymity when students reported problems with their peers.

g) Report Section – As seen in Figure 9, this section is still under construction. The reports currently created are Group/Project List, Group Project Summary and Individual Project Summary. Since this is a relational database, the variations of reports created from individual queries is endless.

The Group Project Summary is organized by Group and lists everything entered into the database relating to the group's project. This includes weekly summaries, work assigned, meeting reports and any issues or concerns.

The Individual Project Summary lists all project information, weekly summaries, work assigned, meeting reports and any issues or concerns and is organized by each student. This report shows everywhere any information concerning a student was entered in the database. Thus, this is a record of the participation of each student in the group project.

4. ASSIGNING THE FINAL COURSE GRADE

As stated earlier, this author usually does individual projects in her courses taught and the assignment of a final grade is simply the effort of only the one student. Because a group project was assigned for the Project Management course, the author designed a more efficient way to track the effort of each student.

The final grade for the Project Management course was distributed as 50% from the total group effort and 50% from the individual student's effort. The final reports generated by the database were extremely helpful in assessing the grade for each student. For example, if the group project was excellent, but the report for a student's individual effort showed little to no participation in the project's workload, the grade given to that student would reflect this. Also, if a task within a project was not completed to specifications, it was somewhat easy to see which student within the group was responsible for that task. The final 50% individual student group grade was easier to assign, because for each student, the report generated:

- What tasks were assigned to the student by his group
- What group meetings the student participated in
- What weekly updates the student participated in
- What issues or concerns were reported against a particular student

Although assignment of a grade in a course such as this can be somewhat subjective, the database allows one to see how much students in the group actually participated with the group activities.

As stated earlier, at the beginning of this course, this author was somewhat concerning about assigning a grade to students within a group who did not really deserve the grade because of their lack of participation. This database allowed for a more objective assignment of the project grade. If the project was done to the highest standards, but a student did very little to participate with it, the project group grade could have been 100% and the individual student group grade would have been 30%. Because the final group grade was 50% for the group effort and 50% for the individual effort, this would have given that particular student a grade of 65% for the group project. This did in fact happen to a few students. Two students actually received a failing grade for the project. It is interesting to note that each group had an individual copy of the database and thus controlled the input. Therefore, all were aware of the data their group was entering. Each individual group database was not uploaded to the author until after each group had made their final presentation at the end of the semester. At that point, all tables from each group's database were merged into the author's final course database.

5. CONCLUSION

The students liked the idea of tracking their contribution to the group project using the database. They voiced that too often in past courses, others in their groups did not pull their own weigh, but still received the same final grade as every other member of the group. Although there was no formal survey taken of the students to assess their views of the database, the overwhelming informal feedback was quite positive.

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This database will evolve to store additional information as needed. The version of the database described here was used for a Project Management course, but can very easily be incorporated into any course where a group project is assigned.

Because the group information is stored in a relational database, the queries that can be generated are unlimited. One can access the group's work in many different ways. But, the instructor is limited by what the group has input to the database. Therefore, the students must be instructed as to what data is to be entered and exactly how the data will be used in the assessment of their final individual group project grade. Each student in the group will then make sure their participation in the project is adequately represented within the database. All in each group will see the data for their group, so they will therefore police each other's data entries and the participation reported will be as accurate as possible.

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7. APPENDIX

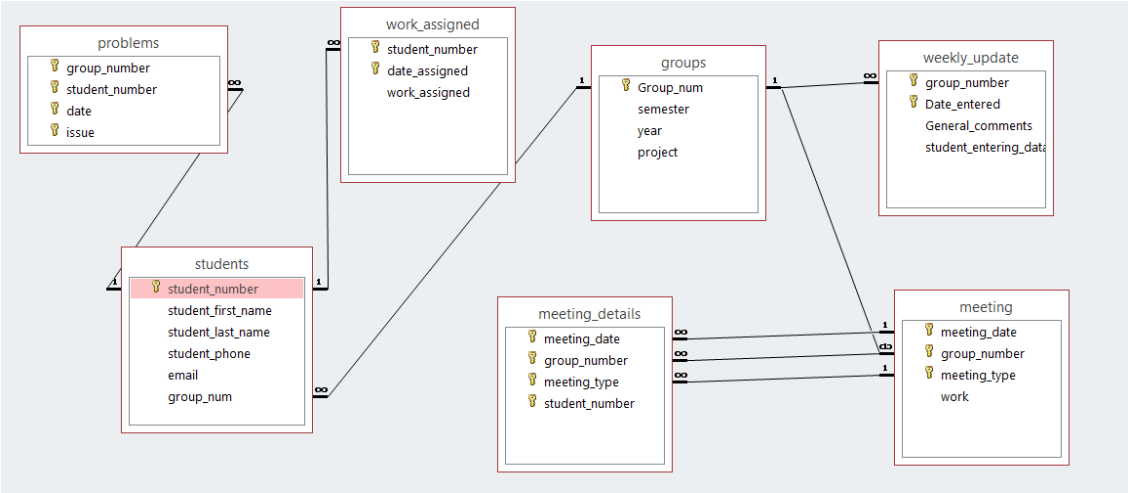

Figure 1. Access Relationship screen

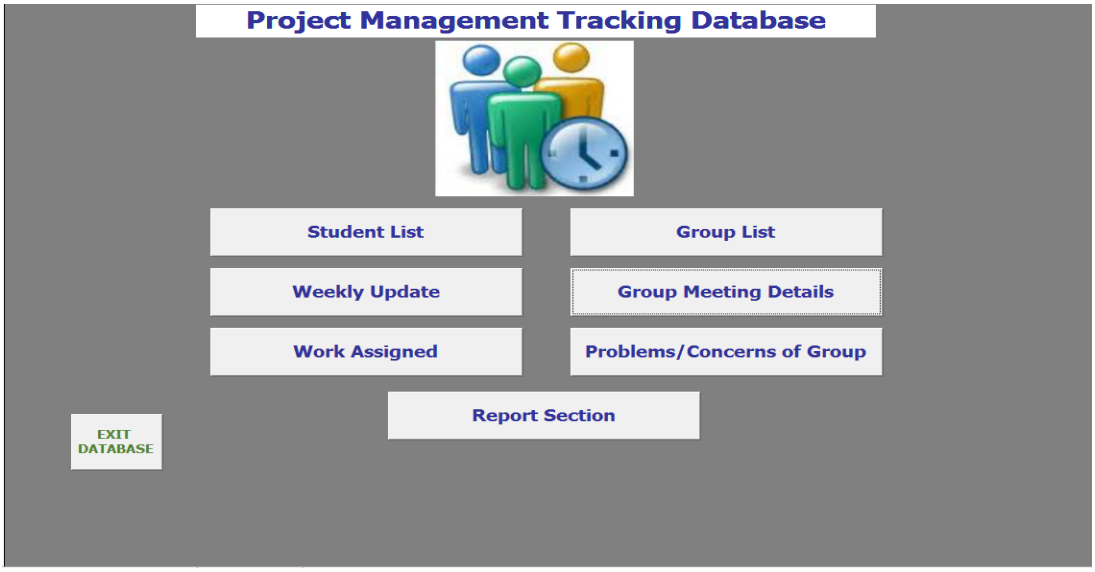

Figure 2. Opening screen of Project Management Tracking Database

ISSN: 2473-3857
v3 n4355

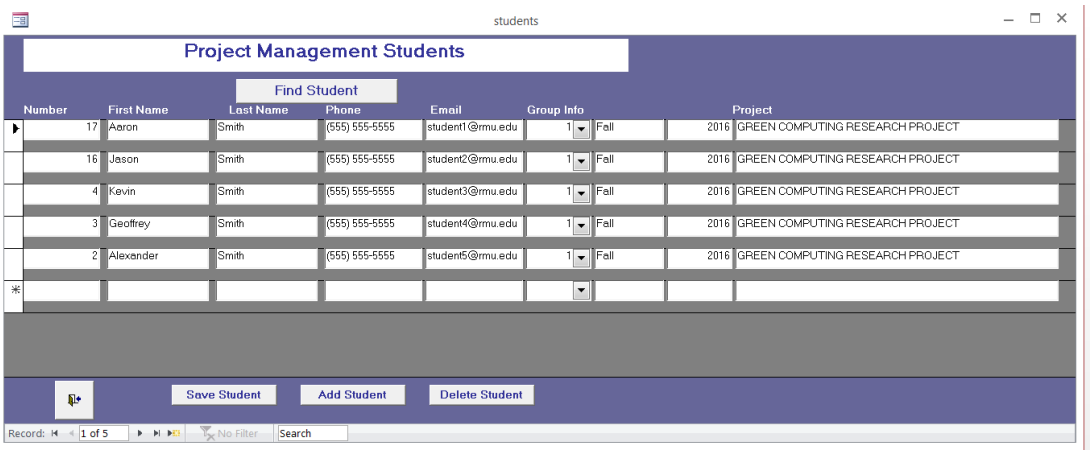

Figure 3. Demographics on all students

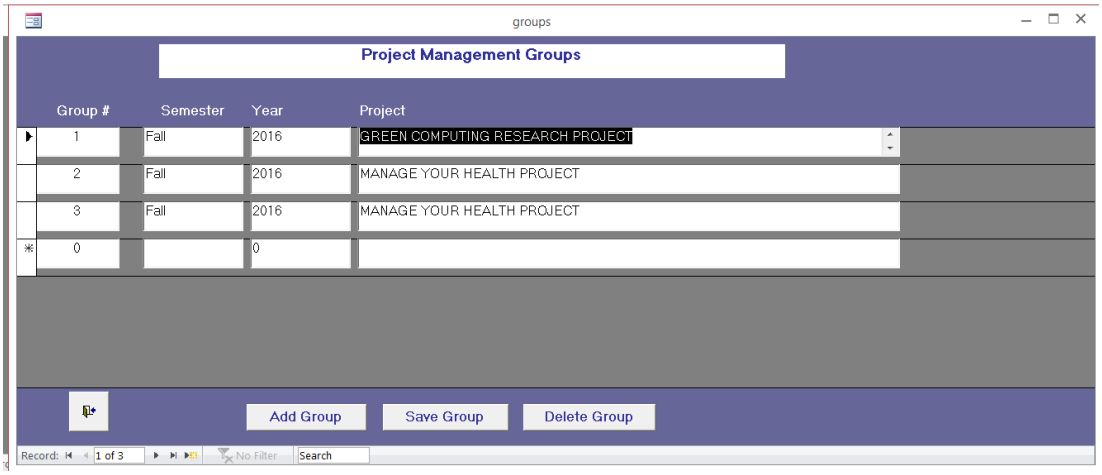

Figure 4. Organization of all Groups

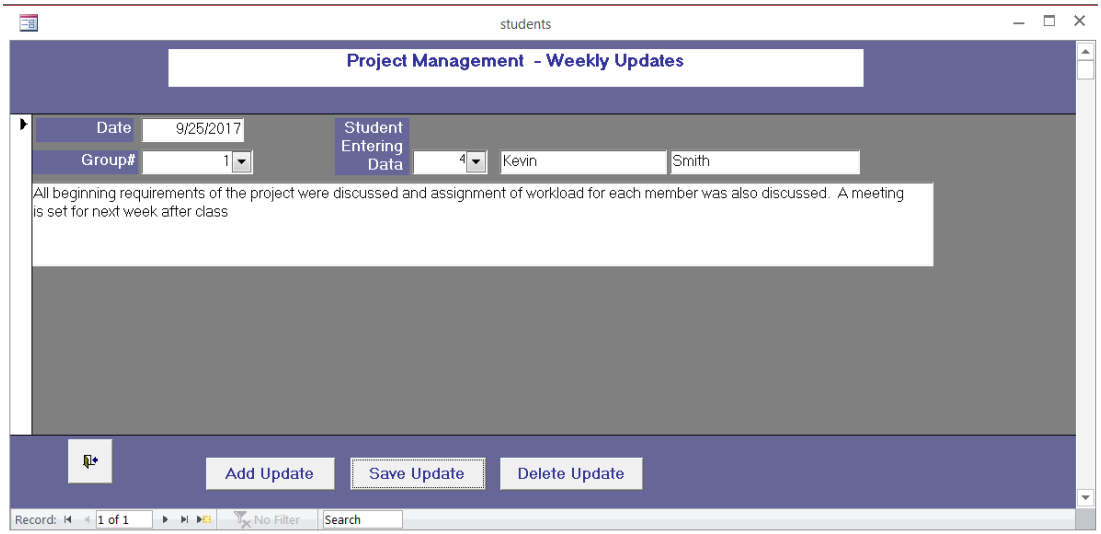

Figure 5. Weekly Updates

ISSN: 2473-3857
v3 n4355

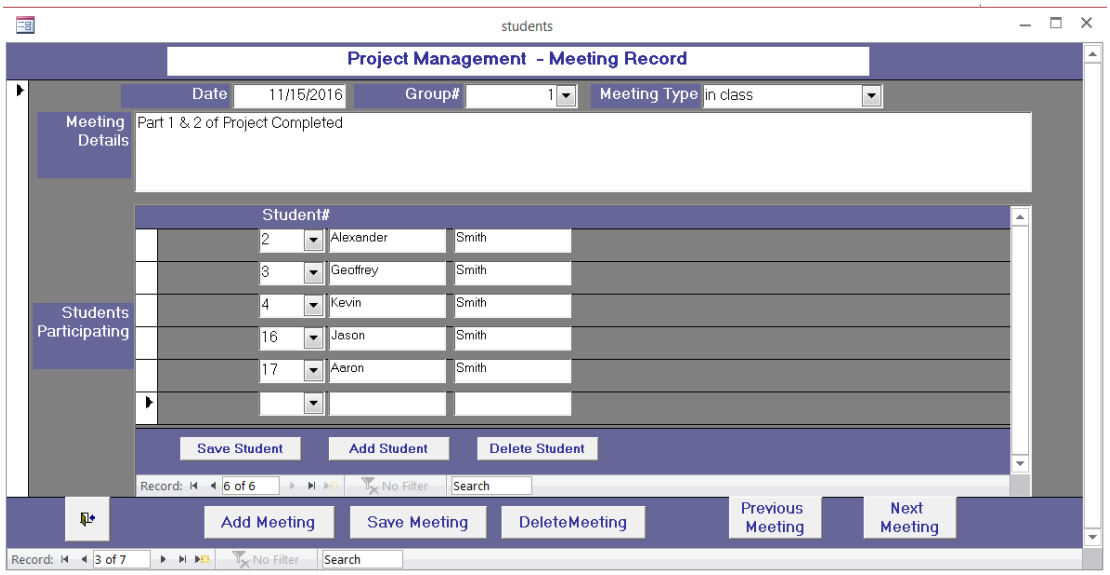

Figure 6. Group Meeting Details.

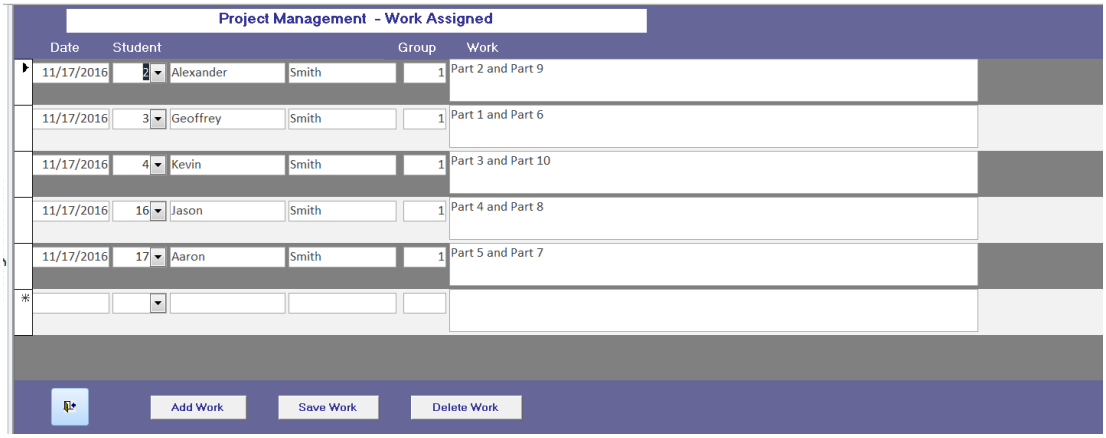

Figure 7. Work Assigned

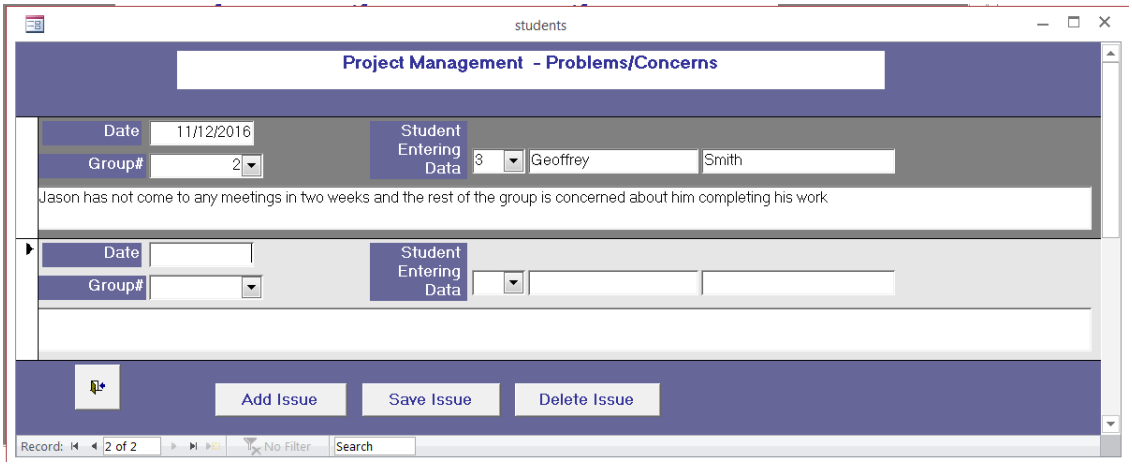

Figure 8. Problems/Concerns of Group

ISSN: 2473-3857
v3 n4355

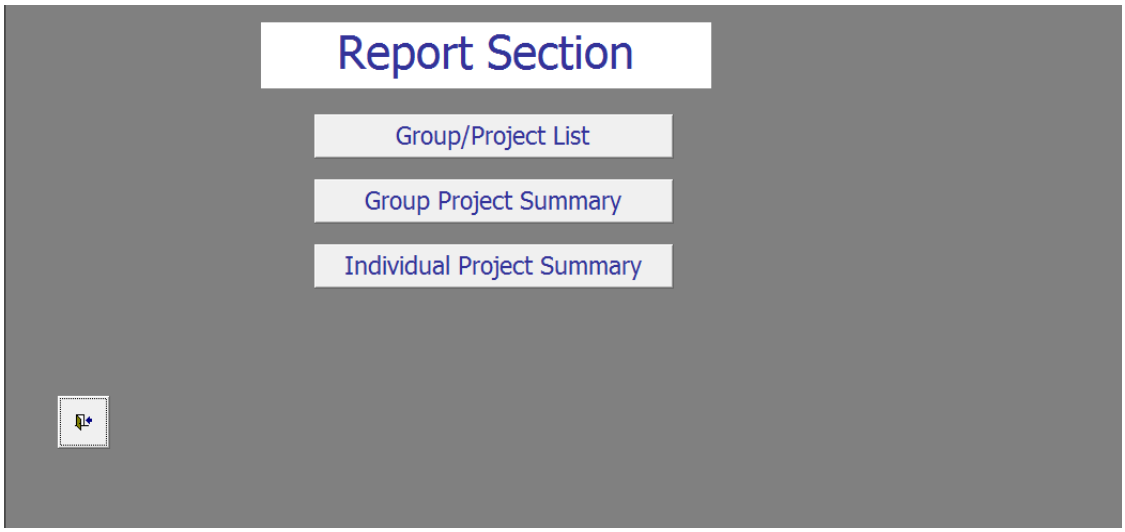

Figure 9. Report Section

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