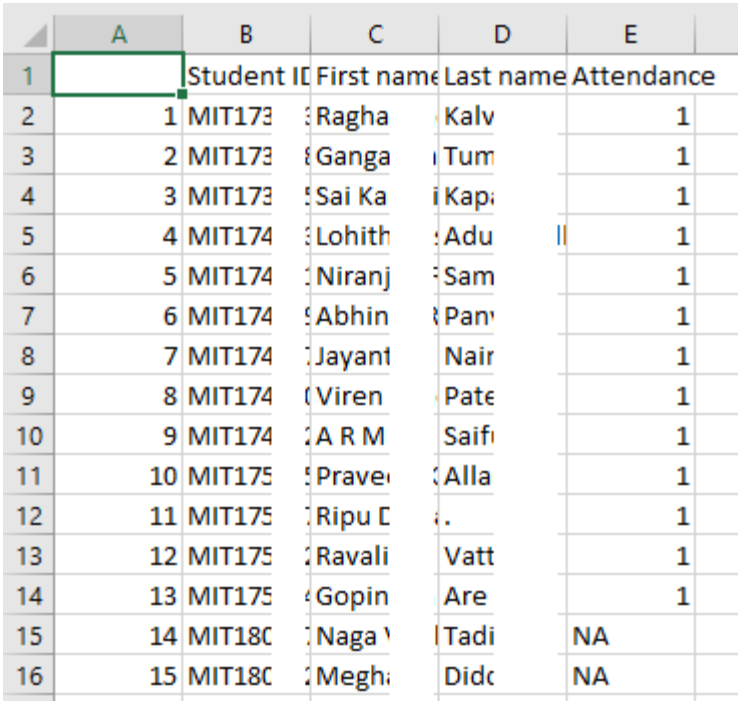
Extracting the attendance of online Zoom meetings/classes

Introduction

One of the challenges in the online Zoom meetings/classes is how to mark attendance, particularly when the number of attendees is large and frequently enter and exit the meeting room . Some of my colleagues and I at the Melbourne Institute of Technology (MIT) used a simple R program for two trimesters and found it convenient and useful. The R programming is selected because R is easy to install by most people. I tried to make it as simple as possible.

Two identical programs are written in the R programming environment to extract attendance from a Zoom report and export it in a .csv file (that can be viewed by Microsoft Excel). The programs can be downloaded from my Github account: https://github.com/rberangi/Zoom-attendance. The programs give a .csv format file after running. A snapshot of the output attendance report is given in Fig. 1. The attendances are marked by “1”s and the absentees are marked by “NA”s.



	A	B	C	D	E
1		Student ID	First name	Last name	Attendance
2	1	MIT173	Ragha	Kalv	1
3	2	MIT173	Ganga	Tum	1
4	3	MIT173	Sai Ka	Kap	1
5	4	MIT174	Lohith	Adu	1
6	5	MIT174	Niranj	Sam	1
7	6	MIT174	Abhin	Pan	1
8	7	MIT174	Jayant	Nair	1
9	8	MIT174	Viren	Pate	1
10	9	MIT174	A R M	Saif	1
11	10	MIT175	Prave	Alla	1
12	11	MIT175	Ripu D	.	1
13	12	MIT175	Ravali	Vatt	1
14	13	MIT175	Gopin	Are	1
15	14	MIT180	Naga	Tadi	NA
16	15	MIT180	Megh	Didc	NA

Fig 1. A snapshot of the attendance report in .csv format, viewed in Microsoft Excel.

The first program is given in Fig. 2.

```
# Finding the file paths
Zoom_Report_path <- rstudioapi::selectFile(caption = "Select Zoom Report [CSV file]",
                           filter = "CSV Files (*.csv)",existing = TRUE)
AMS_student_list_path <- rstudioapi::selectFile(caption = "Select class list  from AMS [CSV file]",
                           filter = "CSV Files (*.csv)",existing = TRUE)
Attendance_list_path <- rstudioapi::selectFile(caption = "Save attendance in [write name or select file]",
                           filter = "CSV Files (*.csv)", existing = FALSE,label="Save")

ZoomR <- read.csv(Zoom_Report_path, header = TRUE,sep = ",");
classlist <- read.csv(AMS_student_list_path, header = TRUE,sep = ",");

Zdim=dim(ZoomR)
CLdim=dim(classlist)
classlist$W1=rep(NA, CLdim[1])

for (i in 1:Zdim[1])
{
  for (j in 1:CLdim[1])
  {

    for (k in 1:3) # to compare with the first 3 column
    {
      if (grepl(classlist$Student.ID[j],as.character(ZoomR[i,k]),ignore.case = TRUE))
      {
        classlist$W1[j]<-1
      }
      if (grepl(classlist$First.name[j],as.character(ZoomR[i,k]),ignore.case = TRUE))
      {
        classlist$W1[j]<-1
      }

      if (grepl(classlist$Last.name[j],as.character(ZoomR[i,k]),ignore.case = TRUE))
      {
        classlist$W1[j]<-1
      }
    }
  }
}

Attendance<-data.frame(classlist$Student.ID,classlist$First.name,classlist$Last.name,classlist$W1)
names(Attendance)<-c('Student ID','First name','Last name','Attendance')

write.csv(Attendance,paste(Attendance_list_path,".csv",sep=""))
```

Fig 2. **Zoom**-attencance_check_rstudio.R

The Zoom-attencance_check_rstudio.R is suitable for the R-studio environment and easy to work. It opens 3 successive dialog boxes to read

1) Zoom .csv report (taken from the Zoom and saved on your computer)

2) Total class/meeting .csv list (prepared by you from your class/meeting attendees)

3) Name and the path of the output .csv attendance list

The second program, Zoom-attencance_check_r.R, given in Fig. 3 has a similar structure and works for both R and R-studio environment. The program accepts all the paths and file names manually. All the separator in the path must be a forward slash "/." Generally, when you copy the path from MS windows all the separators are backward slashes "\," which can make an error.

```
Zoom_Report_path <- "C:/Users/DrReza/Desktop/T12020/MN692/MN692_attendance/MN692_Zoom__Report_7_4_2020.csv"
AMS_student_list_path <- "C:/Users/DrReza/Desktop/T12020/MN692/MN692_attendance/MN692_class_list.csv"
Attendance_list_path <-"C:/Users/DrReza/Desktop/T12020/MN692/MN692_attendance/MN692_out2"

ZoomR <- read.csv(Zoom_Report_path, header = TRUE,sep = ",");
classlist <- read.csv(AMS_student_list_path, header = TRUE,sep = ",");
Zdim=dim(ZoomR)
CLdim=dim(classlist)
classlist$W1=rep(NA, CLdim[1])

for (i in 1:Zdim[1])
{
  for (j in 1:CLdim[1])
  {

    for (k in 1:3) # to compare with the first 3 column
    {
      if (grepl(classlist$Student.ID[j],as.character(ZoomR[i,k]),ignore.case = TRUE))
      {
        classlist$W1[j]<-1
      }
      if (grepl(classlist$First.name[j],as.character(ZoomR[i,k]),ignore.case = TRUE))
      {
        classlist$W1[j]<-1
      }

      if (grepl(classlist$Last.name[j],as.character(ZoomR[i,k]),ignore.case = TRUE))
      {
        classlist$W1[j]<-1
      }
    }
  }
}

Attendance<-data.frame(classlist$Student.ID,classlist$First.name,classlist$Last.name,classlist$W1)
names(Attendance)<-c('Student ID','First name','Last name','Attendance')

write.csv(Attendance,paste(Attendance_list_path,".csv",sep=""))
```

Fig 3. **Zoom**-attencance_check_r.R

How to run the programs:

You must install R and R-Studio on your machine and open one of the programs and press the source button.

Prepare two following files before you start.

1. Prepare the Zoom report. There are various methods to have access and download a .csv Zoom report. The most reliable method is to login into your Zoom account and go to report >

usage (Fig. 4) and search for a certain time. You will see your meetings and you can click on the blue links (Shown if Fig. 5) and export a .csv file (Fig. 6). The final format of the exported file has a form as shown in Fig. 7.

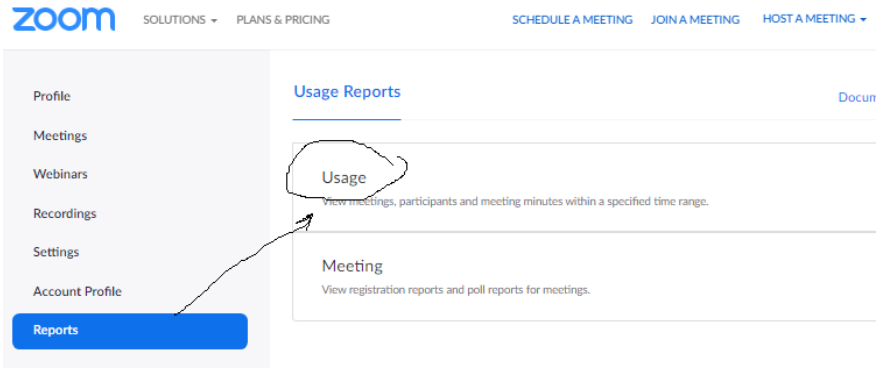


Fig. 4. Access to a **Zoom** report

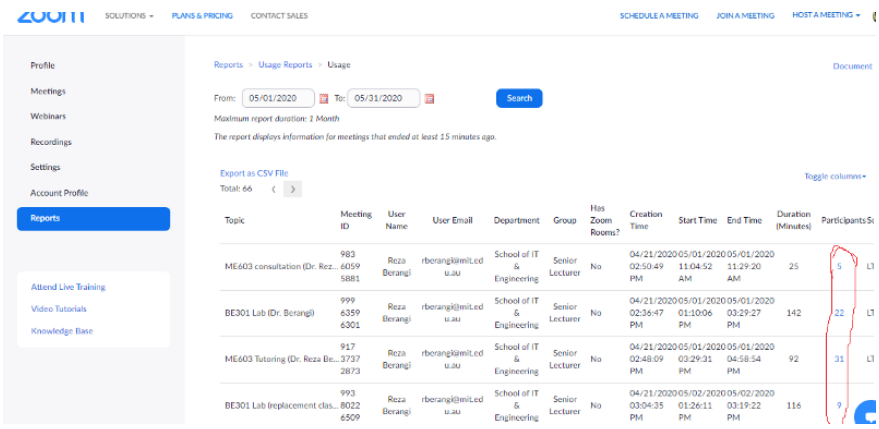


Fig 5. Download links in the **Zoom** report

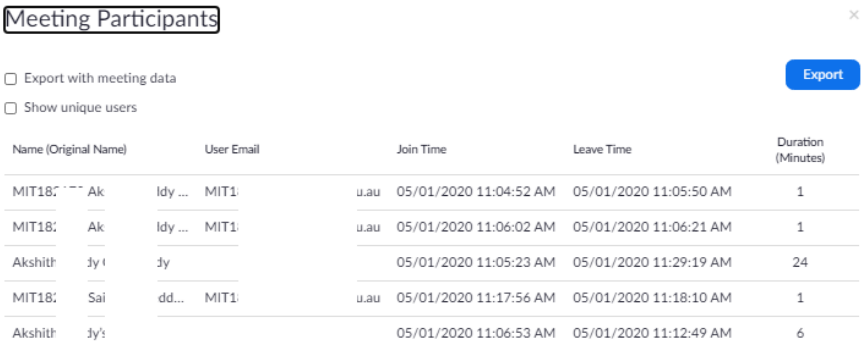


Fig 6. Final window to export **Zoom** report

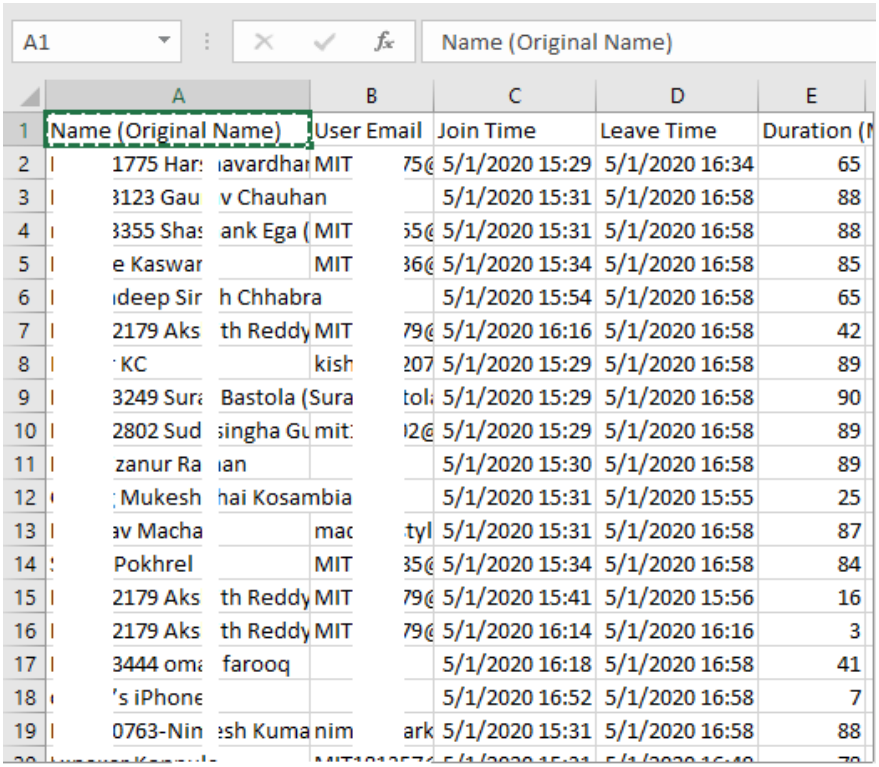


Fig. 7. **Zoom** attendance report format

2. Your full list of the attendees. If you are a lecturer and have access to AMS, you can use an exported .csv file (In AMS click students, and then export and clean the header part of the.csv file (shown in red in Fig. 8) and save. You can create it once for a semester. I used Student ID, First Name and Last name as the student idenyifire in this list.

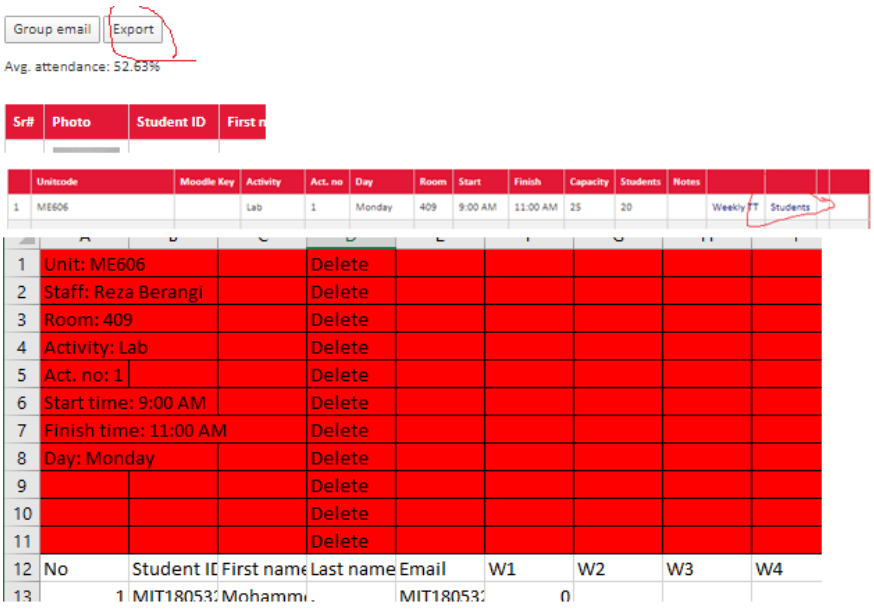


Fig. 8. AMS student list

3. You can run the programs and specify a path to export the attendance list.

I used this program as a base to prepare a better program that may suit you. I considered simplicity, the user's background and usability. I used student ID, first name, and last name as the students identifier to search and find the attendance. You may modify the program to suit your data format. Because I used 3 nested loops, the program is a bit slow for a large number of attendees (over 200 people). However, it will not take more than a few seconds. In these programs, I used only presence and not the duration of staying in the meeting. The program can be modified to take attendance at a certain time or only extract the duration.

Good Luck

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