**Midterm Lab Exam**

**Question #1**

|  |  |
| --- | --- |
| **Code:**  #Student data in the form of a List of Dictionaries. We have 5 entries of student data.  student\_data = [{  'student\_id':4,  'course\_type':'core', #or 'elective'  'minimum\_credits\_required':10,  'total\_credits\_taken':8  },  {  'student\_id':21,  'course\_type':'core', #or 'elective'  'minimum\_credits\_required':10,  'total\_credits\_taken':12  },  {  'student\_id':37,  'course\_type':'elective', #or 'elective'  'minimum\_credits\_required':10,  'total\_credits\_taken':8  },  {  'student\_id':44,  'course\_type':'core', #or 'elective'  'minimum\_credits\_required':15,  'total\_credits\_taken':8  },  {  'student\_id':53,  'course\_type':'elective', #or 'elective'  'minimum\_credits\_required':18,  'total\_credits\_taken':18  }]  #Each course is assumed to be of 2 Credit Hours, so courses\_taken = total\_credit\_taken/2;  #The function defined below will take the dictionary as an argument and return the appropriate fee or discount for the student.  def calculate\_fee\_or\_discount(student\_data):  #Initializing the fee variable  fee=0  courses\_taken = student\_data['total\_credits\_taken']/2  courses\_required = student\_data['minimum\_credits\_required']/2  if courses\_required > courses\_taken: # If courses taken were less than required by end of semester  if student\_data['course\_type'] == 'core': # If course type is 'core'  fee = 50  print(f"\nStudent with Registration No.{student\_data['student\_id']} should pay {fee} as a fee.\n")  elif student\_data['course\_type'] == 'elective': #If course type is 'elective'  fee = 30  print(f"\nStudent with Registration No.{student\_data['student\_id']} should pay {fee} as a fee.\n")  elif courses\_taken >= courses\_required: #If courses taken were more than required by end of semester  if student\_data['course\_type'] == 'core': # If course type is 'core'  if courses\_taken >= 5:  print(f"\nStudent with Registration No. {student\_data['student\_id']} gets 2% discount on the total fee.\n")  elif student\_data['course\_type'] == 'elective': # If course type is 'elective'  if courses\_taken >= 3:  print(f"\nStudent with Registration No. {student\_data['student\_id']} gets 3% discount on the total fee.\n")  return  #Input the index to check the fee of the student on that index.  while(True):  choice = input("Do you want to check fee?")  if choice == 'yes' or choice =='y':  index = int(input("Enter the index to check the fee:"))  if index <=4:  calculate\_fee\_or\_discount(student\_data[index])  else:  print("Index too high, choose from 0-4")  else:  print("Bye!")  break  **Output:**   |  | | --- | | A screenshot of a computer program  Description automatically generated | |