**Task 1:**

import datetime  
  
  
class ABC:  
 def \_\_init\_\_(self, name, roll):  
 self.name = name  
 self.roll = roll  
  
 def fun(self):  
 print("Hi " + self.name)  
 print("SELECT BOOKS:")  
 print("PRESS 1 FOR MATHS.")  
 print("PRESS 2 FOR COMPUTER.")  
 print("PRESS 3 FOR ENGLISH.")  
 print("PRESS 0 TO EXIT.")  
 temp = int(input("PRESS:"))  
 if temp == 1:  
 x1 = str(datetime.datetime.now())  
 x2 = str(datetime.datetime.now() + datetime.timedelta(days=14))  
 print(  
 "Hi " + self.name + "\n Roll Number: " + self.roll + "\n Assigned the Book of Maths \n Date " + x1 + "\n Return Date " + x2)  
 elif temp == 2:  
 x1 = str(datetime.datetime.now())  
 x2 = str(datetime.datetime.now() + datetime.timedelta(days=14))  
 print(  
 "Hi " + self.name + "\n Roll Number: " + self.roll + "\n Assigned the Book of Computer \n Date " + x1 + "\n Return Date " + x2)  
 elif temp == 3:  
 x1 = str(datetime.datetime.now())  
 x2 = str(datetime.datetime.now() + datetime.timedelta(days=14))  
 print(  
 "Hi " + self.name + "\n Roll Number: " + self.roll + "\n Assigned the Book of English \n Date " + x1 + "\n Return Date " + x2)  
 else:  
 exit()  
  
h=0  
while(h==0):  
 a = input("Enter Name: ")  
 b = input("Enter Roll Number: ")  
 p1 = ABC(a, b)  
 thisdict = {  
 "0321": "Usama",  
 "0320": "Muteeb",  
 "0118": "Wahab",  
 "0121": "Rumi",  
 "0196": "Mujtaba",  
 }  
  
 x = thisdict.get(b)  
 if (x is None):  
 print("NOT IN THE LIST.")  
 else:  
 p1.fun()  
 print("\n\n")

**Screenshot:**

Text

Description automatically generated

**Task 2:**  
**Code:**

def add\_vertex(v):  
 global graph  
 global vertices\_no  
 if v in graph:  
 print("Vertex ", v, " already exists.")  
 else:  
 vertices\_no = vertices\_no + 1  
 graph[v] = []  
  
def add\_edge(v1, v2, e):  
 global graph  
 if v1 not in graph:  
 print("Vertex ", v1, " does not exist.")  
 elif v2 not in graph:  
 print("Vertex ", v2, " does not exist.")  
 else:  
 temp = [v2, e]  
 graph[v1].append(temp)  
def print\_graph():  
 global graph  
 for vertex in graph:  
 for edges in graph[vertex]:  
 print(vertex, " -> ", edges[0], " weight: ", edges[1])  
  
graph = {}  
vertices\_no = 0  
vertices = int(input("Enter Number of Vertices: "))  
i = 1  
while i < vertices + 1:  
 add\_vertex(i)  
 i += 1  
edges = int(input("Enter Number of Edges: "))  
j = 1  
while j < edges + 1:  
 print("EDGE NO:" + str(j))  
 vertex1 = int(input("Enter Vertex1: "))  
 vertex2 = int(input("Enter Vertex2: "))  
 weitage = int(input("Enter Weitage: "))  
 add\_edge(vertex1, vertex2, weitage)  
 j += 1  
  
print\_graph()  
print("GRAPH: ", graph)

**Graphs:**

Diagram

Description automatically generated

**Graph 1:**

Text

Description automatically generated

**Graph 2:**

Text

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