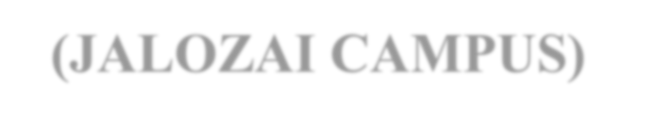
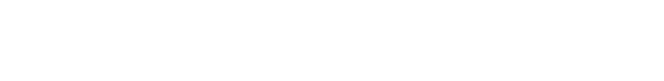


**UET PESHAWAR**



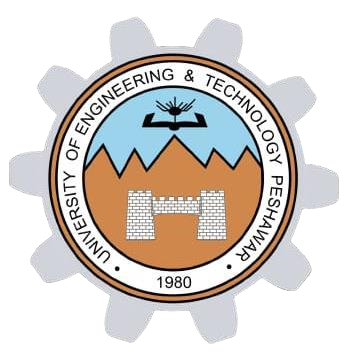
**(**



**JALOZAI CAMPUS**



**)**



***IRFAN ULLAH***

***22JZELE0491***

***SEMESTER: 3rd***

***DEPARTMENT: ELECTRICAL***

***SUBJECT: OOPS & DATA STURCTURE***

***TEACHER NAME: SIR IRFAN***

***ASSIGNMENTE NO :1***

CODE

# name / Irfan ullah

#Reg No/ 22JZELE0484

# dept Electrical Engineering

# section / B

class Semester:

    def \_\_init\_\_(self):

        self.subjects = {}

    def add\_subject(self, subject, credit\_hours, grade):

        self.subjects[subject] = {'credit\_hours': credit\_hours, 'grade': grade}

class CGPACalculator:

    def \_\_init\_\_(self):

        self.semesters = []

    def add\_semester(self, semester):

        self.semesters.append(semester)

    def calculate\_cgpa(self):

        total\_credit\_points = 0

        total\_credit\_hours = 0

        for semester in self.semesters:

            for subject, details in semester.subjects.items():

                credit\_hours = details['credit\_hours']

                grade = details['grade']

                credit\_points = self.grade\_to\_points(grade)

                total\_credit\_points += credit\_hours \* credit\_points

                total\_credit\_hours += credit\_hours

        if total\_credit\_hours == 0:

            return 0

        cgpa = total\_credit\_points / total\_credit\_hours

        return cgpa

    def grade\_to\_points(self, grade):

        grading\_system = {'A': 4.0,'A-':3.68,'B+':3.3, 'B': 3.0,'B-':2.68,'C+':2.36,'C': 2.0,'C-':1.86,'D': 1.0, 'F': 0.0}

        return grading\_system.get(grade, 0.0)

semester1 = Semester()

semester1.add\_subject('calculus', 3.3, 'B+')

semester1.add\_subject('E and M', 4, 'A')

semester1.add\_subject('pak study',4,'A')

semester1.add\_subject('islamic study',3.3,'B+')

semester1.add\_subject('Ethic',3.68,'A-')

semester1.add\_subject('fundamental computer',3.3,'B+')

semester1.add\_subject('lab computer',2.0,'C')

semester1.add\_subject('lab E and M',3.3,'B+')

semester1.add\_subject('engineering Drawing',3.3,'B+')

semester2 = Semester()

semester2.add\_subject('BEE', 2.3, 'C+')

semester2.add\_subject('eng machanic', 2.68, 'B-')

semester2.add\_subject('C++',1.0,'d')

semester2.add\_subject('english',3.3,'B')

semester2.add\_subject('Linear Algbrc',2.68,'B-')

semester2.add\_subject('C++ Lab',0,'F')

semester2.add\_subject('BEE Lab',2.3,'C')

semester2.add\_subject('Workshp',2.68,'B-')

semester2.add\_subject('workshp Lab',2.68,'C+')

cgpa\_calculator = CGPACalculator()

cgpa\_calculator.add\_semester(semester1)

cgpa\_calculator.add\_semester(semester2)

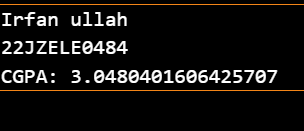
result\_cgpa = cgpa\_calculator.calculate\_cgpa()

print("Irfan ullah")

print("22JZELE0484")

print(f"CGPA: {result\_cgpa}")

**OUTPUT**

****