**APIs Required for IMS IIIT Hyderabad mobile application:**

1. Authentication API (POST)
2. Profile Details API (GET)
3. Bank Details API (GET)
4. Add Bank Details API (POST)
5. Leave Request API (POST)
6. Past Leave Applications API (GET)
7. Courses List of Student (GET)
8. Attendance (GET)
9. Transcript (GET)

**1. Authentication API**

**Endpoint:** POST

**Input (JSON):**

```
{
  "username": "john.doe@students.iiit.ac.in",
  "password": "student_password"
}
```

**Output (JSON):**

```
{
  "success": true,
  "user": {
          “userType”: Student,
          "rollNumber": 2022111222,
          “name": "John Doe",
          “userID”: “john.doe@students.iiit.ac.in”
  }
}
```

**Description:**

The Authentication API is to verify user credentials. Upon a successful authentication request, the API returns detailed user information, including student details such as name, roll number, date of birth, academic information, contact details, and parent information. If unsuccessful then {“success”: false} JSON value.

Note that the first field in “user”, namely, “userType” is an enum, which should contain The various types of users IMS allows, namely `Student`, `Faculty`, `Staff`.

Currently, since we only know the student view of IMS, this API has fields of students only. As we get to know the views of other kinds of users, we will update this API with new fields.

We will modify this API (maybe for release 2) to incorporate the user's profile picture as uploaded on IMS.

**2. Profile Details API**
**Format** : https://bank_details_api/user_email

**Endpoint:** GET

**Output:**


```
{
    “userType”: Student,
    "general": {
        "rollNumber": 2022111222,
        “name": "John Doe",
        “userID”: “john.doe@students.iiit.ac.in”,
        "degree": "B.Tech",
        "department": "CSE",
        "specialisation": "No",
        "dateOfBirth": "1990-01-01",
        "gender": "Male",
        "aadhaarNumber": "123456789012",
        "category": "GEN",
        "admissionType": "JEE",
        "academicYear": "2022-2023",
        "mobile": “+919876543210”,
        "email": "email@domain.com",
        "fatherName": "John Doe Sr.",
        "motherName": "Jane Doe"
    },
    "address": {
        "street": "Downing Street",
        "location": "No. 10",
        "city": "New Delhi",
        "state": "DELHI",
        "country": "India",
        "zipCode": 201301
    }
}
```


**Description:**

This API is a standalone GET API for profile details of the user. The “userType” attribute (enum) indicates whether the user is a student, faculty, staff etc. Currently, since we only know the student view of IMS, this API has fields of students only. As we get to know the views of other kinds of users, we will update this API with new fields.
We will modify this API (maybe for release 2) to incorporate the user’s profile picture as uploaded on IMS

**3. Bank Details API**

**Endpoint:** GET

**Format** : https://bank_details_api/user_email

**Output (JSON):**


```
  {
      "hasBankDetails": true,
      "bankDetails": {
            "accountHolderName": "John Doe",
            "accountNumber": 9876543210,
            "bankName": "ABC Bank",
            "branchName": "Main Branch",
            "ifscCode": "QWERTY51656516",
            "bankAddress": "123 Main St, Cityville",
            "remarks": "Lorem ipsum dolor sit amet."
      }
}
```


**Description:**

The Bank Details API, a GET request, includes a boolean flag, "hasBankDetails," indicating whether the user account has associated bank details. If true, the API provides essential information like the bank name, account holder name, account number, and branch details.

We will update this API to support fetching the pdf submitted (passbook/cancelled cheque) once we figure out how to.

**4. Add Bank Details API**

**Endpoint:** POST

**Input (JSON):**

```
{
      "rollNumber”: 2022101005,
      "accountHolderName": "John Doe",
      "accountNumber": 9876543210,
      "bankName": "ABC Bank",
      "branchName": "Main Branch",
      "ifscCode": "QWERTY51656516",
      "bankAddress": "123 Main St, Cityville",
      "remarks": "Lorem ipsum dolor sit amet."
}
```

**Output (JSON):**

```
{
  "sent”: true,
  “Status”: “accepted/waiting/rejected”
}
```

**Description:**

The Add Bank Details API, accessed via a POST request, facilitates the submission of bank details including account information, branch details, and account holder's name for a specified roll number. The API responds with confirmation of successful submission and the current status of the request (accepted, waiting for approval, or rejected).

We will update this API to support posting the pdf to be submitted (passbook/cancelled cheque) once we figure out how to.

5. **Leave Request API:**

**Endpoint:** POST

**Input (JSON):**

```
{
  "rollNumber”: 2022101005,
  “fromDate”:  "08-03-2024",
  “toDate”: "19-03-2024",
  “totalDays”: 3,
  “reasonForLeave”:  enum("Sickness", "Family Emergency",
"Technical Event", "Sports Event", "Cultural Event", "Any
Other"),
  “leaveForOnlyPT/Sports”: enum(“Yes”, "No"),
  “justificationForLeave”: “Justification”,
  "patientCategory": enum("In Patient", "Out Patient") |
null,
  "doctorCategory": enum("Institute Doctor", "Outside
Doctor") | null,
  "eventType": enum("Conference", "Workshop") | null,
  "areYouPresentingAPaper": enum("Yes", "No" | null)
  "eventStartDate": "08-03-2024",
  "eventEndDate": "09-03-2024",
  "eventURL":
"https://www.ieee-ras.org/conferences-workshops/fully-spo
nsored/icra",
  “missedExamsForLeave”: enum(“Yes”, "No"),
  "semesterCourses": ["CS6.301-Design and Analysis of
Software Systems", "CS7.302-Computer Graphics"],
  "typeOfExam": enum["Quiz", "Mid", "End Exam"] | null,
  "examCategory": enum("Theory", "Lab/Practical", "Both")
| null,
  “remarks”: null,
  “applicationDate”: "15-03-2024",
  “attachment1”: pdf,
  "attachment2": pdf
}
```

**Output (JSON):**

```
{
  "sentSuccessfully": true,
  "Status": "accepted/waiting/rejected"
}
```

**Description:**

The Leave Request API, accessible through a POST request, allows users to submit leave requests with details such as roll number, leave dates, reason, and supporting documents. The API responds with a status indicating whether the request was sent successfully and the current status of the leave application (accepted, waiting for approval, or rejected).

**Note that optional dropdown fields (not marked with a red dot in the IMS form) have `null` as an acceptable value (same as we will pass `null` for optional fields where user does not enter anything).**

We may update this API depending on changes required in the future. We will also update it with appropriate types for the attachments once we figure out how to handle documents. For the attachments in the leave request form, IMS currently supports quite a few file types, but for release 1 we will only handle pdfs (for convenience); we will handle the other types in release 2.

**7. Courses List of Student**

**Endpoint:** GET

**Output:**


```
{
      "semester": "Spring 2024",
      "currentCourses": {
            "1": {
                  "code": "CS6.301",
                  "name": "Design and Analysis of Software
Systems"
            },
            "2": {
                  "code": "HS8.102",
                  "name": "Intro to Human Sciences"
            },
            "3": {
                  "code": "CS7.301",
                  "name": "Machine, Data and Learning"
            },
            "4": {
                  "code": "CS9.312",
                  "name": "Introduction to Quantum
Information and Computation"
            },
            "5": {
                  "code": "CS7.302",
                  "name": "Computer Graphics"
            }
      }
}
```


**Description:**

This API is useful in the leave application form, when a student has been sick and misses some exams, so they can choose which courses' exams they had missed. This API will also be used to display the courses the student has in the current semester.

We will update this API based on more features to add (in release 2), based on the "My Courses" page in IMS.

**9. Transcript API**

**Endpoint:** GET

**Output (JSON):**


```
{
    "Name": "John Doe",
    "RollNumber": 20222111222,
    "DoB": "01/01/2001",
    "Degree": "B.Tech in CSE",
    "Status": "In Progress",
    "Semesters": {
        "Monsoon2022": {
            "Courses": {
                1: {
                    "Code": "MA5.101",
                    "CourseName": "Discrete Structures",
                    "Credits": 4,
                    "Grade": "A-"
                },
                2: {
                    "Code": "CS0.101",
                    "CourseName": "Computer Programming",
                    "Credits": 5,
                    "Grade": "A-"
                },
                3: {
                    "Code": "EC2.101",
                    "CourseName": "Digital Systems and
Microcontrollers",
                    "Credits": 5,
                    "Grade": "B"
                },
                4: {
                    "Code": "MA4.101a",
                    "CourseName": "Real Analysis",
                    "Credits": 4,
                    "Grade": "A-"
                },
                5: {
                    "Code": "OC2.101"
```

```
                    "CourseName": "Arts-1",
                    "Credits": 2,
                    "Grade": "P"
                },
                6: {
                    "Code": "OC3.101",
                    "CourseName": "Value Education-1",
                    "Credits": 2,
                    "Grade": "P"
                },
                7: {
                    "Code": "OC1.101",
                    "CourseName": "Sports-1",
                    "Credits": 2,
                    "Grade": "P"
                },
                8: {
                    "Code": "OC1.102",
                    "CourseName": "Sports-2",
                    "Credits": 2,
                    "Grade": "P"
                }
            },
            "SGPA": 8.28,
            "CGPA": 8.28
        },
        "Spring2023": {
            "Courses": {
                1: {
                    "Code": "MA5.101",
                    "CourseName": "Discrete Structures",
                    "Credits": 4,
                    "Grade": "A-"
                },
                2: {
                    "Code": "CS0.101",
                    "CourseName": "Computer Programming",
                    "Credits": 5,
                    "Grade": "A-"
                },
                3: {
```

```
                    "Code": "EC2.101",
                    "CourseName": "Digital Systems and
Microcontrollers",
                    "Credits": 5,
                    "Grade": "B"
                },
                4: {
                    "Code": "MA4.101a",
                    "CourseName": "Real Analysis",
                    "Credits": 4,
                    "Grade": "A-"
                },
                5: {
                    "Code": "OC2.101"
                    "CourseName": "Arts-1",
                    "Credits": 2,
                    "Grade": "P"
                },
                6: {
                    "Code": "OC3.101",
                    "CourseName": "Value Education-1",
                    "Credits": 2,
                    "Grade": "P"
                },
                7: {
                    "Code": "OC1.101",
                    "CourseName": "Sports-1",
                    "Credits": 2,
                    "Grade": "P"
                },
                8: {
                    "Code": "OC1.102",
                    "CourseName": "Sports-2",
                    "Credits": 2,
                    "Grade": "P"
                }
            },
            "SGPA": 8.28,
            "CGPA": 8.28
        },
        "Monsoon2023": {
```

```
                "Courses": {
                    1: {
                        "Code": "MA5.101",
                        "CourseName": "Discrete Structures",
                        "Credits": 4,
                        "Grade": null
                    },
                    2: {
                        "Code": "CS0.101",
                        "CourseName": "Computer Programming",
                        "Credits": 5,
                        "Grade": null
                    },
                    3: {
                        "Code": "EC2.101",
                        "CourseName": "Digital Systems and
Microcontrollers",
                        "Credits": 5,
                        "Grade": null
                    },
                    4: {
                        "Code": "MA4.101a",
                        "CourseName": "Real Analysis",
                        "Credits": 4,
                        "Grade": null
                    },
                    5: {
                        "Code": "OC2.101"
                        "CourseName": "Arts-1",
                        "Credits": 2,
                        "Grade": null
                    },
                    6: {
                        "Code": "OC3.101",
                        "CourseName": "Value Education-1",
                        "Credits": 2,
                        "Grade": null
                    },
                    7: {
                        "Code": "OC1.101",
                        "CourseName": "Sports-1",
```

```
                        "Credits": 2,
                        "Grade": null
                    },
                    8: {
                        "Code": "OC1.102",
                        "CourseName": "Sports-2",
                        "Credits": 2,
                        "Grade": null
                    }
                },
                "SGPA": 0,
                "CGPA": 8.28
            }
        }
    }
```


**Description:**

This API for the transcript will enable students to view their transcripts on their mobile phones with ease. The logical structure of the output JSON is to have a similar logical structure while rendering it in the app. **Note that the last semester has null as the value for grades of each course**. This indicates that the last semester is the current semester and thus does not have grades uploaded yet. This is the same as on the transcript page on the IMS website.