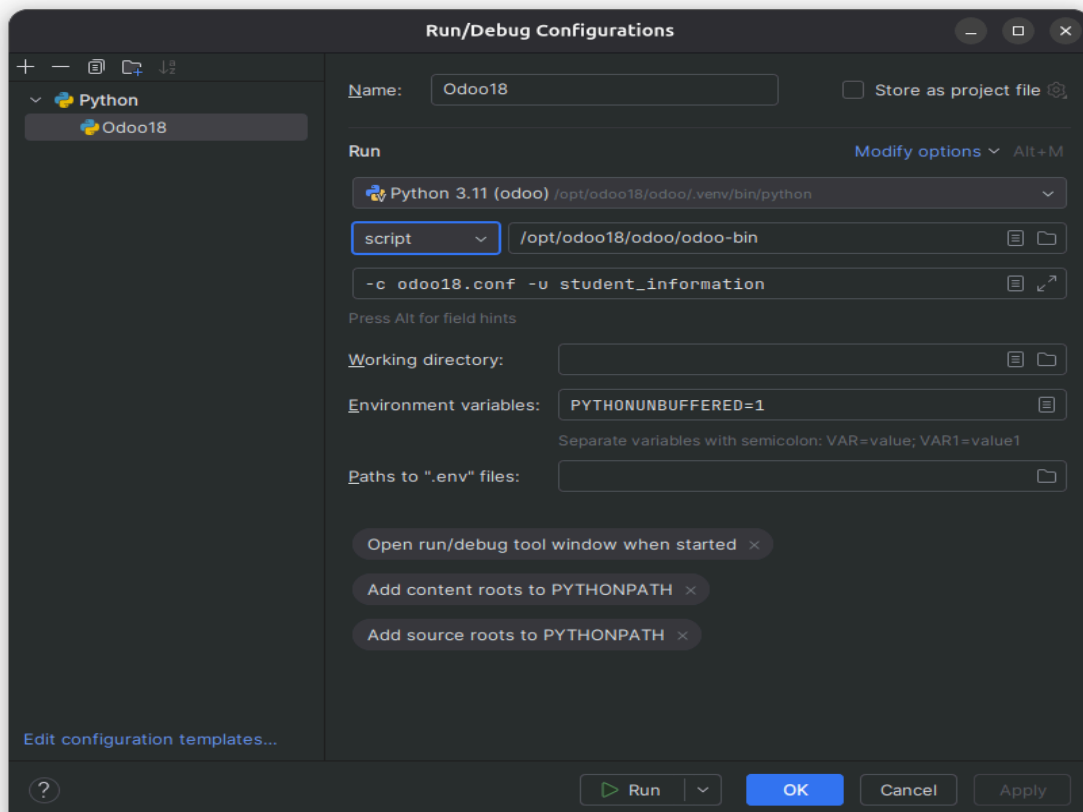


Odoo with IDE (using PyCharm)

- Install required version.
- Make all the packages installed properly.
- Select the odoo folder in the new project section.
- Identify the location of odoo-bin python file.
- Identify the location of the odoo conf file and get the path.

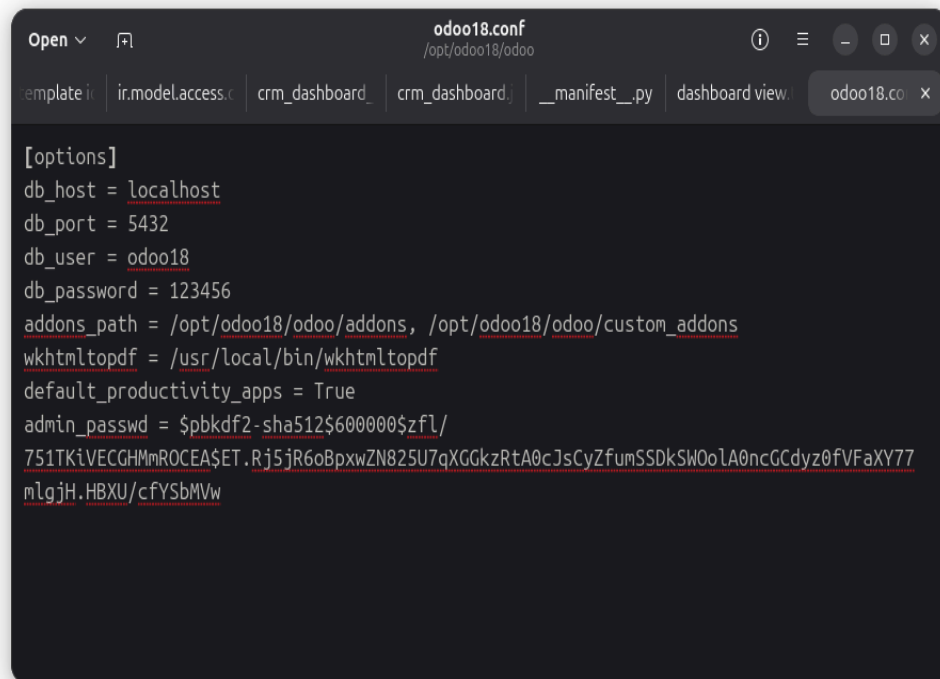
The run configuration need to set like this

1. Odoo version supports python version selection.
2. Select the script and bin path should be properly defined.
3. [-c odoo18.conf -u student_information] this command assigned for upgradation for the module



Odoo conf file update

- Identify the location of the odoo conf file and get the path.
- Now update these attributes as below,



```
[options]
db_host = localhost
db_port = 5432
db_user = odoo18
db_password = 123456
addons_path = /opt/odoo18/odoo/addons, /opt/odoo18/odoo/custom_addons
wkhtmltopdf = /usr/local/bin/wkhtmltopdf
default_productivity_apps = True
admin_passwd = $pbkdf2-sha512$600000$zfl/
751TKiVECGHmROCEAS$ET.Rj5jR6oBpxwZN825U7qXGGkzRtA0cJsCyZfumSSDkSW0oLA0ncGCdyz0fVFfaXY77
mLgJH.HBXU/cfYSbMVw
```

- Here the custom_addons path is essential for creating our own customized modules because the default addons can not be changed
- The addons path can be identified as the file location handled.

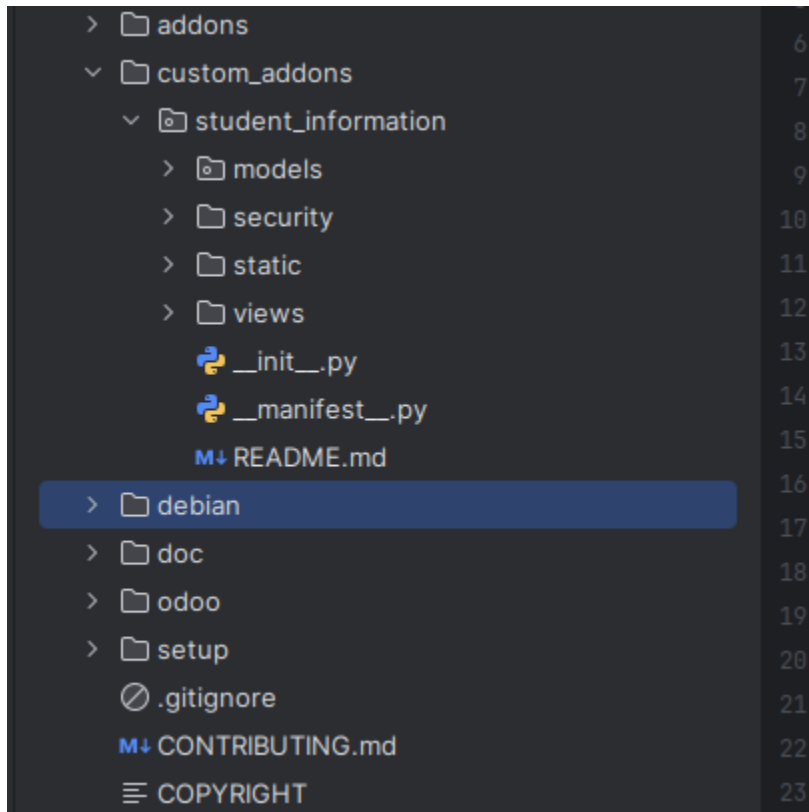
ProgresSQL database setup

- Install the progresssql for the database.
- Give it the proper user and authentication items to access the database from pycharm and odoo server.

Basic File Structure

- Under the custom addons directory create a directory named as the module.
- Then create all the basic directories and files to run the odoo server.
- Models, security, static, views basic directories and __init__.py, __manifest__.py

- The above point is the basic directories and files.



Basic File contents

- **In model directory:** [all the data tables are handled here]
 - ❖ __init__.py (basic file) which initializes all the models(table) to the module.
 - ❖ Others are all the database table models generated here.
- **In security directory:** the security between models and views handled here.
- **In static directory:** [it contains the (src) directory]
 - ❖ img(images), xml(templates), js(java script) files contained here.
- **In views directory:** [contains all the user interface views xml files, actions, and records].

- **__init__.py**: this file initialises the root model of the module.
(from . import models)
- **__manifest__.py**: this file contains all the attributes which are essential for run the module in odoo server as below,

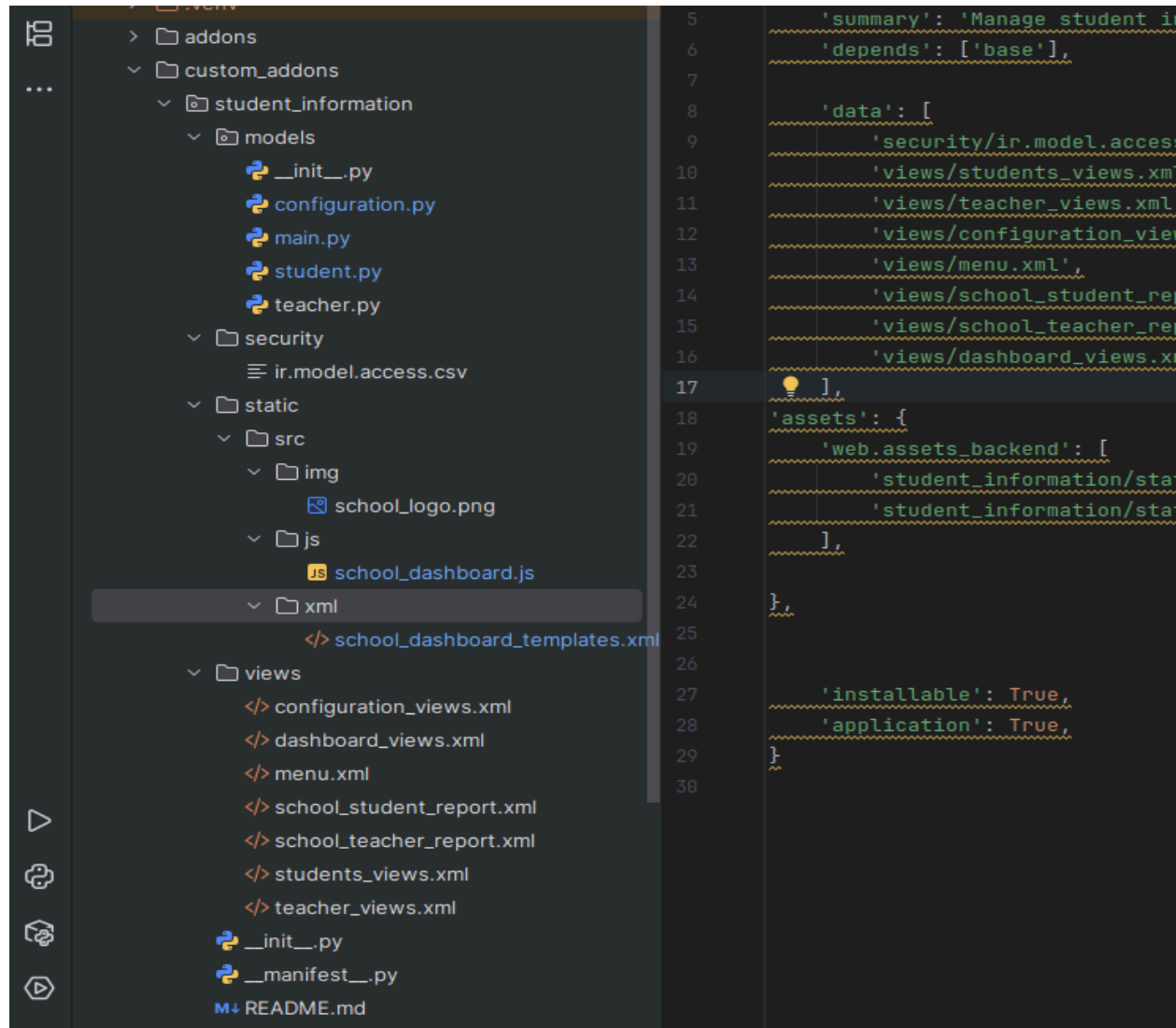
```
{
    'name': 'School Management',
    'version': '1.0',
    'category': 'Education',
    'summary': 'Manage student information',
    'depends': ['base'],

    'data': [
        'security/ir.model.access.csv',
        'views/students_views.xml',
        'views/teacher_views.xml',
        'views/configuration_views.xml',
        'views/menu.xml',
        'views/school_student_report.xml',
        'views/school_teacher_report.xml',
        'views/dashboard_views.xml',
    ],

    'assets': {
        'web.assets_backend': [
            'student_information/static/src/js/school_dashboard.js',
            'student_information/static/src/xml/school_dashboard_templates.xml',
        ],
    },

    'installable': True,
    'application': True,
}
```

Here the manifest file contains (data) attribute which initializes the modulus security file and views xm files, (assets) attribute which initializes the backends as like js,template xml files. So the ultimate minimum basic structure would be that as like below,



- So the Static director: [img, js, xml]

- ❖ **img** directory: contains all the images, icons, logos.
- ❖ **js** directory: contains all the javascript codes as (.js) file.
- ❖ **xml** directory: contains the templates (.xml) files.

All the views

- **student_views.xml**

```
<odoo>
  <!-- Search View -->
  <record id="view_school_student_search" model="ir.ui.view">
    <field name="name">school.student.search</field>
    <field name="model">school.student</field>
    <field name="arch" type="xml">
      <search string="Search Students">
        <field name="class_id"/>
        <field name="section_id"/>
        <field name="institution_id"/>
        <field name="name"/>
        <field name="roll_number"/>
      </search>
    </field>
  </record>

  <!-- Student Form View -->
  <record id="view_school_student_form" model="ir.ui.view">
    <field name="name">school.student.form</field>
    <field name="model">school.student</field>
    <field name="arch" type="xml">
      <form string="Student">
        <sheet>
          <group>
            <field name="name"/>
            <field name="roll_number"/>
            <field name="age"/>
            <field name="gender"/>
            <field name="date_of_birth"/>
            <field name="email"/>
            <field name="phone"/>
            <field name="class_id"/>
            <field name="section_id"/>
            <field name="institution_id"/>
            <field name="address"/>
            <field name="student_image" widget="image" class="oe_avatar"
              options="{ 'preview_image': 'student_image' }"/>
          </group>
        </sheet>
      </form>
    </field>
  </record>
</odoo>
```

```

    </field>
</record>

<!-- Student List View -->
<record id="view_school_student_list" model="ir.ui.view">
    <field name="name">school.student.list</field>
    <field name="model">school.student</field>
    <field name="arch" type="xml">
        <list string="Students">
            <field name="student_image" widget="image" class="oe_avatar"
                options="{ 'preview_image': 'student_image' }"/>
            <field name="name"/>
            <field name="roll_number"/>
            <field name="age"/>
            <field name="gender"/>
            <field name="email"/>
            <field name="class_id"/>
            <field name="section_id"/>
            <field name="institution_id"/>
        </list>
    </field>
</record>

<!-- Action -->
<record id="action_school_student" model="ir.actions.act_window">
    <field name="name">Students</field>
    <field name="res_model">school.student</field>
    <field name="view_mode">list,form</field>
</record>
</odoo>

```

- **teacher_views.xml**

```

<odoo>
    <record id="view_school_teacher_form" model="ir.ui.view">
        <field name="name">school.teacher.form</field>
        <field name="model">school.teacher</field>
        <field name="arch" type="xml">

```

```

    <form string="Teacher">
        <sheet>
            <group>
                <field name="name"/>
                <field name="employee_id"/>
                <field name="gender"/>
                <field name="phone"/>
                <field name="email"/>
                <field name="address"/>
                <field name="hire_date"/>
                <field name="teacher_image" widget="image" class="oe_avatar"
options="{ 'preview_image': 'teacher_image' }"/>
            </group>
        </sheet>
    </form>
</field>
</record>

<record id="view_school_teacher_list" model="ir.ui.view">
    <field name="name">school.teacher.list</field>
    <field name="model">school.teacher</field>
    <field name="arch" type="xml">
        <list string="Teachers">
            <field name="teacher_image" widget="image" class="oe_avatar"
options="{ 'preview_image': 'teacher_image' }"/>
            <field name="name"/>
            <field name="employee_id"/>
            <field name="phone"/>
            <field name="email"/>
            <field name="hire_date"/>
        </list>
    </field>
</record>

<record id="action_school_teacher" model="ir.actions.act_window">
    <field name="name">Teachers</field>
    <field name="res_model">school.teacher</field>
    <field name="view_mode">list,form</field>
</record>

</odoo>

```


- **menu_view.xml**

```
<odoo>
  <!-- Root of Menu -->
  <menuitem id="school_menu_root" name="School" sequence="20"/>

  <!-- Add to Menu -->

  <!-- Students under School-->
  <menuitem id="menu_school_students" name="Students"
parent="school_menu_root" sequence="2"/>
  <menuitem id="menu_school_student_action" name="Manage Students"
    parent="menu_school_students"
    action="action_school_student" sequence="1"/>

  <!-- Teachers under School-->
  <menuitem id="menu_school_teachers" name="Teachers"
parent="school_menu_root" sequence="3"/>
  <menuitem id="menu_school_teacher_action" name="Manage Teachers"
    parent="menu_school_teachers"
    action="action_school_teacher" sequence="1"/>

  <!-- Configuration -->
  <menuitem id="menu_school_configuration" name="Configuration"
parent="school_menu_root" sequence="4"/>

  <!-- Classes under Configuration -->
  <menuitem id="menu_school_class" name="Classes"
    parent="menu_school_configuration"
    action="action_school_class" sequence="1"/>

  <!-- Sections under Configuration -->
  <menuitem id="menu_school_section" name="Sections"
    parent="menu_school_configuration"
    action="action_school_section" sequence="2"/>

  <!-- Institution under Configuration -->
  <menuitem id="menu_school_institution" name="Institution Name"
    parent="menu_school_configuration"
    action="action_school_institution" sequence="3"/>

</odoo>
```

- **configuration_views.xml**

```
<odoo>
  <!-- Class Form -->
  <record id="view_school_class_form" model="ir.ui.view">
    <field name="name">school.class.form</field>
    <field name="model">school.class</field>
    <field name="arch" type="xml">
      <form string="Class">
        <sheet>
          <group>
            <field name="name"/>
          </group>
        </sheet>
      </form>
    </field>
  </record>

  <!-- Class List -->
  <record id="view_school_class_list" model="ir.ui.view">
    <field name="name">school.class.list</field>
    <field name="model">school.class</field>
    <field name="arch" type="xml">
      <list string="Classes">
        <field name="name"/>
      </list>
    </field>
  </record>

  <!-- Section Form -->
  <record id="view_school_section_form" model="ir.ui.view">
    <field name="name">school.section.form</field>
    <field name="model">school.section</field>
    <field name="arch" type="xml">
      <form string="Section">
        <sheet>
          <group>
            <field name="name"/>
          </group>
        </sheet>
      </form>
    </field>
  </record>
```

```

<!-- Section List -->
<record id="view_school_section_list" model="ir.ui.view">
  <field name="name">school.section.list</field>
  <field name="model">school.section</field>
  <field name="arch" type="xml">
    <list string="Sections">
      <field name="name"/>
    </list>
  </field>
</record>

<!-- institution from -->
<record id="view_school_institution_form" model="ir.ui.view">
  <field name="name">school.institution.form</field>
  <field name="model">school.institution</field>
  <field name="arch" type="xml">
    <form string="Institution">
      <sheet>
        <group>
          <field name="name"/>
        </group>
      </sheet>
    </form>
  </field>
</record>

<!-- Instruction List -->
<record id="view_school_institution_list" model="ir.ui.view">
  <field name="name">school.institution.list</field>
  <field name="model">school.institution</field>
  <field name="arch" type="xml">
    <list string="Institution">
      <field name="name"/>
    </list>
  </field>
</record>

<record id="action_school_class" model="ir.actions.act_window">
  <field name="name">Classes</field>
  <field name="res_model">school.class</field>
  <field name="view_mode">list,form</field>
</record>

```

```

<record id="action_school_section" model="ir.actions.act_window">
  <field name="name">Sections</field>
  <field name="res_model">school.section</field>
  <field name="view_mode">list,form</field>
</record>

<record id="action_school_institution" model="ir.actions.act_window">
  <field name="name">Institution Name</field>
  <field name="res_model">school.institution</field>
  <field name="view_mode">list,form</field>
</record>
</odoo>

```

- **school_student_report.xml**

```

<odoo>
  <template id="custom_HF_student_layout">
    <div class="header">
      <div class="row" style="report_header_style">
        <div>
          <div style="flex: 0 0 auto;">
            
          </div>
          <h1>Deffodil International School</h1>
          <p style="margin: 0; padding: 0;">123 School Road, Dhaka, Bangladesh</p>
          <p style="margin: 0; padding: 0;">Contact: +8801XXXXXXXXXX | Email:
info@deffodil.edu.bd | <strong>Session:</strong> 2024-2025</p>
        </div>
      </div>
    </div>
    <main class="article o_report_layout_standard">
      <t t-row="0" />
    </main>
    <div class="footer o_standard_footer">
      <div class="row" style="report_footer_style">
        <p>@Copyrigths Page | DSL createdby Moshin Khan(odoo developer)</p>
      </div>
    </div>
  </template>
  <!-- template for the report and process the report -->
  <template id="report_school_student_document">
    <t t-call="student_information.custom_HF_student_layout">

```

```

<t t-foreach="docs" t-as="student">
  <div class="page" style="page-break-after: always; border: 1px solid #ddd; padding:
20px; margin-bottom: 20px;">
    <h2 style="text-align: center;">Student Information</h2>

    <div style="display: flex; gap: 20px; align-items: flex-start;">
      <!-- Student Photo -->
      <div style="flex: 0 0 auto;">
        <t t-if="student.student_image">
          
        </t>
        <t t-if="not student.student_image">
          <div style="width: 120px; height: 120px; border: 1px solid #000; display: flex;
align-items: center; justify-content: center;">
            <span>No Photo</span>
          </div>
        </t>
      </div>

      <!-- Student Details -->
      <div style="flex: 1;">
        <p><strong>Full Name:</strong> <t t-esc="student.name"/></p>
        <p><strong>Roll Number:</strong> <t t-esc="student.roll_number"/></p>
        <p><strong>Class:</strong> <t t-esc="student.class_id.name"/></p>
        <p><strong>Section:</strong> <t t-esc="student.section_id.name"/></p>
        <p><strong>Institution:</strong> <t t-esc="student.institution_id.name"/></p>
        <p><strong>Age:</strong> <t t-esc="student.age"/></p>
        <p><strong>Gender:</strong> <t t-esc="student.gender"/></p>
        <p><strong>Email:</strong> <t t-esc="student.email"/></p>
        <p><strong>Phone:</strong> <t t-esc="student.phone"/></p>
      </div>
    </div>

  </t>
</template>
<!-- action working against the report -->
<record id="action_report_school_student" model="ir.actions.report">
  <field name="name">Print</field>
  <field name="model">school.student</field>

```

```

        <field name="report_type">qweb-pdf</field>
        <field
name="report_name">student_information.report_school_student_document</field>
        <field
name="report_file">student_information.report_school_student_document</field>
        <field name="binding_model_id" ref="model_school_student"/>
        <field name="binding_type">report</field>
    </record>
</odoo>

```

- **school_teahcer_report.xml**

```

<odoo>
  <template id="custom_HF_teacher_layout">
    <div class="header">
      <div class="row" style="report_header_style">
        <!-- Logo -->
        <div>
          <div style="flex: 0 0 auto;">
            
          </div>
          <h1>Deffodil International School</h1>
          <p style="margin: 0; padding: 0;">123 School Road, Dhaka, Bangladesh</p>
          <p style="margin: 0; padding: 0;">Contact: +8801XXXXXXXXXX | Email:
info@deffodil.edu.bd | <strong>Session:</strong> 2024-2025</p>
        </div>
      </div>
    </div>
    <main class="article o_report_layout_standard">
      <t t-out="0" />
    </main>
    <div class="footer o_standard_footer">
      <div class="row">
        <p>@Copyrigths Page | DSL createdby Moshin Khan(odoo developer)</p>
      </div>
    </div>
  </template>
  <!-- template for the report and process the report -->
  <template id="report_school_teacher_document">
    <t t-call="student_information.custom_HF_teacher_layout">

      <t t-foreach="docs" t-as="teacher">

```

```

<div class="page" style="page-break-after: always; border: 1px solid #ddd; padding:
20px; margin-bottom: 20px;">
  <h2 style="text-align: center;">Teacher Information</h2>

  <div style="display: flex; gap: 20px; align-items: flex-start;">
    <!-- Teacher Photo -->
    <div style="flex: 0 0 auto;">
      <t t-if="teacher.teacher_image">
        <img t-att-src=""data:image/png;base64,%s' %
teacher.teacher_image.decode('utf-8')" width="120" height="120" style="border: 1px
solid #000;" />
      </t>
      <t t-if="not teacher.teacher_image">
        <div style="width: 120px; height: 120px; border: 1px solid #000; display: flex;
align-items: center; justify-content: center;">
          <span>No Photo</span>
        </div>
      </t>
    </div>

    <!-- Teacher Details -->
    <div style="flex: 1;">
      <p><strong>Full Name:</strong> <t t-esc="teacher.name"/></p>
      <p><strong>Employee ID:</strong> <t t-esc="teacher.employee_id"/></p>
      <p><strong>Phone:</strong> <t t-esc="teacher.phone"/></p>
      <p><strong>Email:</strong> <t t-esc="teacher.email"/></p>
      <p><strong>Address:</strong> <t t-esc="teacher.address"/></p>
      <p><strong>Hire Date:</strong> <t t-esc="teacher.hire_date"/></p>
      <p><strong>Gender:</strong> <t t-esc="teacher.gender"/></p>
    </div>
  </div>
</t>

</t>
</template>

<!-- action working against the report -->
<record id="action_report_school_teacher" model="ir.actions.report">
  <field name="name">Print</field>
  <field name="model">school.teacher</field>
  <field name="report_type">qweb-pdf</field>
  <field
name="report_name">student_information.report_school_teacher_document</field>

```

```

    <field
name="report_file">student_information.report_school_teacher_document</field>
    <field name="binding_model_id" ref="model_school_teacher"/>
    <field name="binding_type">report</field>
</record>
</odoo>

```

- **dashboard_views.xml**

```

<odoo>
  <!-- Dashboard Menu under School -->
  <menuitem id="menu_school_dashboard" name="Dashboard"
parent="school_menu_root" sequence="1"/>

  <!-- Dashboard Client Action -->
  <record id="action_school_dashboard" model="ir.actions.client">
    <field name="name">School Dashboard</field>
    <field name="tag">school_dashboard</field>
  </record>

  <!-- Link Dashboard Menu to Action-->
  <menuitem id="menu_school_dashboard_action"
    name="School Dashboard"
    parent="menu_school_dashboard"
    action="action_school_dashboard"
    sequence="1"/>
</odoo>

```

Security directory (file name: ir.model.access.csv)

```

id,name,model_id:id,group_id:id,perm_read,perm_write,perm_create,perm_unlink
access_school_student,access_school_student,model_school_student,,1,1,1,1
access_school_teacher,access_school_teacher,model_school_teacher,,1,1,1,1
access_school_class,access_school_class,model_school_class,,1,1,1,1
access_school_section,access_school_section,model_school_section,,1,1,1,1
access_school_institution,access_school_institution,model_school_institution,,1,1,1,1

```

We can see many other security files here depends on our project security.

All the models

- **student.py**

```
from odoo import models, fields, api

class Student(models.Model):
    _name = 'school.student'
    _description = 'Student Information'

    name = fields.Char(string='Full Name', required=True)
    roll_number = fields.Char(string='Roll Number', required=True)
    age = fields.Integer(string='Age')
    gender = fields.Selection([
        ('male', 'Male'),
        ('female', 'Female'),
        ('other', 'Other')
    ], string='Gender')
    date_of_birth = fields.Date(string='Date of Birth')
    email = fields.Char(string='Email')
    phone = fields.Char(string='Phone')
    # joining relation operations here
    class_id = fields.Many2one('school.class', string='Class')
    section_id = fields.Many2one('school.section', string='Section')
    institution_id = fields.Many2one('school.institution', string='Institution')
    address = fields.Text(string='Address')
    student_image = fields.Binary(string="Photo")
    active = fields.Boolean(string='Active', default=True)

    # Computed field to get total student count
    total_students = fields.Integer(string='Total Students',
    compute='_compute_total_students')

    @api.depends()
    def _compute_total_students(self):
        # This method returns the total number of students in the database
        count = self.env['school.student'].search_count([])
        for record in self:
            record.total_students = count

    @api.model
    def get_student_count(self):
        return self.search_count([])

    @api.onchange('class_id')
    def _onchange_class_id(self):
        if self.class_id:
            self.institution_id = self.class_id.institution_id

    @api.onchange('section_id')
```

```
def _onchange_section_id(self):
    if self.section_id:
        self.institution_id = self.section_id.institution_id
```

- **teacher.py**

```
from odoo import models, fields, api
```

```
class Teacher(models.Model):
    _name = 'school.teacher'
    _description = 'Teacher Information'

    name = fields.Char(string='Full Name', required=True)
    employee_id = fields.Char(string='Employee ID', required=True)
    phone = fields.Char(string='Phone')
    email = fields.Char(string='Email')
    address = fields.Text(string='Address')
    hire_date = fields.Date(string='Hire Date')
    gender = fields.Selection([
        ('male', 'Male'),
        ('female', 'Female'),
        ('other', 'Other')
    ], string='Gender')
    teacher_image = fields.Binary(string="Photo")
    active = fields.Boolean(string='Active', default=True)

    @api.depends()
    def _compute_total_teachers(self):
        # This method returns the total number of teachers in the database
        countTeacher = self.env['school.teacher'].search_count([])
        for record in self:
            record.total_teachers = countTeacher

    @api.model
    def get_teacher_count(self):
        return self.search_count([])
```

- **configuration.py**

```
class SchoolClass(models.Model):
    _name = 'school.class'
    _description = 'School Class'

    name = fields.Char(string='Class Name', required=True)
    institution_id = fields.Many2one('school.institution', string='Institution')

class SchoolSection(models.Model):
    _name = 'school.section'
    _description = 'School Section'

    name = fields.Char(string='Section Name', required=True)
    institution_id = fields.Many2one('school.institution', string='Institution')

class SchoolInstitution(models.Model):
    _name = 'school.institution'
    _description = 'School Institution'

    name = fields.Char(string='Institution Name', required=True)
```

- **main.py (the controller) its with controller**

```
from odoo import http
from odoo.http import request

class SchoolDashboardController(http.Controller):

    @http.route('/school_dashboard/student_count', type='json', auth='user')
    def student_count(self):
        countStudent = request.env['school.student'].search_count([])
        return {'count': countStudent}

    @http.route('/school_dashboard/teacher_count', type='json', auth='user')
    def teacher_count(self):
        countTeacher = request.env['school.teacher'].search_count([])
        return {'count': countTeacher}

    @http.route('/school_dashboard/institution_data', type='json', auth='user')
    def institution_data(self, institution_id=None):
        domain = []
        if institution_id:
```

```

        domain = [('institution_id', '=', int(institution_id))]

        student_count = request.env['school.student'].search_count(domain)
        # Classes: unique class_ids from students
        # class_ids =
        request.env['school.student'].search(domain).mapped('class_id').filtered(lambda c: c)
        # class_count = len(class_ids)
        # Sections: unique section_ids from students
        # section_ids =
        request.env['school.student'].search(domain).mapped('section_id').filtered(lambda s: s)
        # section_count = len(section_ids)

        # working for the student, class and section count if institution selected or
        # unselected
        # when select a institution it will show the count of student class and section under
        # the institution assigned
        # if we select all institution it will show all the student assigned student class and
        # section count
        students = request.env['school.student'].search(domain)
        if institution_id:
            class_count = len(students.mapped('class_id').filtered(lambda c: c))
            section_count = len(students.mapped('section_id').filtered(lambda s: s))
        else:
            # No institution filter → show total assigned unique classes & sections
            all_students = request.env['school.student'].search([])
            class_count = len(all_students.mapped('class_id').filtered(lambda c: c))
            section_count = len(all_students.mapped('section_id').filtered(lambda s: s))

        return {
            'student_count': student_count,
            'class_count': class_count,
            'section_count': section_count,
        }

    @http.route('/school_dashboard/institutions', type='json', auth='user')
    def get_institutions(self):
        institutions = request.env['school.institution'].search([])
        return {
            'institutions': [{'id': inst.id, 'name': inst.name} for inst in institutions]
        }

```

Javascript file

- **school_dashboard.js**

```
/** @odoo-module */

import { registry } from "@web/core/registry";
import { Component, useState, onWillStart } from "@odoo/owl";
import { rpc } from "@web/core/network/rpc";

class SchoolDashboard extends Component {
  setup() {
    this.state = useState({ studentCount: 0,
      teacherCount: 0,
      institutions: [],
      selectedInstitution: 0,
      studentCount: 0,
      classCount: 0,
      sectionCount: 0});

    onWillStart(async () => {
      const result1 = await rpc("/school_dashboard/student_count", {});
      const result2 = await rpc("/school_dashboard/teacher_count", {});
      const institutionsResult = await rpc("/school_dashboard/institutions", {});
      this.state.studentCount = result1.count;
      this.state.teacherCount = result2.count;
      this.state.institutions = institutionsResult.institutions;
    });
  }

  async loadData() {
    const data = await rpc("/school_dashboard/institution_data", {
      institution_id: this.state.selectedInstitution || null,
    });
    this.state.studentCount = data.student_count;
    this.state.classCount = data.class_count;
    this.state.sectionCount = data.section_count;
  }

  async onInstitutionChange(ev) {
    this.state.selectedInstitution = parseInt(ev.target.value);
    await this.loadData();
  }
}
```

```
SchoolDashboard.template = "DashboardTemplate";

registry.category("actions").add("school_dashboard", SchoolDashboard);
```

Template file

- **school_dashboard_templates.xml**

```
<template id="DashboardTemplate" name="School Dashboard">
  <t t-name="DashboardTemplate">
    <div class="o_container" style="max-width: 800px; margin: 0 auto; padding: 2em;
font-family: Arial, sans-serif;">

      <h1 style="font-size: 2em; margin-bottom: 1em; color: #2c3e50; text-align: center;">
 School Dashboard
      </h1>

      <div style="margin-bottom: 1.5em;">
        <label style="font-weight: bold; margin-right: 0.5em;">
 Select Institution:
        </label>
        <select t-on-change="onInstitutionChange"
          style="padding: 0.5em 1em; border: 1px solid #ccc; border-radius: 4px;">
          <option t-att-value="0">-- All Institutions --</option>
          <t t-foreach="state.institutions" t-as="inst" t-key="inst.id">
            <option t-att-value="inst.id">
              <t t-esc="inst.name"/>
            </option>
          </t>
        </select>
      </div>

      <div style="display: flex; gap: 1em;">
        <div style="flex: 1; padding: 1.5em; background: #f9f9f9; border-radius: 8px;
box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
          <div style="font-size: 2em; color: #2980b9;">
            <t t-esc="state.studentCount"/>
          </div>
          <div style="margin-top: 0.5em; color: #555;">
 Total Students
          </div>
        </div>
      </div>
```

```

        <div style="flex: 1; padding: 1.5em; background: #f9f9f9; border-radius: 8px;
        box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
            <div style="font-size: 2em; color: #27ae60;">
                <t t-esc="state.classCount"/>
            </div>
            <div style="margin-top: 0.5em; color: #555;">
                🏠 Total Classes
            </div>
        </div>

        <div style="flex: 1; padding: 1.5em; background: #f9f9f9; border-radius: 8px;
        box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
            <div style="font-size: 2em; color: #8e44ad;">
                <t t-esc="state.sectionCount"/>
            </div>
            <div style="margin-top: 0.5em; color: #555;">
                📖 Total Sections
            </div>
        </div>
    </div>
</t>
</template>

```

Now here the backend and frontend connection for beginners:

dashboard_view:

```

<odoo>
    <!-- Dashboard Menu under School -->
    <menuitem id="menu_school_dashboard" name="Dashboard" parent="school_menu_root"
sequence="1"/>

    <!-- Dashboard Client Action -->
    <record id="action_school_dashboard" model="ir.actions.client">
        <field name="name">School Dashboard</field>
        <field name="tag">school_dashboard</field>
    </record>

```

```

<!-- Link Dashboard Menu to Action -->
<menuitem id="menu_school_dashboard_action"
  name="School Dashboard"
  parent="menu_school_dashboard"
  action="action_school_dashboard"
  sequence="1"/>
</odoo>

```

static/src/xml/template_views:

```

<template id="DashboardTemplate" name="School Dashboard">
  <t t-name="DashboardTemplate">
    <div style="padding:2em;">
      <h1>Hello World!</h1>
    </div>
  </t>
</template>

```

static/src/js:

```

/** @odoo-module */

```

```

import { registry } from "@web/core/registry";
import { Component } from "@odoo/owl";

```

```

class SchoolDashboard extends Component {}

```

```

SchoolDashboard.template = "DashboardTemplate";

```

```

registry.category("actions").add("school_dashboard", SchoolDashboard);

```

Edit the manifest

```

'data': [
  <--add the view file-->
  'views/dashboard_views.xml',
],

'assets': {
  <--add the template file and js file-->
  'web.assets_backend': [

```



```
'student_information/static/src/js/school_dashboard.js',  
'student_information/static/src/xml/school_dashboard_templates.xml'  
],
```

- **main.py its without using controller**

❖ **Model file → custom_dashboard.py**

```
from odoo import api, fields, models  
class SchoolDashboardData(models.Model):  
    _name = 'school.dashboard.data'  
    _description = 'Dashboard Data'  
  
    @api.model  
    def get_dashboard_counts(self, institution_id=None, **kwargs):  
        counts = {  
            'student_count': 0,  
            'teacher_count': 0,  
            'class_count': 0,  
            'section_count': 0,  
        }  
        if institution_id:  
            domain = [('institution_id', '=', institution_id)]  
            counts['student_count'] = self.env['school.student'].search_count(domain)  
            counts['teacher_count'] = self.env['school.teacher'].search_count(domain)  
            counts['class_count'] = self.env['school.class'].search_count(domain)  
            counts['section_count'] = self.env['school.section'].search_count(domain)  
        return counts  
  
    @api.model  
    def get_institutions(self, **kwargs):  
        institutions = self.env['school.institution'].search([])  
        return [{'id': inst.id, 'name': inst.name} for inst in institutions]
```

❖ Custom_dashboard.js the js file

```
import { registry } from "@web/core/registry";
import { Component, useState, onWillStart } from "@odoo/owl";
import { rpc } from "@web/core/network/rpc";

class CustomDashboard extends Component {
  setup() {
    this.state = useState({
      institutions: [],
      selectedInstitution: null,
      studentCount: 0,
      teacherCount: 0,
      classCount: 0,
      sectionCount: 0,});

    onWillStart(async () => {
      // Load institutions
      this.state.institutions = await rpc("/web/dataset/call_kw", {
        model: "school.dashboard.data",
        method: "get_institutions",
        args: [],
        kwargs: {},});});
  }

  async onInstitutionChange(ev) {
    const institutionId = parseInt(ev.target.value);
    this.state.selectedInstitution = institutionId || null;

    const counts = await rpc("/web/dataset/call_kw", {
      model: "school.dashboard.data",
      method: "get_dashboard_counts",
      args: [],
      kwargs: { institution_id: institutionId },
    });


    this.state.studentCount = counts.student_count;
    this.state.teacherCount = counts.teacher_count;
    this.state.classCount = counts.class_count;
    this.state.sectionCount = counts.section_count;
  }
}


CustomDashboard.template = "CustomDashboardTemplate";
```


```
CustomDashboard.props = {};
registry.category("actions").add("custom_dashboard",
CustomDashboard);
```

❖ Custom_dashboard_template.xml template fils

```
<templates id="template" xml:space="preserve">
  <t t-name="CustomDashboardTemplate">
    <div class="o_container" style="max-width: 800px; margin: 0 auto;
padding: 2em; font-family: Arial, sans-serif;">

      <h1 style="font-size: 2em; margin-bottom: 1em; color: #2c3e50;
text-align: center;">
 School Dashboard
      </h1>

      <div style="margin-bottom: 1.5em;">
        <label style="font-weight: bold; margin-right: 0.5em;">
 Select Institution:
        </label>
        <select t-on-change="onInstitutionChange"
style="padding: 0.5em 1em; border: 1px solid #ccc;
border-radius: 4px;">
          <option value="">-- Select Institution --</option>
          <t t-foreach="state.institutions" t-as="inst" t-key="inst.id">
            <option t-att-value="inst.id">
              <t t-esc="inst.name"/>
            </option>
          </t>
        </select>
      </div>

      <div style="display: grid; grid-template-columns: repeat(auto-fit,
minmax(160px, 1fr)); gap: 1em;">
        <!-- Students -->
        <div style="padding: 1.5em; background: #f9f9f9; border-radius: 8px;
box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
          <div style="font-size: 2em; color: #2980b9;">
            <t t-esc="state.studentCount"/>
          </div>
          <div style="margin-top: 0.5em; color: #555;">
 Total Students
          </div>
        </div>
      </div>
```

```

<!-- Teachers -->
<div style="padding: 1.5em; background: #f9f9f9; border-radius: 8px;
box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
  <div style="font-size: 2em; color: #c0392b;">
    <t t-esc="state.teacherCount"/>
  </div>
  <div style="margin-top: 0.5em; color: #555;">
     Total Teachers
  </div>
</div>

<!-- Classes -->
<div style="padding: 1.5em; background: #f9f9f9; border-radius: 8px;
box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
  <div style="font-size: 2em; color: #27ae60;">
    <t t-esc="state.classCount"/>
  </div>
  <div style="margin-top: 0.5em; color: #555;">
     Total Classes
  </div>
</div>

<!-- Sections -->
<div style="padding: 1.5em; background: #f9f9f9; border-radius: 8px;
box-shadow: 0 1px 3px rgba(0,0,0,0.1); text-align: center;">
  <div style="font-size: 2em; color: #8e44ad;">
    <t t-esc="state.sectionCount"/>
  </div>
  <div style="margin-top: 0.5em; color: #555;">
     Total Sections
  </div>
</div>

</div>
</t>
</templates>

```

❖ The menu view for the custom_dashboard.xml

```
<odoo>
  <!-- Dashboard Menu -->
  <menuitem id="menu_custom_dashboard"
name="Custom_Dashboard" parent="school_menu_root" sequence="5"/>

  <!-- Dashboard Client Action -->
  <record id="action_custom_dashboard" model="ir.actions.client">
    <field name="name">Custom Dashboard</field>
    <field name="tag">custom_dashboard</field>
  </record>

  <!-- Link Menu to Action -->
  <menuitem id="menu_custom_dashboard_action"
    name="Custom Dashboard"
    parent="menu_custom_dashboard"
    action="action_custom_dashboard"
    sequence="1"/>
</odoo>
```