**BIT201 Tutorial 6: Architectural Design**

Consider a Student Application system (SAS) that will handle student applications for the various universities in Malaysia. Using the system, students may apply to any of the registered universities from anywhere in the world. The SAS Admin will have to register universities that are interested to be featured on the portal. The university registry staff can then record the various programmes that are offered and the programme heads who will be responsible for processing applications.

1. What kind of deployment is required for this system: internal, external or distributed environment?  
   Distributed
2. Draw the network diagram for the system.

Diagram

Description automatically generated

1. For internet deployment, should the system use HTTPS or VPN? Justify your reasons.
2. Draw the use case diagram

Diagram

Description automatically generated

An expanded use case “Submit Application” has been developed :

|  |  |  |
| --- | --- | --- |
| **Use Case Name** | **Submit Application** | |
| **Scenario** | An Applicant wants to submit an application for a programme at a university. | |
| **Triggering Event** | An Applicant selects to submit an application | |
| **Goal in Context** | The applicant enters details about themselves such as name, id no, nationality, address and their qualifications (date and title and awarding institution) . They have to choose a programme at a university and submit the application for that programme. The submission is confirmed and an appliction ID is generated. | |
| **Actors** | Applicant | |
| **Flow of Activities** | **Actor Action** | **System Response** |
|  | 1. The applicant selects the name of the university that they are interested in. | A list of programmes showing the programme code, programme name and duration is displayed. |
| 1. The applicant selects the programme code of the programme that they want to apply for. | An application ID is automatically generated for the application. The application date is set to the current date and the status is set to “new application” |
| 1. The applicant enters his or her IC/passport number. | Checks whether the applicant’s information already exists in the system |
| 1. The applicant enters his or her name, IC/passport number, nationality and address. | The applicant record is created. |
| 1. The applicant enters information about a qualification obtained, including the title, year awarded, awarding institution and result. | The qualification is recorded and an option to upload a document is displayed. |
| 1. The applicant uploads a file for the supporting documentation for a qualification. | The filename is recorded and the document is stored. |
|  | 1. The applicant confirms the application. | A summary of the applicant information is shown and the application is submitted for the programme with the applicant information. |
| **Exception Conditions** | Line 3: If the applicant information already exists, skip to line 7.  Lines 5 and 6: Repeat for additional qualifications  Line 7: If the applicant would like to change the information entered, go back to Line 4. | |

1. Draw the Class Diagram based on the expanded use case.
2. Draw the System Sequence Diagram
3. Write the Contracts