# Annexure 1

**Task 1: User Requirements**

**Task 1a**

**Clearly outline the objective of the task (what are you going to do):**

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| **The objective is to create an educational application that allows users to test and develop their knowledge. The application should include features for user management (login/signup), test creation, and a community space to share creations. It is designed to be highly dynamic, with adjustable controls and different screen views to provide a flexible and engaging user experience. The application's core function is to assist learners in maturing their understanding of topics and improve the efficiency of the learning process.** |

**Task 1b**

**User stories**

Example of a user story:

**As a** … **I would like to** … **so that I can** …

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| As a … | I would like to … | so that I can … |
| Student | Login in and sign up for an account | Access educational resources and track my progress |
| Educator | Be able to create and upload tests | Assess my students’ understanding and provide them with new challenging concepts |

# Annexure 2

**Task 2: Acceptance test**

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| Acceptance test (when you know the user story has been completed) |
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**OR** complete the sentences below:

* The system shall provide a secure interface for new users to sign up and for existing users to log in to their accounts
* The system shall be able to seamlessly switch between different screens
* The system shall be able to resize the UI elements according to the screen space assigned to the application
* The system shall allow the creation of tests and the loading of test data from JSON objects
* The system shall allow the monitoring of a students’ performance

# Annexure 3

**Task 3: Navigation design between the different screens**

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# Annexure 4

**Task 4: Screen Design**

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| **Screen 1: Home Screen** | **components** | |
|  | **Form** | **frmMain** |
| **Button** | **btnLogin, btnSignUp, tbnTheme** |
| **Image** | **imgCanvas** |
| **Frame** | **frmUI** |
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| **Screen 2: Sign Up screen** | **components** | |
|  | **Form** | **frmMain** |
| **Button** | **btnBack, btnSignUp** |
| **Label** | **lblName,lblPassword** |
| **Edit** | **edtName,edtPassword** |
| **Panel** | **pnlStudent,pnlEducator** |
| **Frame** | **frmUI** |
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| **Screen 3: Create Screen** | **Components** | |
|  | **Form** | **frmMain** |
| **Button** | **btnBack, btnCreate** |
| **Label** | **lblTitle, lblDescription** |
| **Edit** | **edtTitle, edtDescription** |
| **Image** | **imgIcon** |
| **Frame** | **frmUI** |
| **Panel** | **pnlHeader** |
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# Annexure 5

**Task 5: IPO table with validation**

**Screen 1: Home Screen**

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| **Input** | | **Processing** | **Output** | |
| **Type of Input** | **Input validation** | **(TWO Algorithms / pseudo code)** | **Output component** | **Format of output** |
| **Input: btnSignUpClick**  **Component: btnSignUp**  **Component type: TButton** | **none** | **Begin**  **clearScreen;**  **SignUpScreen;**  **end** | **frmUI** | **Show SignUpScreen** |
| **Input: btnLoginClick**  **Component: btnLogin**  **Component type: TButton** | **none** | **Begin**  **clearScreen;**  **LoginScreen;**  **end** | **frmUI** | **Show Login Screen** |
| **Input: btnThemeClick**  **Component: btnTheme**  **Component type: TButton** | **none** | **Begin**  **if (bDarkMode) then**  **begin**  **setSetting('DarkMode', 0);**  **bDarkMode := false;**  **updateColorPalate;**  **end**  **else**  **begin**  **setSetting('DarkMode', 1);**  **bDarkMode := true;**  **updateColorPalate;**  **end;**  **end** | **frmUI** | **Change background color** |

**Screen 2: Sign Up Screen**

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| **Input** | | **Processing** | **Output** | |
| **Type of Input** | **Input validation** | **(TWO Algorithms / pseudo code)** | **Output component** | **Format of output** |
| **Input: btnBackClick**  **Component: btnBack**  **Component type: TButton** | **none** | **Begin**  **clearScreen;**  **HomeScreen;**  **end** | **frmUI** | **Show HomeScreen** |
| **Input: pnlEducatorClick,**  **pnlStudentClick**  **Component: pnlStudent, pnlEducator**  **Component Type: TPanel** | **none** | **begin**  **LPanel.ParentBackground := false;**  **LPanel.color := clGreen;**  **if LPanel.Name = 'pnlStudent' then**  **begin**  **fEducator := false;**  **LPanel := fCurrentFrame.FindComponent('pnlEducator') as TPanel;**  **LPanel.color := clWhite;**  **end**  **else**  **begin**  **fEducator := true;**  **LPanel := fCurrentFrame.FindComponent('pnlStudent') as TPanel;**  **LPanel.color := clWhite;**  **end;**  **end;** | **pnlEducator,**  **pnlStudent** | **Change color of pnlEducator and pnlStudent** |
| **Input: Name, Password**  **Data type: String**  **Component: edtName, edtPassword**  **Component type: TEdit** | **If edtName or edtPasswword is blank then**  **Set lblName or lblPassword font color to red and Display error text:’’Please fill in all fields’**  **If edtName.text exists in database then**  **display error message: ‘Account under username already exists’** | **begin**  **UserTbl.Insert;**  **UserTbl['USERNAME'] := sName;**  **UserTbl['PASSWORD'] := sPassword;**  **UserTbl['EDUCATOR'] := fEducator;**  **UserTbl['TESTS']:=TlkJSON.GenerateText(TestsArray);**  **UserTbl.FieldByName('PROFILE\_PICTURE')**  **.LoadFromFile('files/default\_profile.jpg');**  **UserTbl.Post;**  **fCurrentFrame.clearScreen;**  **fCurrentFrame.HomeScreen;**  **end** | **frmUI** | **Show HomeScreen** |

**Screen 3: Create Screen**

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| **Input** | | **Processing** | **Output** | |
| **Type of Input** | **Input validation** | **(TWO Algorithms / pseudo code)** | **Output component** | **Format of output** |
| **Input: btnBackClick**  **Component: btnBack**  **Component type: TButton** | **none** | **Begin**  **clearScreen;**  **TestsScreen;**  **end** | **frmUI** | **Show Tests Screen** |
| **Input: btnCreateClick**  **Component: btnCreate**  **Component type: TButton** | **If edtTitle or edtDescription is Blank then**  **Display error text:’’Please fill in all fields’** | **begin**  **LEdit := fCurrentFrame.FindComponent('edtTitle') as TEdit;**  **TestInfo.title := LEdit.text;**  **LEdit := fCurrentFrame.FindComponent('edtDescription') as TEdit;**  **TestInfo.description := LEdit.text;**  **fCurrentFrame.clearScreen;**  **fCurrentFrame.DesignScreen;**  **end;** | **frmUI** | **Show design Screen** |