KARACHI INSTITUTE OF ECONOMICS & TECHNOLOGY
College of Engineering

(Software Engineering)

SE3301 – Software Design and Architecture

Semester:_____ **Date of Experiment:** _____

Student name: _____ **Faculty Signature:** _____

Student ID: _____ **Remarks/Comments:** _____

Lab13	**Software Prototyping**				
PLOs	**PLO1 – Engineering Knowledge** **PLO3 – Design and Development** **PLO8 – Ethics**		**Bloom's Taxonomy**	**C1 – Recall** **C3 - Apply** **P2 – Set**	
LAB TASK PERFORMANCE					
CLO's	**Aspects of Assessments**	**Excellent (75-100%)**	**Average (50-75%)**	**Poor (<50%)**	**Marks**
CLO1 10%	**Recall** Recall the concepts designing interfaces.	Complete understanding of the concepts of designing interfaces / actively participates during lecture.	Complete understanding of the concepts of designing interfaces / less actively participate during lecture.	Student lacks clear understanding of concepts of designing interfaces / Unable to read and interpret it.	
CLO4 80%	**Tools Utilization** Apply and discover different functions of Balsmiq to design interfaces / Prototypes	Accurately implement the functions of Balsmiq to design prototypes to obtain the correct output as per requirement/ given tasks.	Implement the functions of Balsmiq to design prototypes and get minor errors that will lead to a slightly different output as per given in a task.	Not able to implement the functions of Balsmiq to design prototypes and don't understand how required output and task is achieved.	
CLO7 10%	**Lab Safety** Properly handle lab infrastructure/safety precautions	Properly handle lab equipment & obey safety measures.	Moderate level lab handling and safety measurements	Minor or no safety measurements has been considered.	
				Total Marks: 10	

Objective:

1) Make attendee understand the basic concept of Software Prototyping.
2) Make attendee understand how to follow the process of Software Prototyping
3) Make attendee design different prototypes using Balsmiq Software.

Tools to be used:

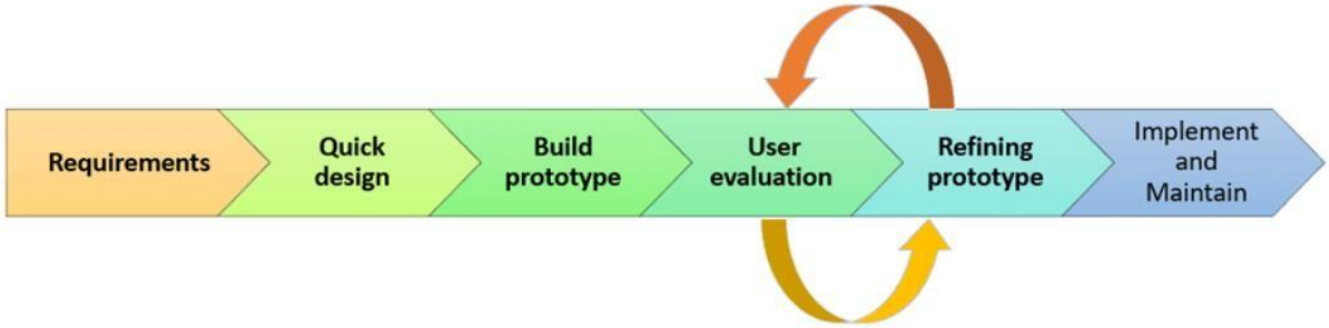
Balsmiq software is used to design different Prototypes.

What is Software Prototyping?

Software prototyping is similar to prototyping in other industries. It is an opportunity for the manufacturer to get an idea of what the final product will look like before additional resources, such as time and money, are put into finalizing the product. Prototyping gives the software publisher the opportunity to evaluate the product, ensure it's doing what it's intended, and determine if improvements need to be made.

Often, the software prototype is not complete. Sometimes, only certain aspects of the program are prototyped, such as those elements the publisher is most concerned about or areas where user interface may be tricky.

Software Prototyping Process



The diagram has following steps:

1. Requirement Gathering and Analysis
2. Quick Design
3. Build Prototypes
4. User Evaluation
5. Refining Prototypes
6. Implement and Maintain

Step 1: Requirements gathering and analysis

A prototyping model starts with requirement analysis. In this phase, the requirements of the system are defined in detail. During the process, the users of the system are interviewed to know what is their expectation from the system.

Step 2: Quick design

The second phase is a preliminary design or a quick design. In this stage, a simple design of the system is created. However, it is not a complete design. It gives a brief idea of the system to the user. The quick design helps in developing the prototype.

Step 3: Build a Prototype

In this phase, an actual prototype is designed based on the information gathered from quick design. It is a small working model of the required system.

Step 4: Initial user evaluation

In this stage, the proposed system is presented to the client for an initial evaluation. It helps to find out the strength and weakness of the working model. Comment and suggestion are collected from the customer and provided to the developer.

Step 5: Refining prototype

If the user is not happy with the current prototype, you need to refine the prototype according to the user's feedback and suggestions.

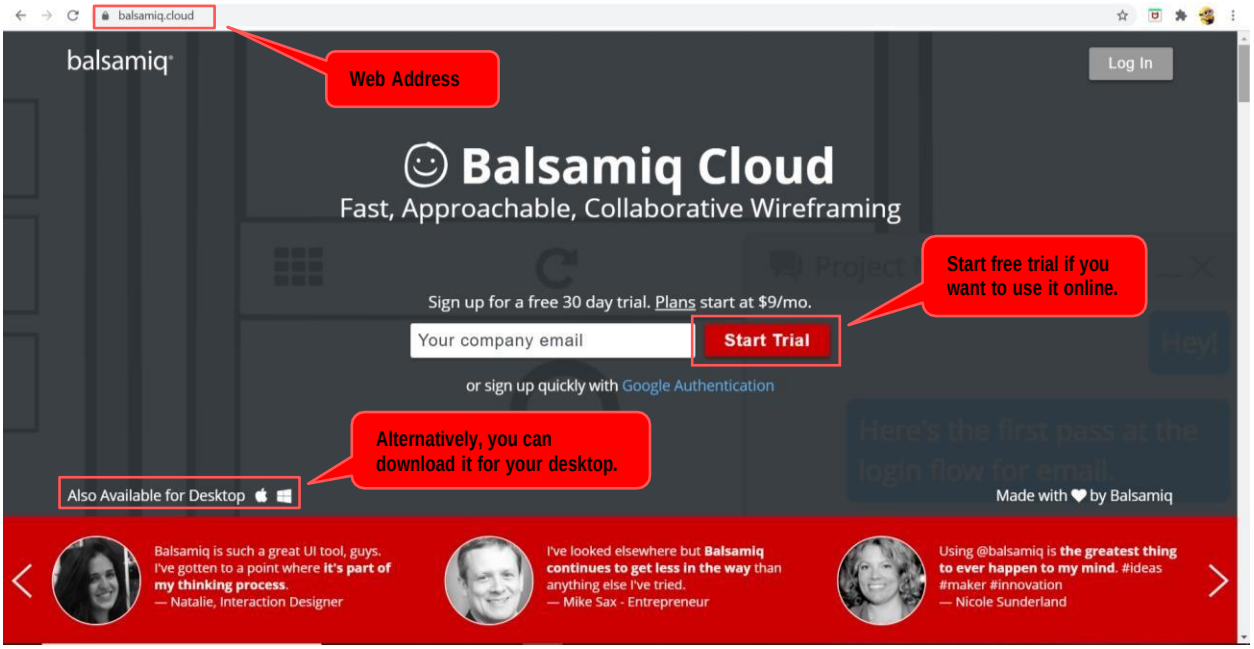
This phase will not over until all the requirements specified by the user are met. Once the user is satisfied with the developed prototype, a final system is developed based on the approved final prototype.

Step 6: Implement Product and Maintain

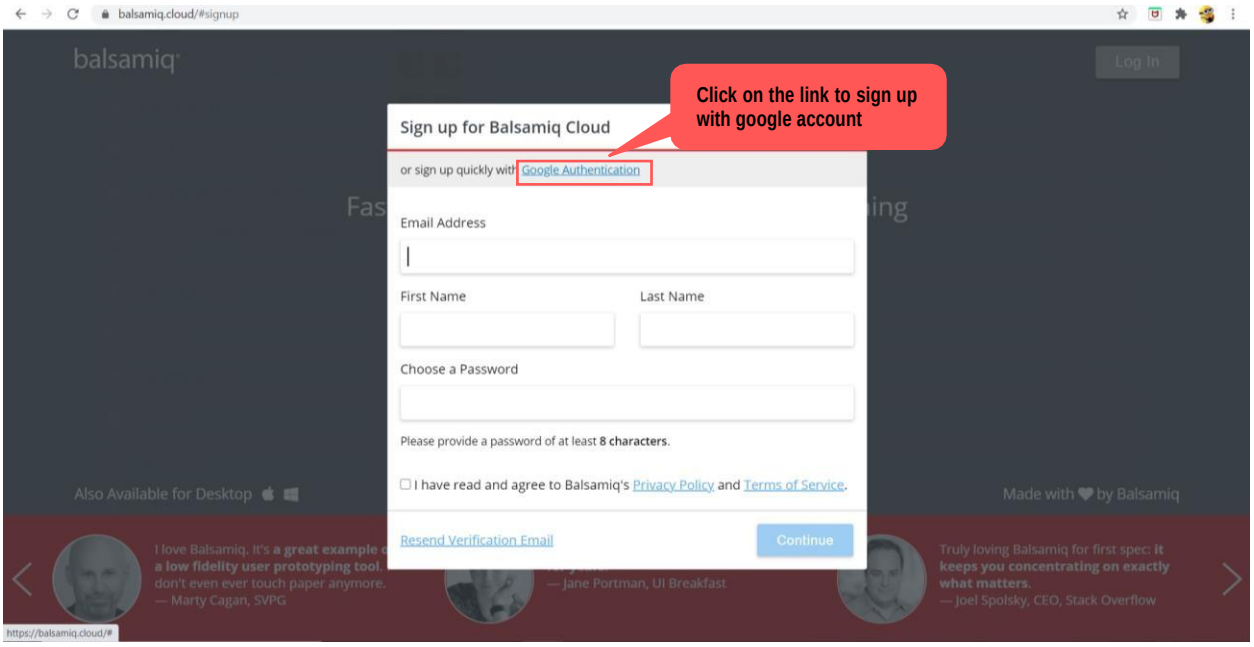
Once the final system is developed based on the final prototype, it is thoroughly tested and deployed to production. The system undergoes routine maintenance for minimizing downtime and prevent large-scale failures.

After the understanding of user requirements, the next step is to build the prototypes. In this lab we will design some model prototype. We can design prototypes in simple papers, or we can use software. We are going to use Balsmiq software in order to design the prototypes. Here are the steps:

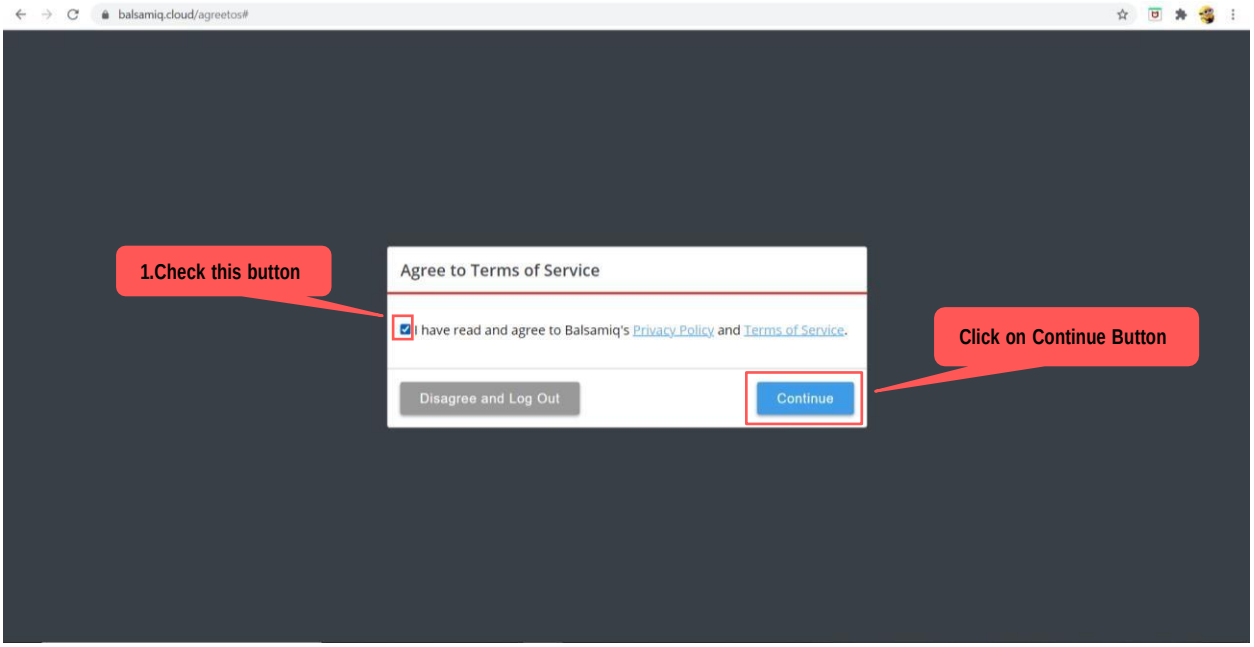
Step#01: The very first step is to decide, whether you want to download the software or you want to use online software i.e., Balsmiq on cloud. Open browser, write balsmiq.cloud. it will redirect you to the following page. Then choose how you want to use it.



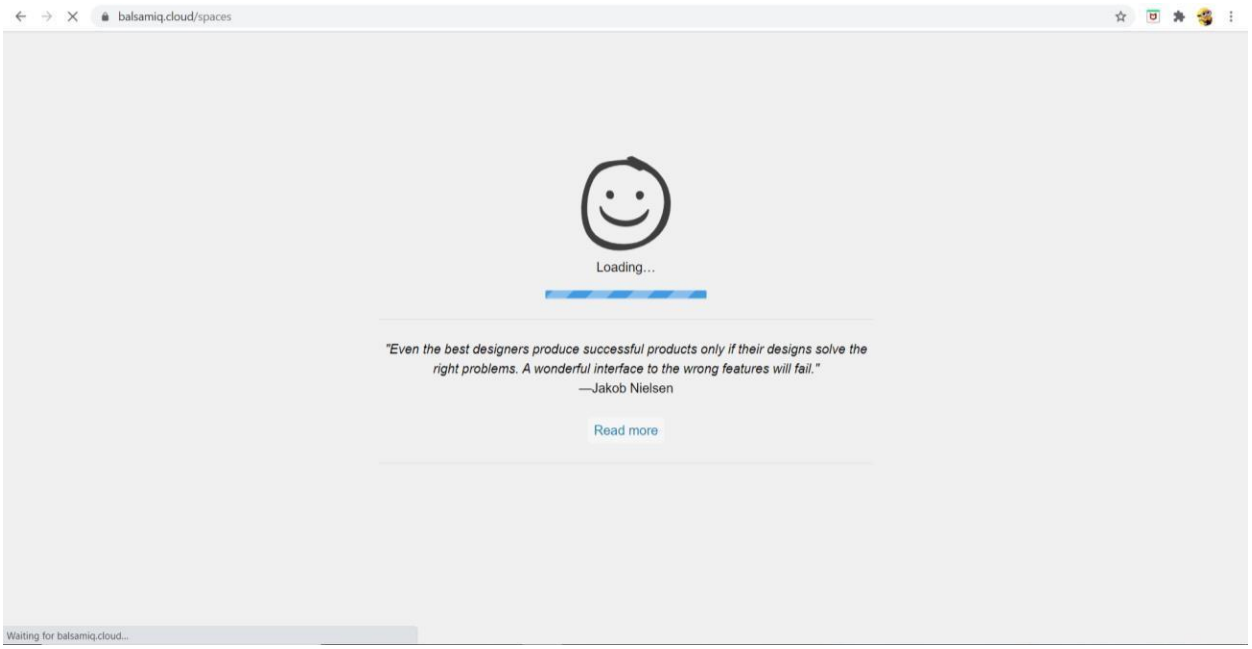
Here is the signup form for free trial. We want to use it on cloud. Fill the sign up form or you can use your google account for an easy sign up.



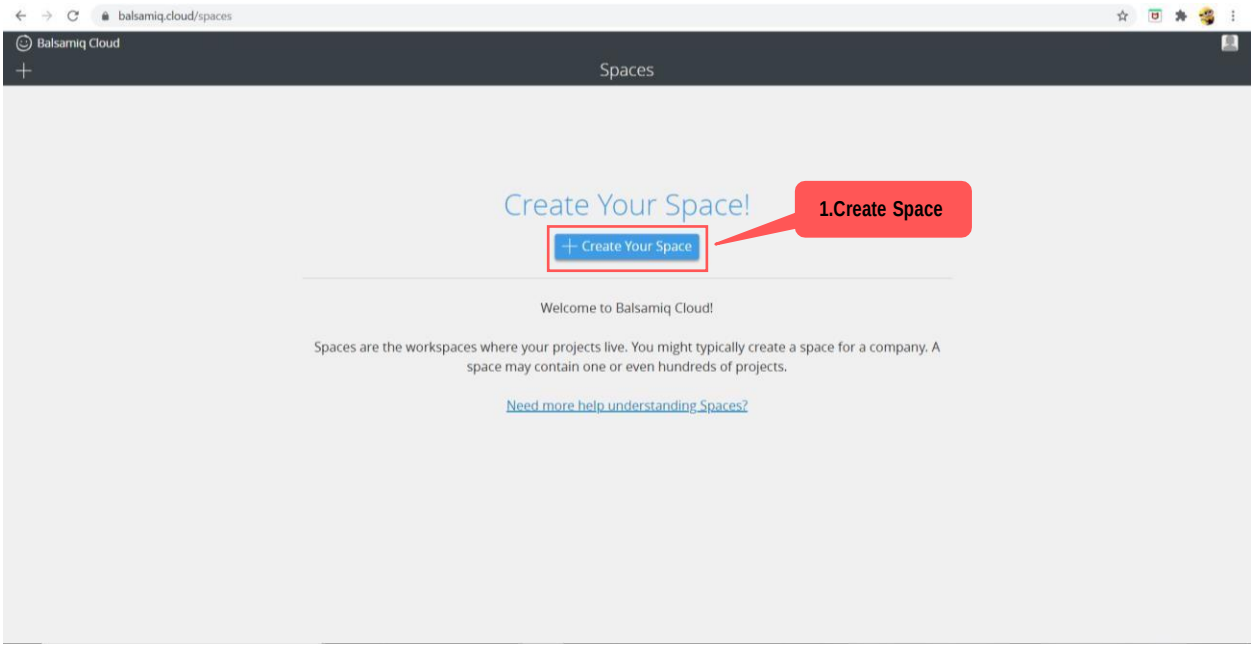
After clicking on link, it will ask you to agree the terms and services.

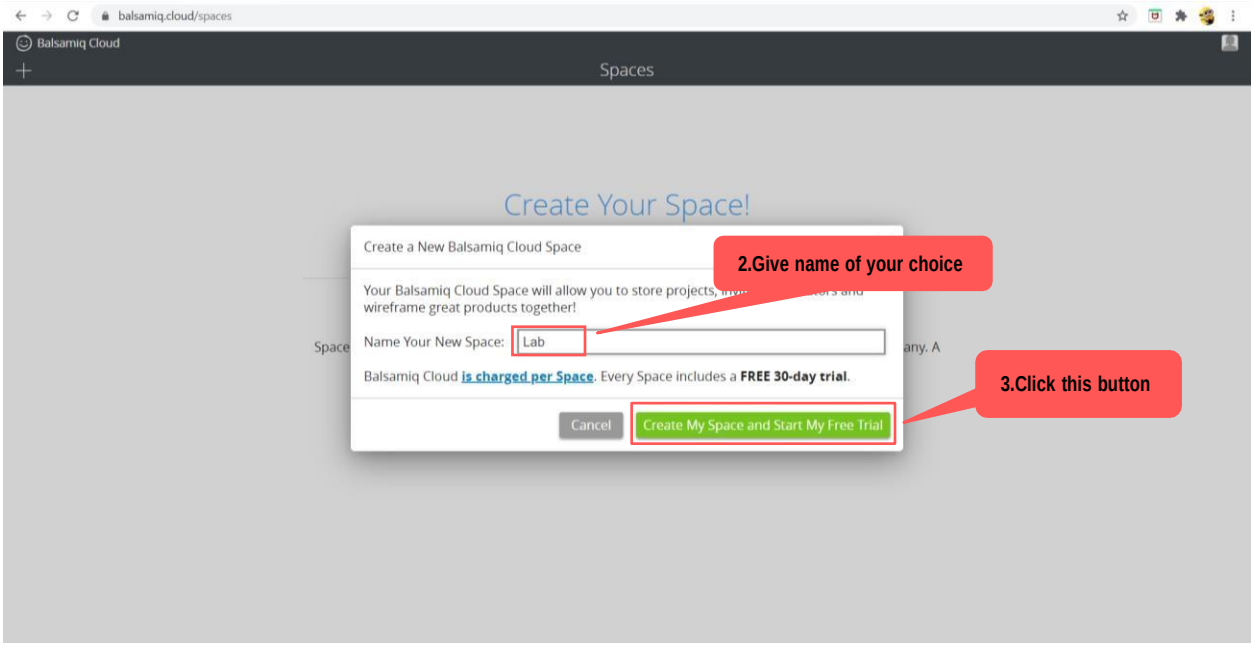


It will take some time to load.

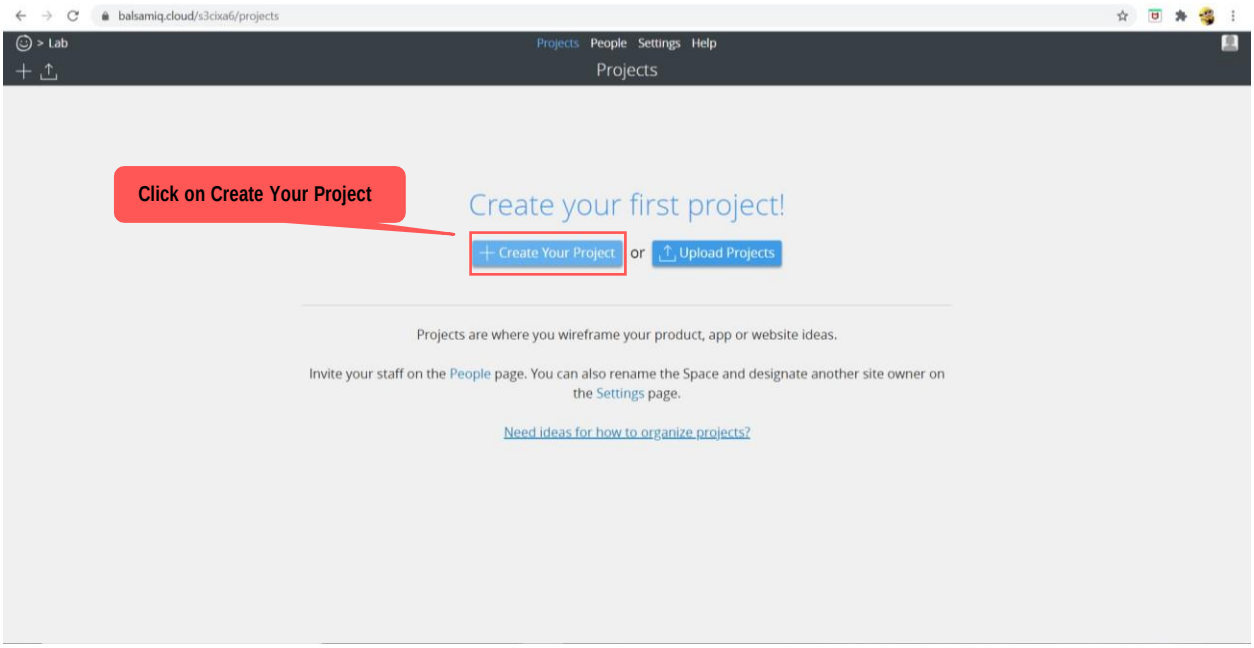


While using Balsmiq on cloud, you have to first create your space and inside space, you will see an option of create project.

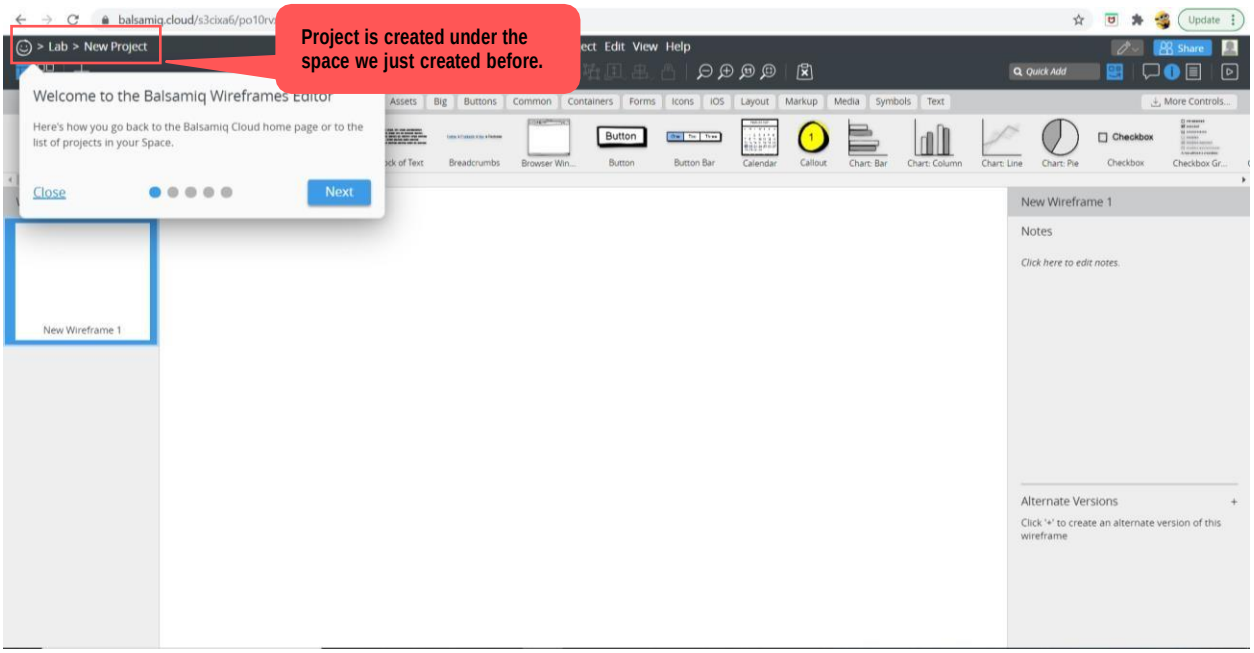




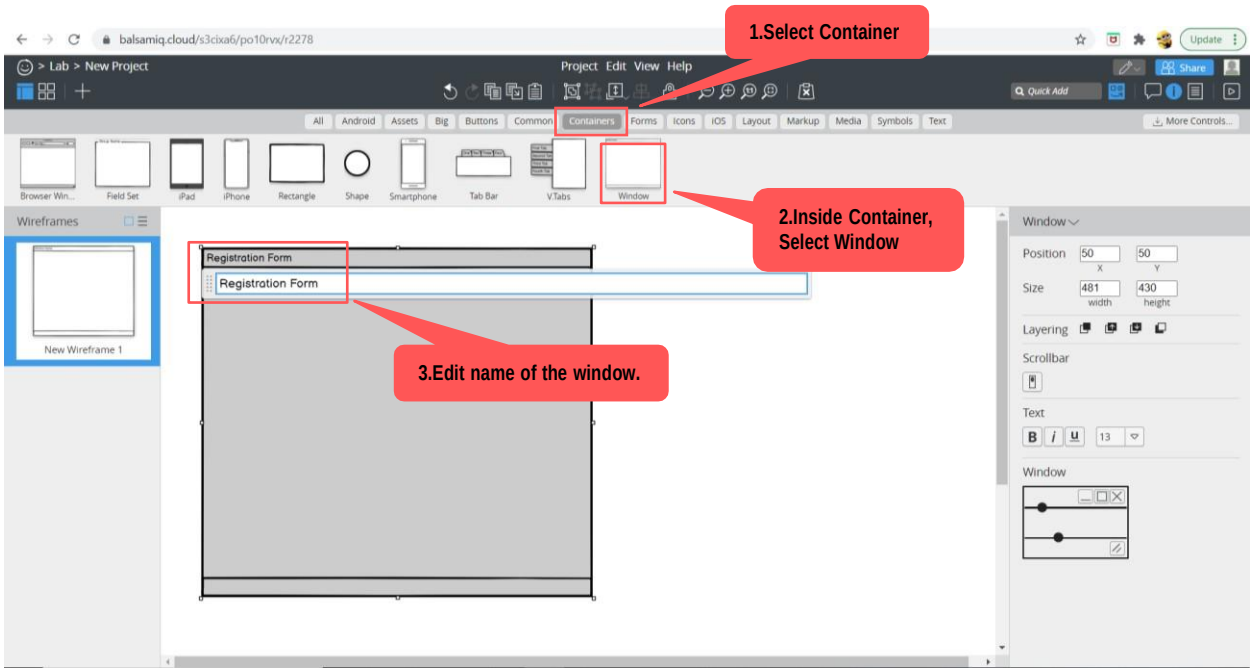
Step#02: After creating space on Balsmiq cloud. You need to create a new project in order to perform your task. Here are the steps to create project:



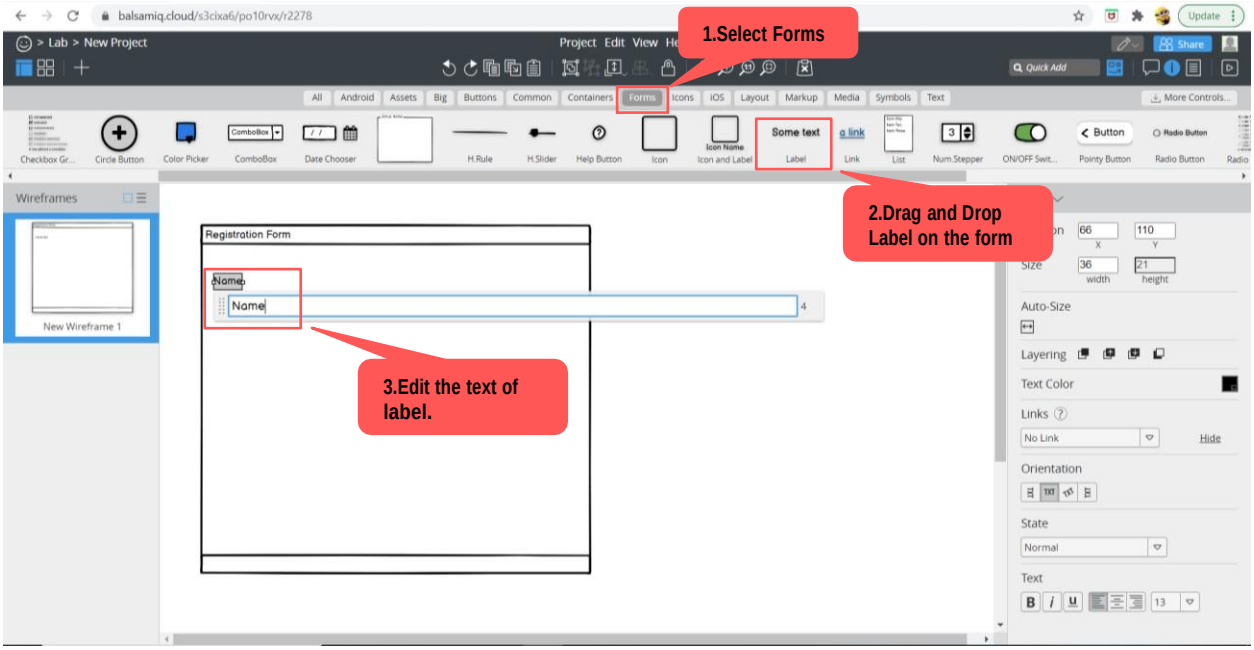
After clicking on this, the new project will be created and the following window will open.



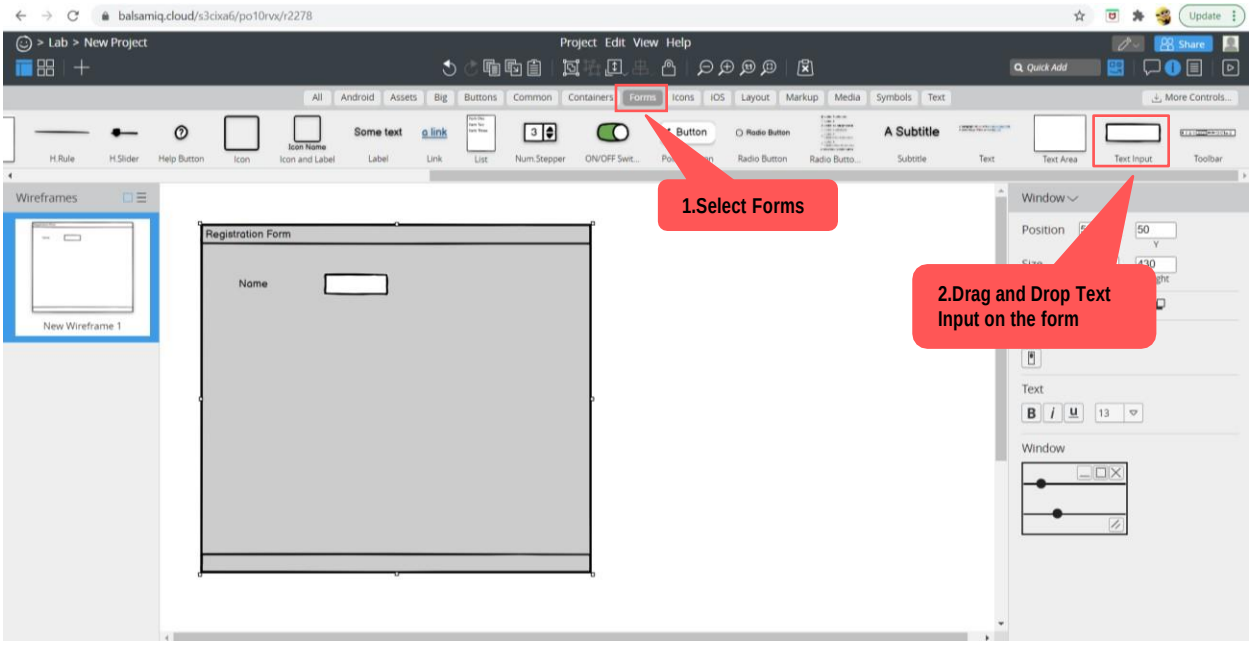
Step#03: We are going to design the Prototype of simple registration form. Here are the steps to do it.



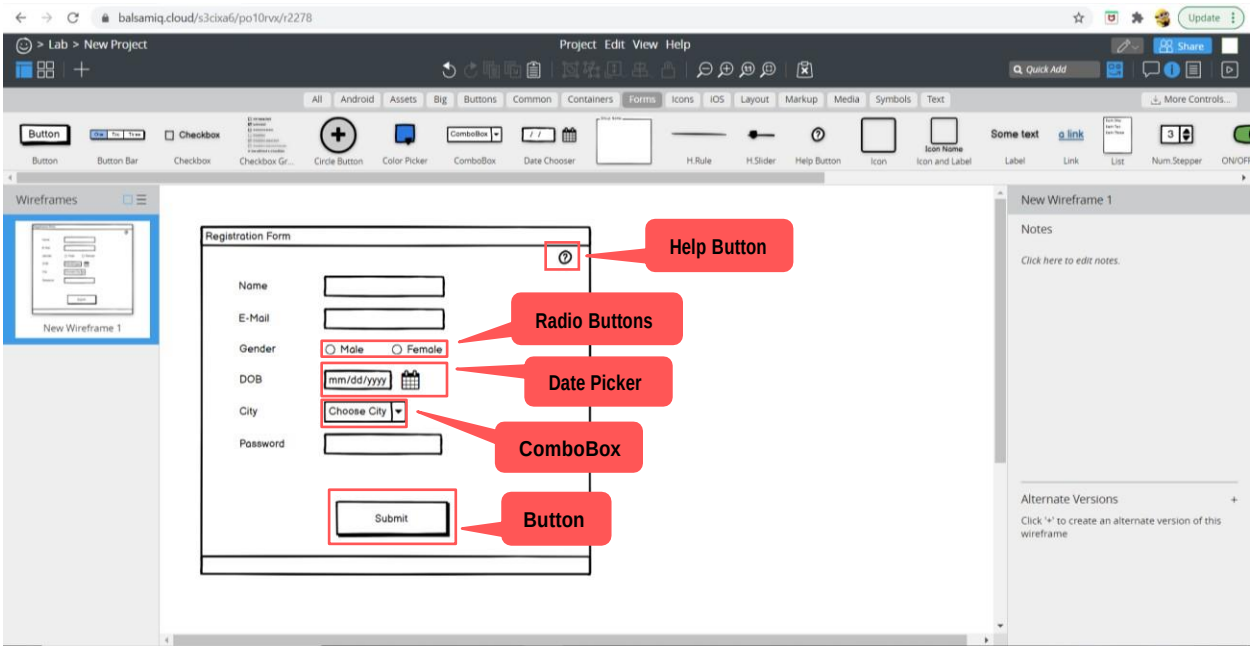
The next step is to add labels and text boxes for inputs.



To take the user input we usually need a text box. Here we will add a textbox in front of the label Name.

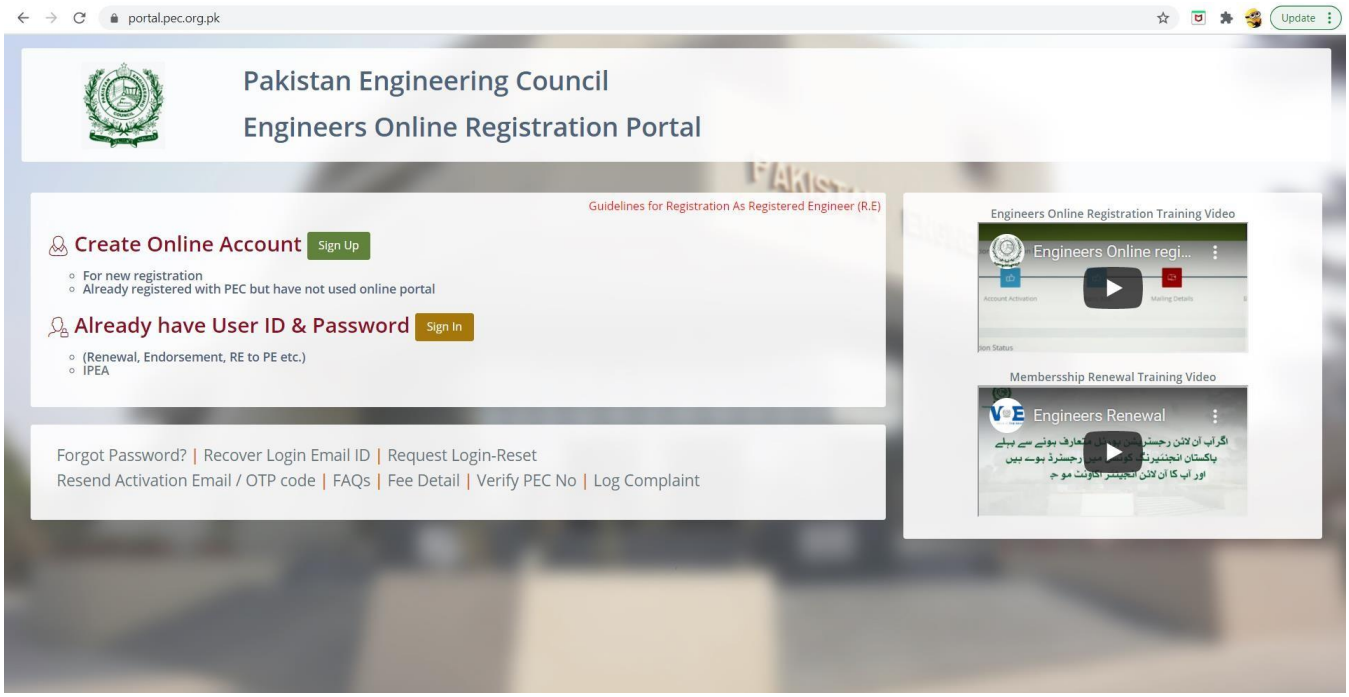


Following these steps, add more buttons, labels and other items as shown:

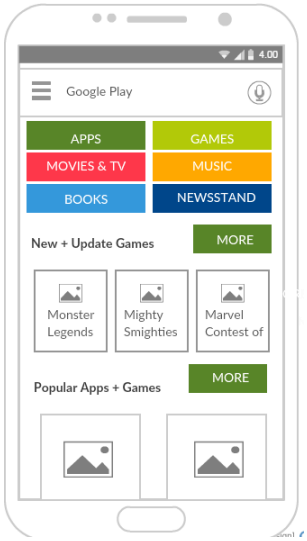


Lab Task:

1) Design the following Web Prototype. **(Marks: 2)**



2) Design the following Android Prototype. **(Marks: 2)**



Home Task:

1) Create the Prototypes of Your Semester Project. **(Marks: 4)**