# **DCLL**Technologies



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# Mobile App Development

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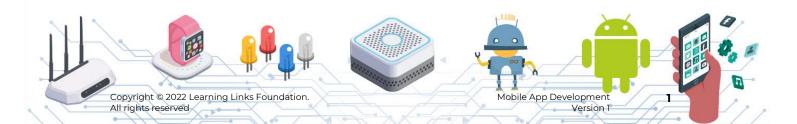
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Cash Register App

Project 1

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# Mobile App Development

## **Project 1: Cash Register App**

In this project, you will explore the basic concepts of App development by building a Cash register App that can support the small grocery stores/department stores to record the transactions, keep a track on the stock available and also prepare a bill. Exciting? Let's get started!

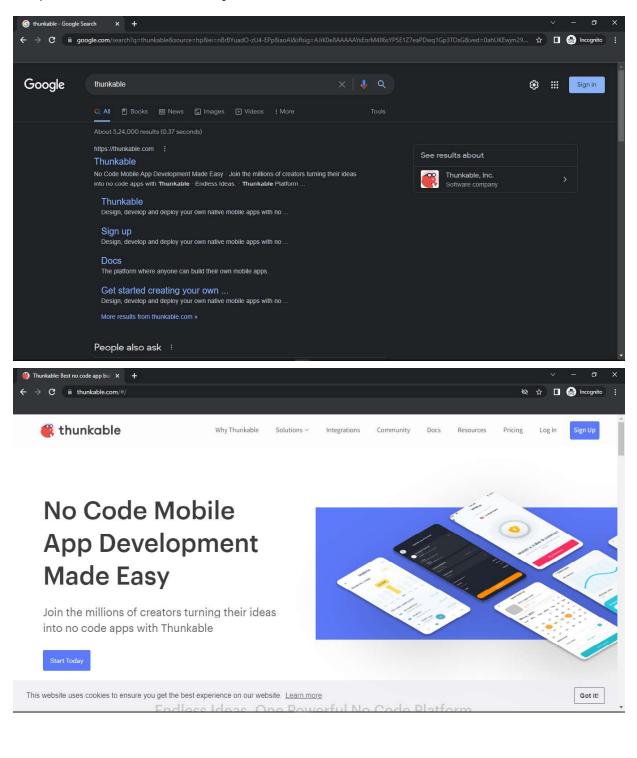
Step 1

Open any of the web browsers on your laptop. Then open the google search engine.

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#### Step 2

Search for "Thunkable" and then click on the first result. You may also enter the url "https://thunkable.com/" then you are redirected to the Thunkable website.





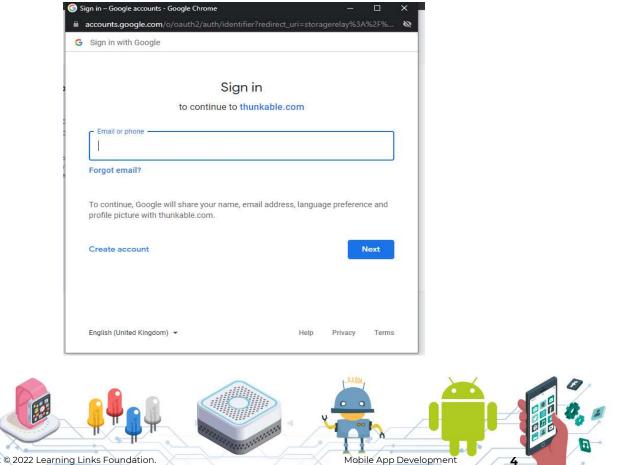
#### Step 3

Let us sign-in to the Thunkable website.

Click on the "Sign in" button which is present on the right side top corner.

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		Sign up with email	
		Already have an account? Sign in	
		Unable to login?	
	By sign Terms	sing in, you're accepting our s of Use and Privacy Policy.	

Then, click on the "Sign up with Google" option and enter your google account details like Email ID and Password.



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#### Step 4

After entering your google details your profile is created and the interface looks like this.

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💰 My Project 🖉	
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#### Step 5

Now let's create a new project.

Click on the "Create New App" button then you are asked to give the details of the project. Enter the details as shown in the image given below.

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Then the app development interface looks like this

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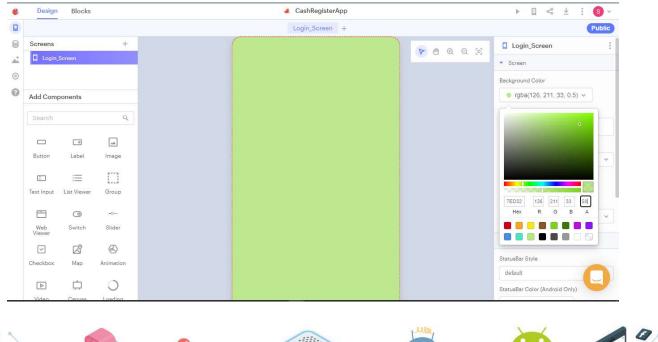
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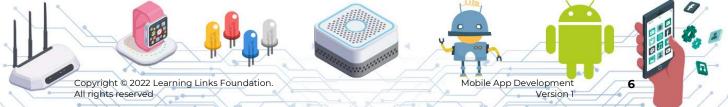
## PART 1 – Building the Login Interface

#### Step 6

Let's set the background and other details of the app.

Let's enter the name of the screen from the properties panel on the right, since this is login screen of the app we will name the screen as "Login\_screen". Then choose the background colour as green and then set the transparency to 50 as shown in the figure.





#### Step 7

The first screen is the welcome screen where the user can login into the app. Now let's add a welcome note to our app

Go to the "Add Components" panel, then drag and drop a "Label" in the middle of the screen.

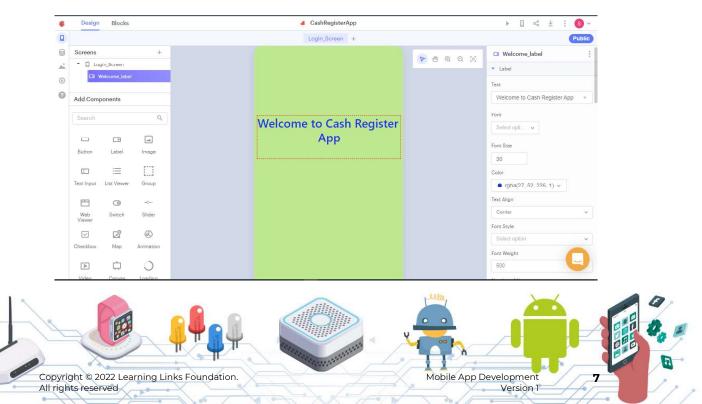


Now let's edit the details of the Label

Go to the properties panel and change the label name to "Welcome\_label".

Then change the text to "Welcome to Cash Register App", then change the font size to "30" and color to blue.

Then change the text align to "Center" and font weight to "500"



#### Step 8

Now let's create the textboxes for entering the username and password

Go to add components panel, drag and drop a "Label" in the middle of the screen. Then rename the label as "UserName\_Label". Then change the text to User Name.

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Design Blocks CashRegisterApp S . de la Login Screen + 8 Screens UserName\_Label 0.00 1 Labe 0 0 User Nam Add Comp Welcome to Cash Register App • -Button Label Image 22 ● rgba(230, 122, 32, 1) v Text Input List Viewe Text Align 0 Slider Web Viewer Switch Font Style  $\checkmark$ ß eckbox Мар ont Weigh 400 Ļ 0 ⊳

Now change the font size to "22" and the color to orange.

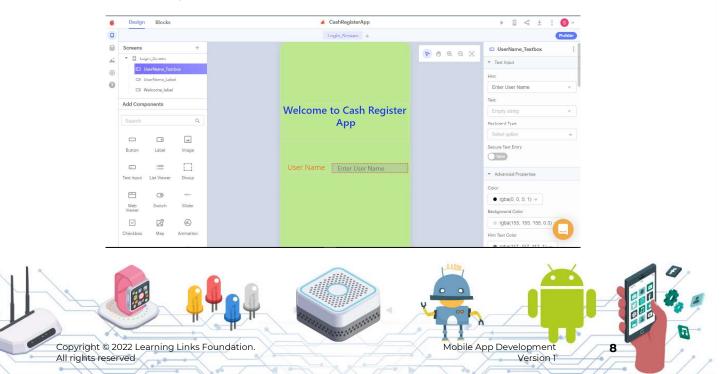
#### Step 9

Let's add a textbox for entering the Username.

Go to "Add Components" panel, then drag and insert the "textbox" beside the "UserName\_Label".

Then change the name of the text box to "UserName\_textbox".

Then change the Hint to "Enter User Name" and then adjust the position of the textbox as shown in the image.

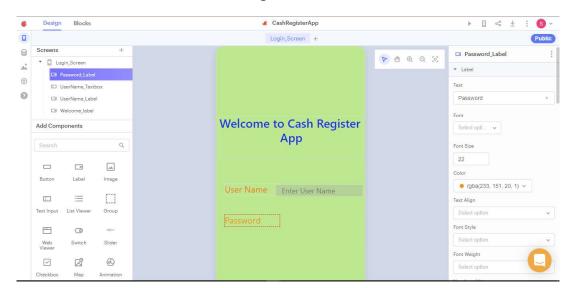


#### Step 10

Let's add the label and text box for entering the password.

Now, try this on your own by repeating the steps 8 and 9.

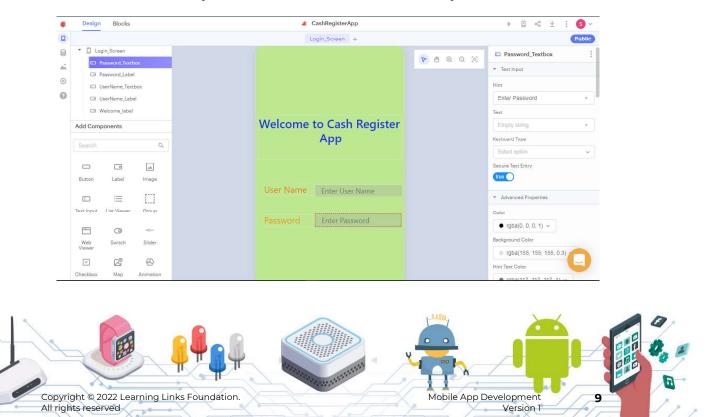
Hint: Drag and drop a label below the Username label. Then change the name to "Password Label" and the colour to orange and font size to 22.



Now let's add the Textbox for Password.

Drag and drop a textbox beside the password label. Then change the name of the Textbox to "Password\_textbox"

Since it is a Password entry we will enable the secure text entry.





#### Step 11

Now let's add a Login Button.

Drag and drop a button from the add components panel. Go to the properties panel and change the button name to "Login\_Button." Change the text to Login, font size to 22 and enable the font to bold.

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We have successfully built the Login interface.

Welc	ome to Cash Register App		
User			
Passw	Login		
Copyright © 2022 Learning Links Foundation. All rights reserved		Mobile App Development 10	

#### PART 2 – Adding the second screen – Store Interface.

Step 12

Lets create a new screen for the Store.

Click on the "+" icon on the top middle of the screen, beside the Login\_screen.

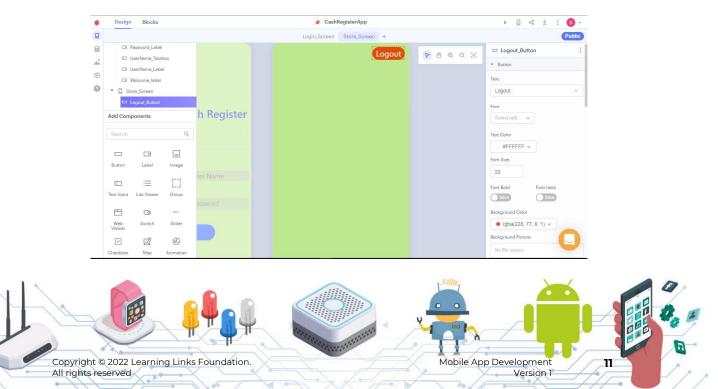
Rename the screen as "Store\_Screen". Then change the color to green and enable Scorable.



#### Step 13

Now let's add a logout button. Drag and drop a button in the middle of the screen then adjust the position to the top right corner.

Then rename the button as "Logout\_Button." and enter the text as "Logout," change the font size to "22" and color to "Red."



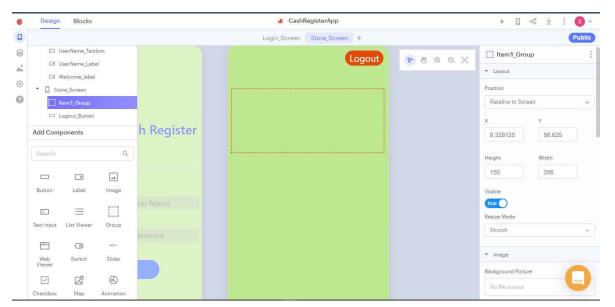
#### Step 14

Now let's add the Grocery list.

Select the group function from the "Add Components". Drag and drop a Group from the Add components panel in the middle of the screen.

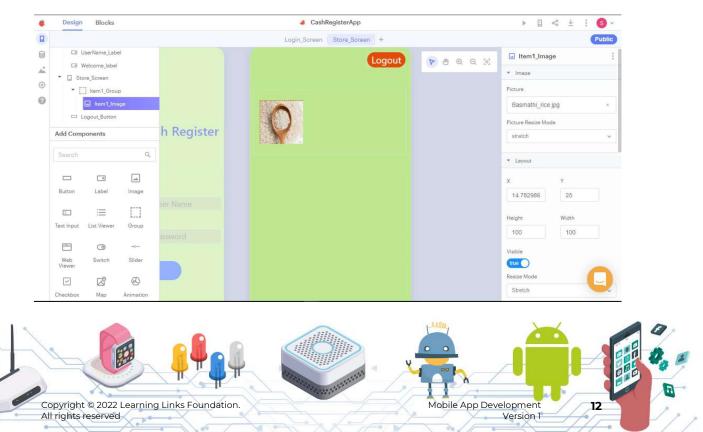
.

Then stretch it to both left and right ends of the screen. Then rename it as "Item-1\_group"



Now, drag and drop an image from the "Add Components" and rename it as "Item1\_image." Then upload an image of rice, by clicking on picture and upload button.

You may search on google download the image and then upload it here.

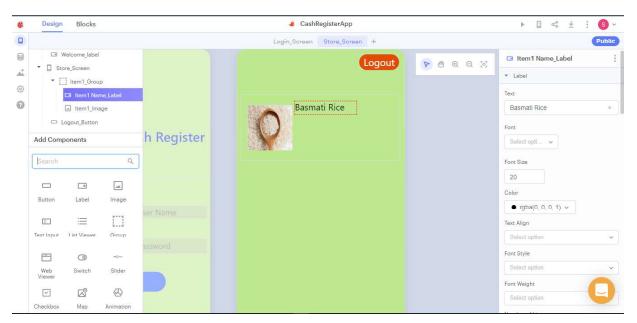


#### Step 15

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Let's add the details of the item which is rice in our case.

Drag and drop a Label in the middle of the Item1 group and change the name to "Item1Name\_Label" Then enter the text as "Basmati Rice" and change the font size to 20.

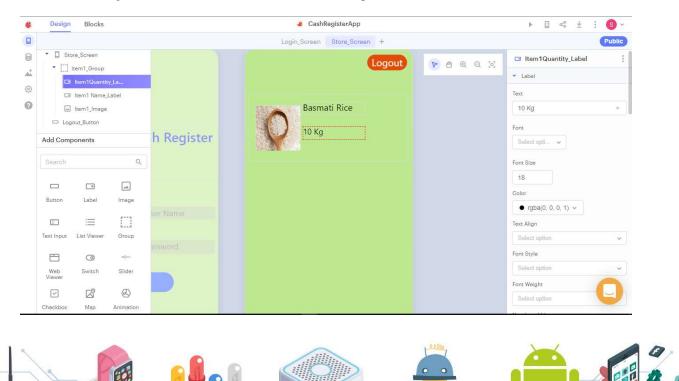


Now let's add the available Quantity.

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Drag and drop a label in the middle of the Group and change the name to "Item]Quantity\_label". Then enter the text as 10 Kg.



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#### Step 16

Now let's add the price label.

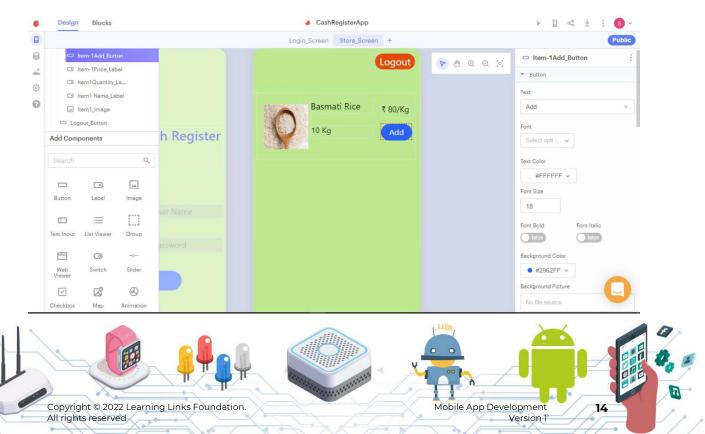
Drag and drop a label in the middle of the Group and change the name to "Item]Price\_label". Then enter the amount as 80/Kg

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Now let's add a button. Drag and drop a button in the group and then rename it as "Item1Add\_button". Enter the text as Add.

If you observe we have completed creating a list item which has an image, price of the item and also a button to add the item.



#### Step 17

Now let's add 2 more items onto the store screen. Repeat the steps 15 & 16 and add the item2 and item3.

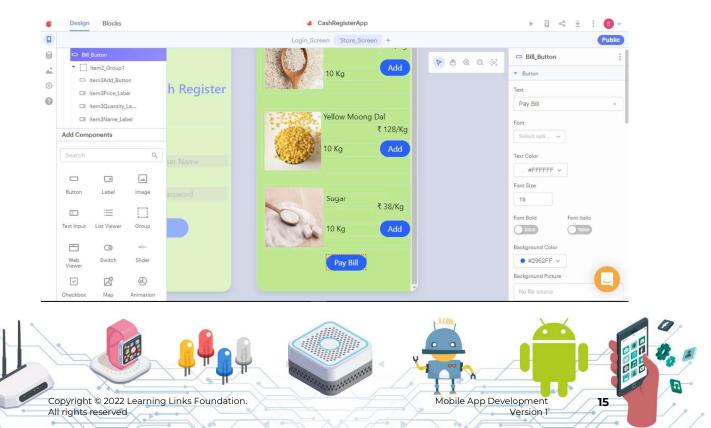
After adding all the 3 items your screen should match the image given below.

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#### Step 18

Now let's add a pay bill button.

Drag and drop a button from the components tool bar below the item3 group. Then change the name of the button to "Bill\_button" and change the text on the button to "Pay Bill".



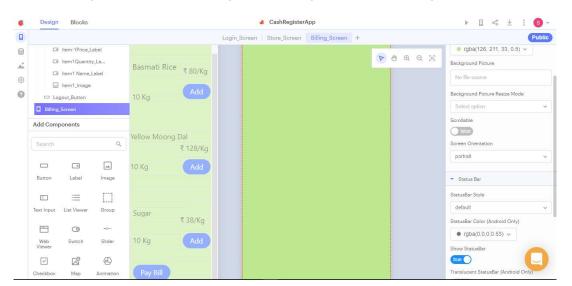
## PART 3 – Adding the third screen – Billing Interface

#### Step 19

Let's add Billing Screen.

Click on the + icon which is present on the top-middle of the screen. Then name the screen as "Billing\_Screen" and change the background colour to green.

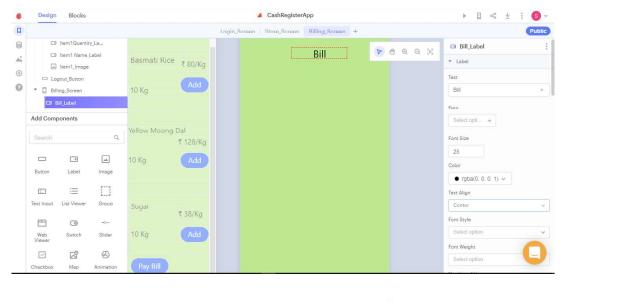
.

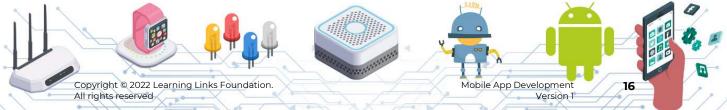


#### Step 20

Let's add a label for the bill.

Drag and drop a label in the middle of the screen. Then name it as "Bill\_Label" enter the text as Bill and align the text to the centre.



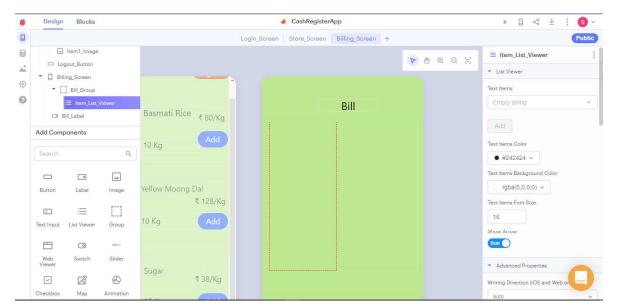


#### Step 21

Let's add a group for creating the bill.

Drag and drop a group in the middle of the screen. Then drag it till the edges of the screen and change the name of the group to the "Bill\_Group"

Now drag and drop a List viewer from the "Add components" in the middle of the group. Change the name of the List Viewer as "ItemLister viewer"



Let's add two more list viewers for the item quantity and price. Drag and drop two more list viewers in the group and name them as "quantity list viewer" and "Amount listviewer".

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#### Step 22

Now let's add a back button. Drag and drop a button below the group and change the name of the button to "Back\_Button".

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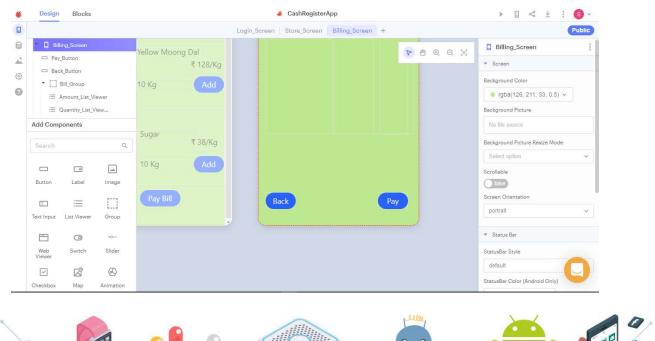
Change the text to "Back" as shown in the image.

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#### Step 23

Now let's add a button for the payment.

Drag and drop a button in the middle of the screen. Change the button name to "Pay". Enter the text as "Pay".





Now let's add few more labels for better clarity of the bill.

Add three label on the top of each list viewer as Item, Quantity and Amount.

Add 2 labels as the end as shown in the image given below.

You have successfully completed the User Interface part.

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				Login_Screen   Store_Screen   Billing_Sc	rreen +	Public
and the second second	illing_Screen		Logout	Dill	m e e e e	Billing_Screen
A.:	Amount_Label3			Bill		<ul> <li>Screen</li> </ul>
)	Quantity_Label			Item Quantity Amount		Background Color
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Þ	Ċ	0		Pay		Show StatusBar
(P)	والمسطع	0				frue

#### PART 4 – Coding the app

#### Step 24

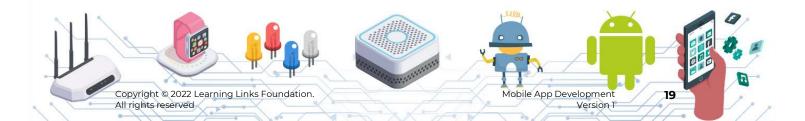
Click on the Login\_Screen and then click on the blocks option.

The App first starts with a login screen. In the Login screen the details have to be entered and the user should navigate to the Store Interface Screen. So let's start coding the Login Screen.

when Login\_Button Click do

Click on the "Login\_Button". Drag and drop the

the middle of the screen. Now the screen has to be navigated to the StoreScreen.





previous block and then change the drop-down to store screen as shown in the image given below.



#### Step 25

Lets create few variables for the easy handling of the data in the app.

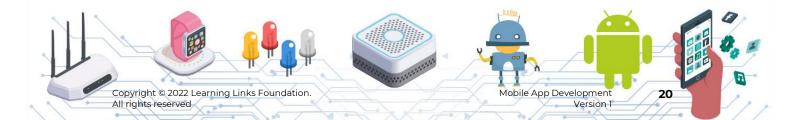
Let's create variables for Rice Quantity, Dal Quantity and Sugar Quantity. These variables are used to show the quantity of grocery left in the store.

Click on Variable Menu, Then drag and drop the code area. Then change the name to Rice Quantity. Click on Math Menu and drag and

block. Duplicate

insert the 0 block at the end of the the block for 2 times and change their names as follows.

initialize	app +	variable	RiceQuantity to	0
initialize	app •	variable	DalQuantity to	0
initialize	app •	variable	SugarQuantity to	0



#### Step 26

When we are logging into the app the quantity has to automatically set to 10. So let's write the code for it. Click on the Login\_Screen then drag and drop

when Login\_Screen • Opens • do

block in the middle of the screen.

set app variable RiceQuantity 🔹 🔞

Now click on the Variable Menu, Drag and drop block in the previous block.



Duplicate the "set app variable RiceQuantity to10" block for 2 more items.



#### Step 27

Let's code the Store Screen.

Click on the "Store\_screen". In the Store Interface Screen, when we press the logout button the screen has to come back to the login screen.





Now click on Control Menu and drag and drop navigate to login screen block as shown in the image.



#### Step 28

Let's create a few more variables for storing the data of the app



Click on list, drag and drop Empty list at the end of the variable.



Duplicate the blocks by right clicking on the block and then change the other two names to quantity and Price as shown in the image given below.

initialize ap	🔹 variable	Item to	empty list
initialize ap	p 🗾 variable	Quantity to	🕻 🟮 empty list
initialize ap	p 🔹 variable	Price to	empty list

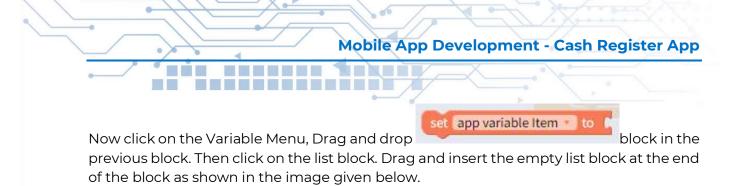
#### Step 29

When the Store Interface Screen is opened the lists should be set to empty until the user enters the details. So now let's code for it.

when	Store_Screen +	Opens -	
do		THE REAL OF	
			block i

Click on the Store\_Screen. Then drag and drop the middle of the screen.





when [3	itore_Screen	Opens 🔹		
do se	t app variable l	tem 🔹 to 🔋	0	empty list

Duplicate the set app variable item block and insert it below the previous block. Then change the name to quantity.



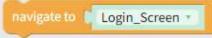
Step 30

Now, let's code for the "Pay Bill" Button.

when	Bill_Button •	Click	
do			-
1000			block in

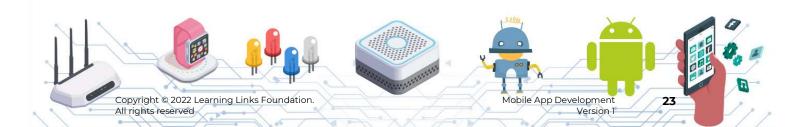
Click on the "Bill" Button, then drag and drop the the middle of the screen.

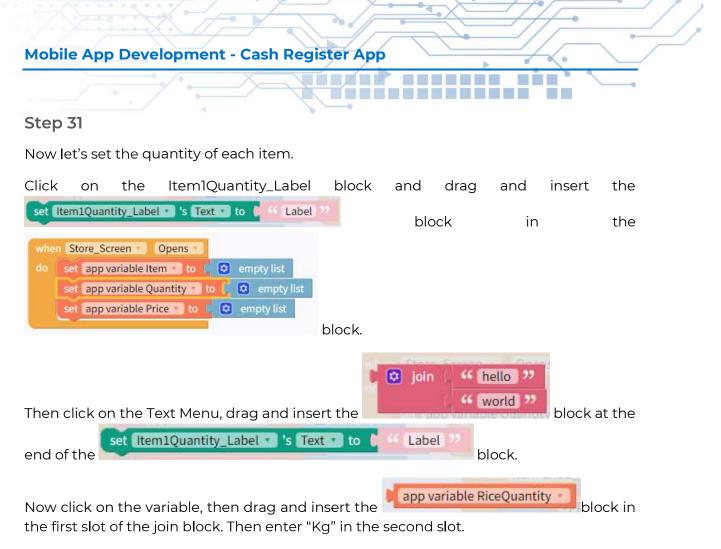
When the "Pay bill" button is pressed the screen has to be redirected to the Billing Screen. Let's code for it.



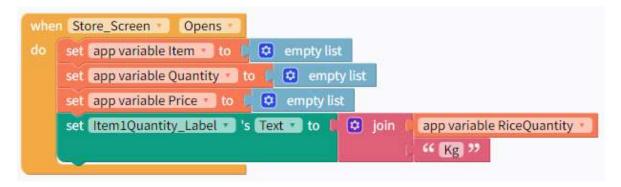
Now click on the Control Menu, Drag and insert the block in the previous block as shown in the image given below.

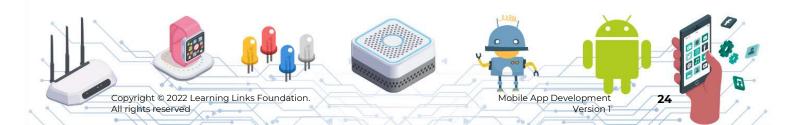
whe	Bill_Button	Click
do	navigate to 🌘	Billing_Screen •
	~~~	





Your code should look as seen in the image given below.





#### Step 32

Repeat the same for all the other two items also. Duplicate the block and change the item quantity label.

	set app variable Item 🔹 to 📔 🖸 empty lis	t	
	set app variable Quantity to 🚺 🖸 empt	y list	
	set app variable Price to boot empty lis	t	
	set Item1Quantity_Label • 's Text • to	😟 join (	app variable RiceQuantity
			" Kg "
I	set Item2Quantity_Label 🔹 's Text 🔹 to 🔋	🧿 join (	app variable DalQuantity
Į			" Kg "
I	set Item3Quantity_Label 🔹 's Text 🔹 to 🌘	🖸 join (	app variable SugarQuantit
			66 Kg 33

#### Step 33

Now let's code for "add" Button.

Click on the Item1\_group and then click on the Item1Add\_Button. Then drag and drop a

do Click block in the middle of the code area.
Now click on the List Menu and drag and inset the
in list insert at Cast Cast Cast Cabe 22 block in the previous block.
Now click on the Variable Menu and drag and insert the provide the block in
the first slot of the insert at a last as the abc 22 block.
Now click on the Item1_Label, drag and insert the place of abc block as shown in the image given below.
when Item-1Add_Button · Click ·
do in list app variable Item 🔹 insert at 🔹 last 🔹 as 🕻 Item1 Name_Label 💌 's Text 🛸
Copyright © 2022 Learning Links Foundation.         Mobile App Development         25           All rights reserved         Version 1         1

#### Step 34

Now duplicate the previous block and change the app variable Item to app variable

Quantity. Then click on Math, Drag and drop block in place of abc block. Then change the number to 1 as shown in the image.

whei do	in list	Add_Button Click insert at a last as litem1 Name_Label is T	ext 🐋
	in list	app variable Quantity insert at last as 1	

Once again duplicate the block and change the "app variable Quantity" to "app variable Price" and then change the number to 80

in list I	app variable Item • insert at • last • as [ Item1 Name_Label • 's Text
in list	app variable Quantity 🔹 insert at 🔹 last 🔹 as 📘 1
in list	app variable Price insert at last as 80

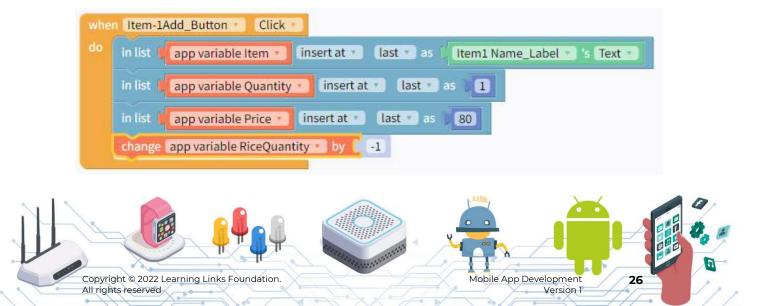
#### Step 35

Now let's add a block to change the quantity of the grocery in the store.

Click on the variable block and drag and insert the block below the previous block.

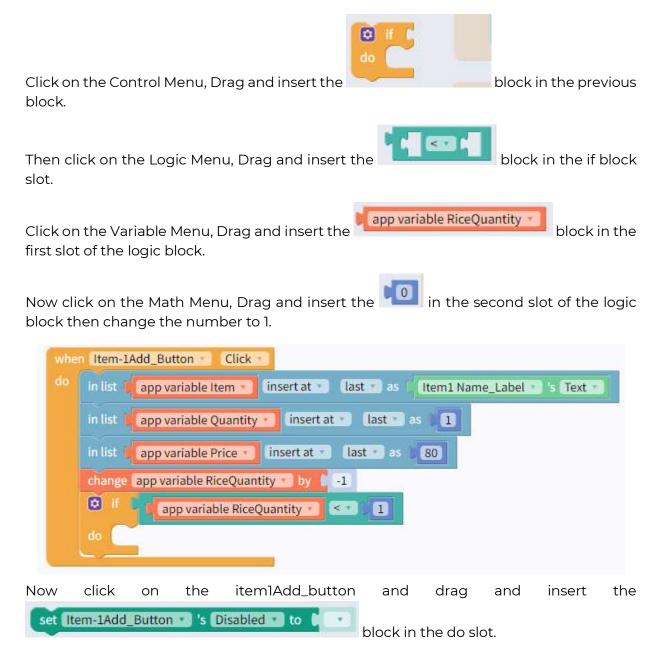


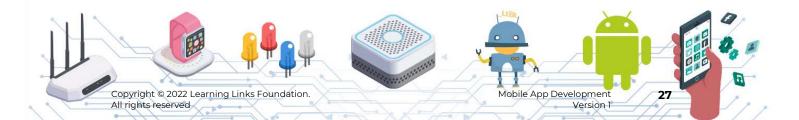
Then change the "app variable Item" to "app variable RiceQuantity" and change the 1 to - 1



#### Step 36

When the item goes out of stock, we need to indicate that. So let's add a block of code for the out of stock scenario.







Then change the condition to true by clicking on the blank block.

0	in list app variable Item 🔹 insert at 🔹 last 🔹 as 🛛 Item1 Name_Label 🔹 's Text 🔹
	in list app variable Quantity 🗾 insert at 🔹 last 🔹 as 🛛 1
	in list app variable Price insert at last as 80
	change app variable RiceQuantity by -1
	🖸 If Polapp variable RiceQuantity -
	do set Item-1Add_Button • 's Disabled • to true •

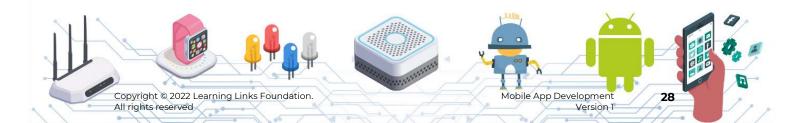
#### Step 37

Now let's repeat the same steps for the other 2 items.

Right click on the entire



block and click on duplicate.



Then change all the parameters according to the Item 2 & Item 3 Group.



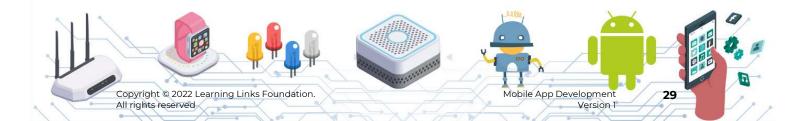
#### Step 38

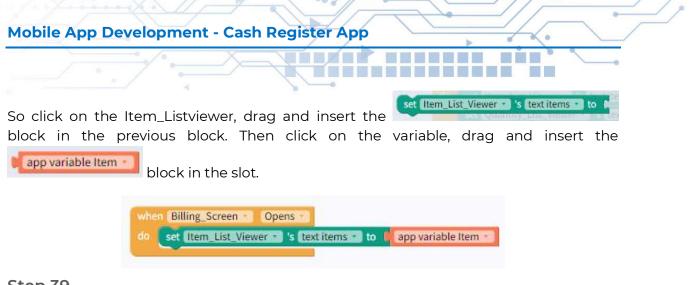
Now let's code for the billing screen.

Click on the Billing\_Screen block, drag and insert the block in the code area.

Then all the data has to be set to the list viewers.







#### Step 39

Now repeat the same step to add other 2 items.

Right click on the block and duplicate it. Then change the item parameters as shown below.

	set	t Item_List_Viewer 🔹 's text items 🝨 to 📫 app variable Item 🔹					
	set	Quantity_List_Viewer • 's text items • to	app variable Quantity				
	set	Amount List Viewer . 's text items . to	app variable Price				

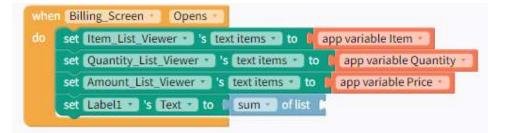
#### Step 40

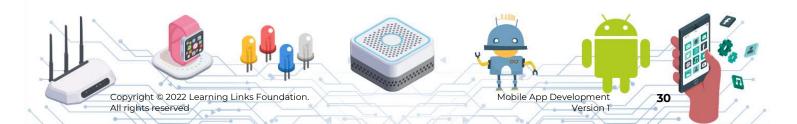
Now let's add the code for making the sum of the bill.

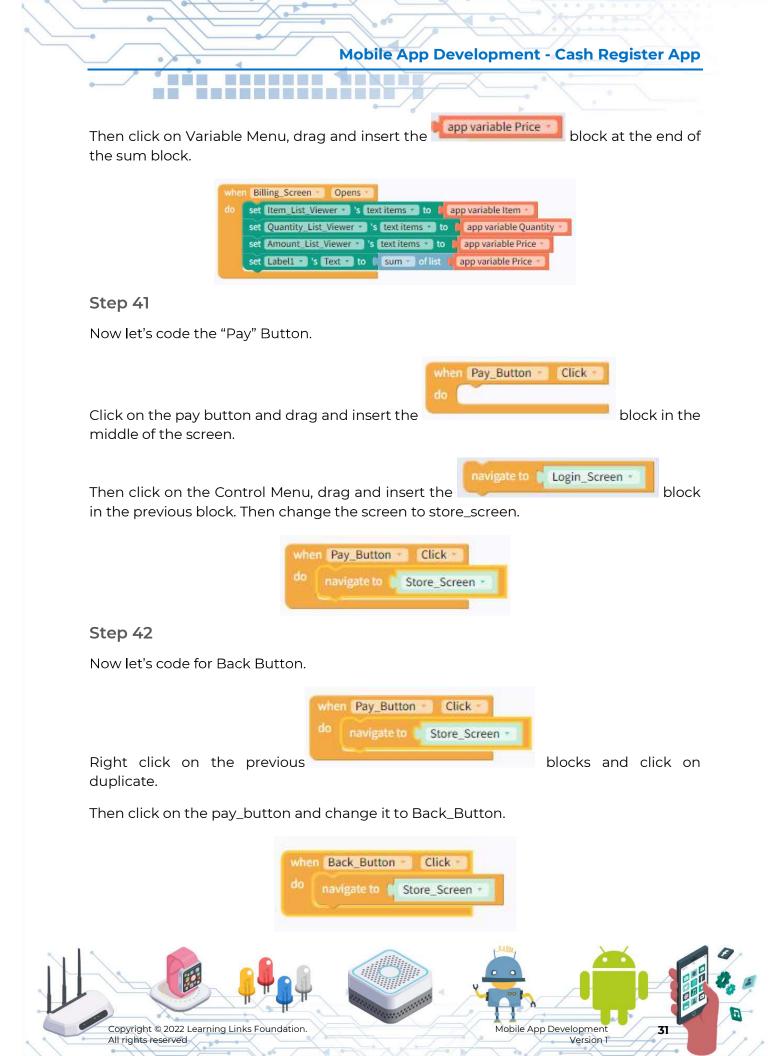
Click	on	the	amount	label	and	drag	and	insert	the
set [	Amount_Lab	el3 🔹 's 🕻	Text 🖬 to 🌘 🗹	Label 2	block at	the end c	of the pre	vious bloc	k.



Now click on the List Menu, Drag and insert the place of label. Then remove the list 1, 2 block.



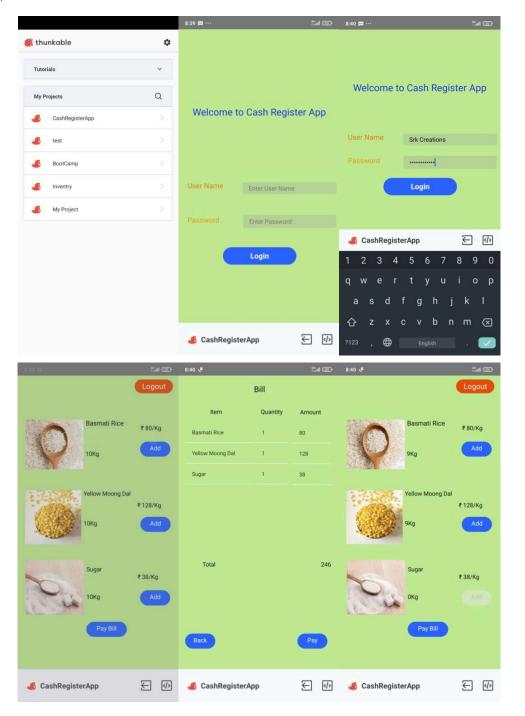


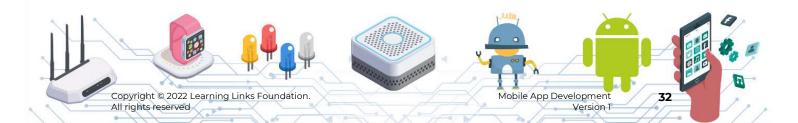


#### Step 43

Congratulations you have successfully completed the project. Navigate through the app and explore it.

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#### **Reflection:**

1. What do you think is the purpose of loops in our code?

2. Research and find out the differences between User Interface and User Experience.

- 3. What is the purpose of "When do" function?
- 4. What improvements do you recommend to this App?
- **5.** Given a chance to build your own app to solve a real-world problem, what kind of app would you build and which problem your app would solve?



