

PERSONAL EXPENSE TRACKER APPLICATION

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ABSTRACT

Personal Expense Tracker is an android based application. This application allows the user to maintain a computerized diary. Personal Expense Tracker Application which will keep a track of expenses of a user on a day-to-day basis. This application keeps a record of your expenses and also will give you a category wise distribution of your expenses. With the help of this application user can track their daily/weekly/monthly expenses. This application will also have a feature which will help you stay on budget because you know your expenses. This expense tracker application will generate report at the end of month to show the expense via a graphical representation.

Keywords: Daily Expense and Income, Expense Module

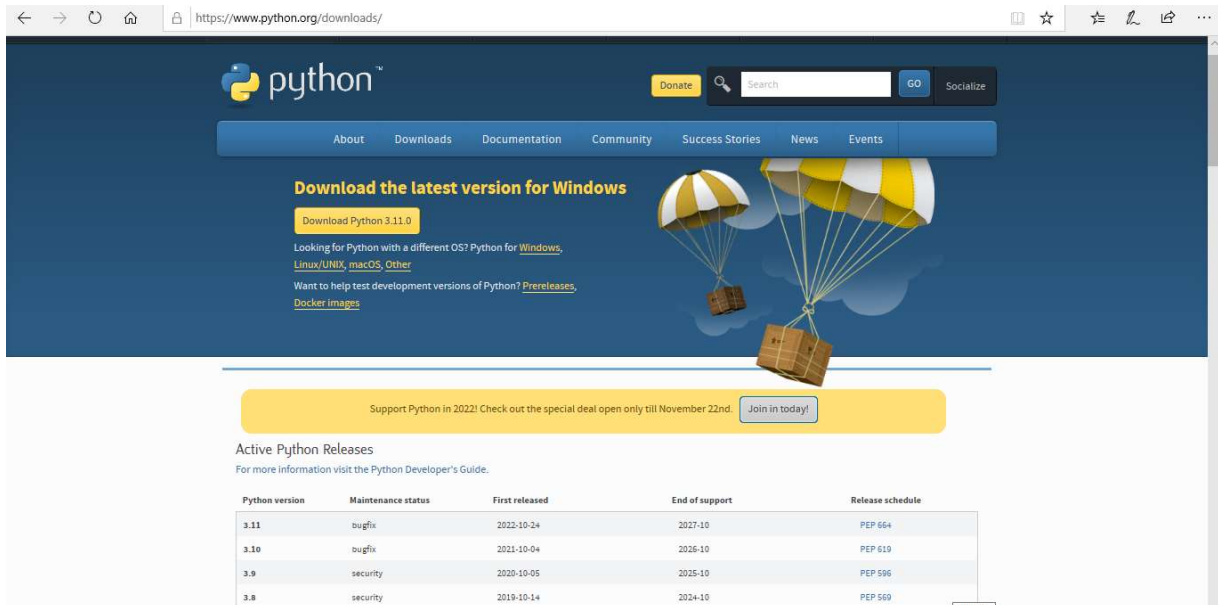
I.INTRODUCTION

Nowadays, people are concerned about regularity of their daily expenses. This is done mainly for keep track of the user's daily expenses to have a control of user's monthly expenses. We have developed an application named "Personal Expense Tracker Application and this application is used to manage the user's daily expenses in a more coherent and manageable way. This application will help us to reduce the manual calculations for their daily expenses and also keep the track of the expenses. With the help of this application, user can calculate his total expenses per day and these results will be stored for unique user. As the traditional methods of budgeting, we need to maintain the Excel sheets, word documents, notes, and files for the user daily and monthly expenses. There is no such full-fledged solution to keep a track of our daily expenses easily. Keeping a log in diary is a very monotonous process and also may sometimes lead into problems due to the manual calculations. Looking on all the above given conditions, we are trying to satisfy the user requirements by building a mobile application which will help them reduces their burdens. "Expense Tracker Application" is an application where

one can enter their daily expenses and end of the day; they know their expenses in charts.

II.SETTING UP APPLICATION ENVIRONMENT

CREATE FLASK PROJECT



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Python version	Maintenance status	First released	End of support	Release schedule
3.11	bugfix	2022-10-24	2027-10	PEP 664
3.10	bugfix	2021-10-04	2026-10	PEP 619
3.9	security	2020-10-05	2025-10	PEP 596
3.8	security	2019-10-14	2024-10	PEP 569

```
Select Command Prompt
Microsoft Windows [Version 10.0.17763.1577]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\ELCOT>python --version
Python 3.11.0

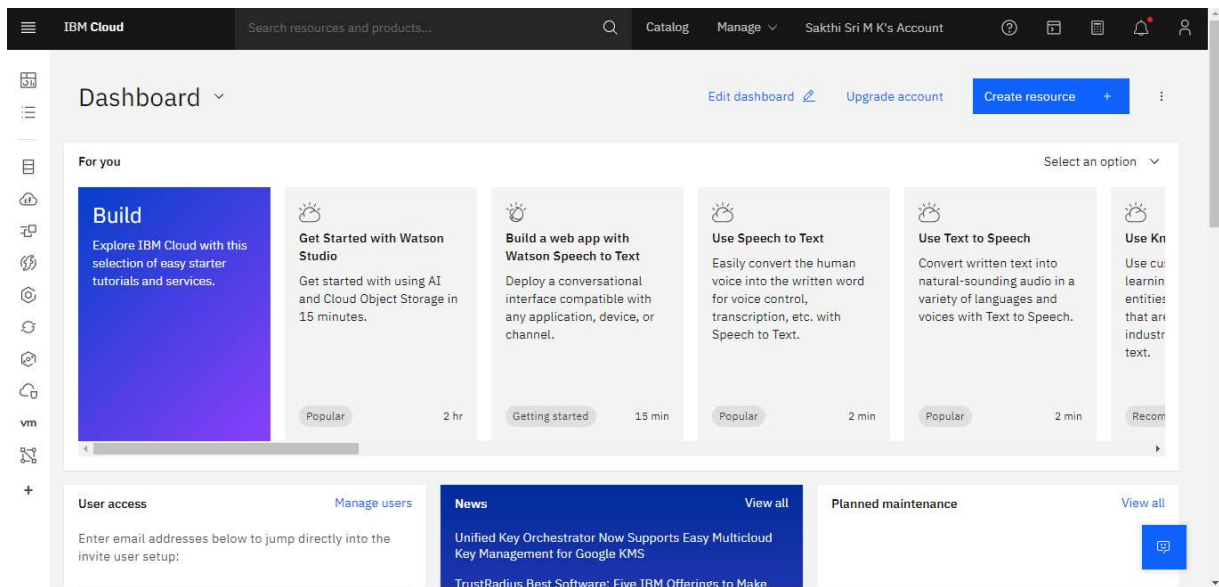
C:\Users\ELCOT>pip --version
pip 22.3 from C:\Users\ELCOT\Lib\site-packages\pip (python 3.11)

C:\Users\ELCOT>pip install flask
Collecting flask
  Downloading Flask-2.2.2-py3-none-any.whl (101 kB)
----- 101.5/101.5 kB 530.4 kB/s eta 0:00:00
Collecting Werkzeug>=2.2.2
  Downloading Werkzeug-2.2.2-py3-none-any.whl (232 kB)
----- 232.7/232.7 kB 1.0 MB/s eta 0:00:00
Collecting Jinja2>=3.0
  Downloading Jinja2-3.1.2-py3-none-any.whl (133 kB)
----- 133.1/133.1 kB 491.4 kB/s eta 0:00:00
Collecting itsdangerous>=2.0
  Downloading itsdangerous-2.1.2-py3-none-any.whl (15 kB)
Collecting click>=8.0
  Downloading click-8.1.3-py3-none-any.whl (96 kB)
----- 96.6/96.6 kB 690.8 kB/s eta 0:00:00
Collecting colorama
  Downloading colorama-0.4.6-py2.py3-none-any.whl (25 kB)
Collecting MarkupSafe>=2.0
  Downloading MarkupSafe-2.1.1.tar.gz (18 kB)
  Preparing metadata (setup.py) ... done
Installing collected packages: MarkupSafe, itsdangerous, colorama, Werkzeug, Jinja2, click, flask
  DEPRECATION: MarkupSafe is being installed using the legacy 'setup.py install' method, because it does not have a 'pyproject.toml' and the 'wheel' package is not installed. pip 23.1 will enforce this behaviour change. A possible replacement is to enable the '--use-pep517' option. Discussion can be found at https://github.com/pypa/pip/issues/8559
  Running setup.py install for MarkupSafe ... done
Successfully installed Jinja2-3.1.2 MarkupSafe-2.1.1 Werkzeug-2.2.2 click-8.1.3 colorama-0.4.6 flask-2.2.2 itsdangerous-2.1.2

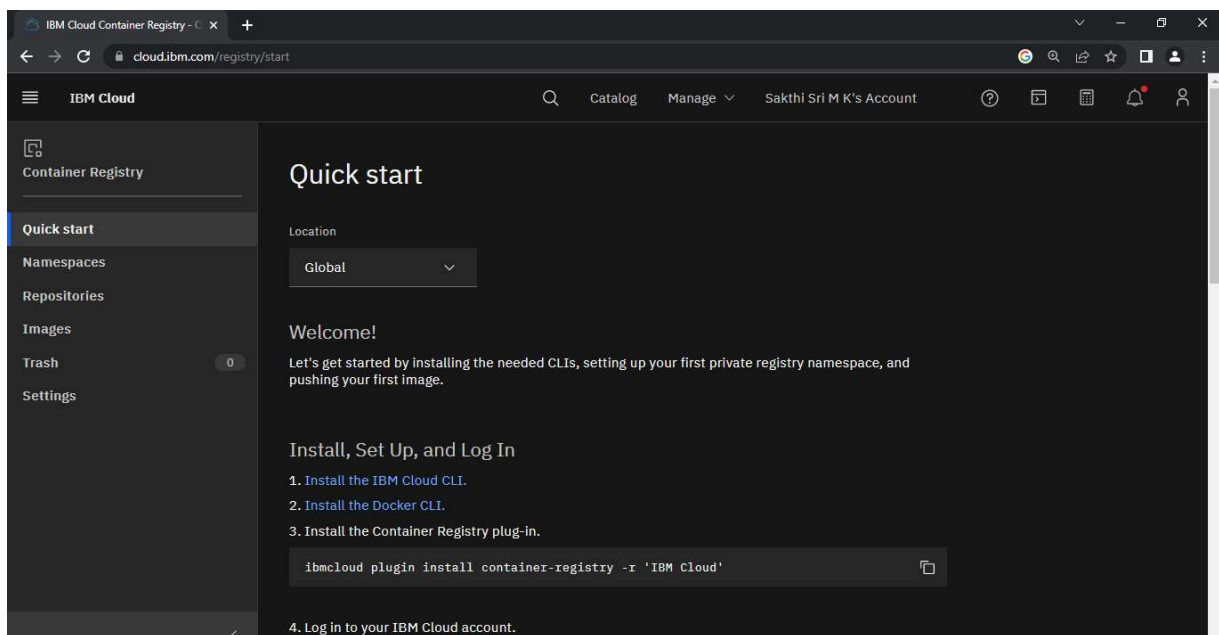
[notice] A new release of pip available: 22.3 -> 22.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip

C:\Users\ELCOT>
```

CREATE IBM CLOUD ACCOUNT



INSTALL IBM CLOUD CLI



```
Command Prompt
C:\Users\DELL>ibmcloud update
Checking for updates...
No update required. Your CLI is already up-to-date.
To view available plugin updates, run 'ibmcloud plugin list'.

C:\Users\DELL>ibmcloud login
API endpoint: https://cloud.ibm.com

Email> 19cs047@syedengg.co.in

Password>
Authenticating...
OK

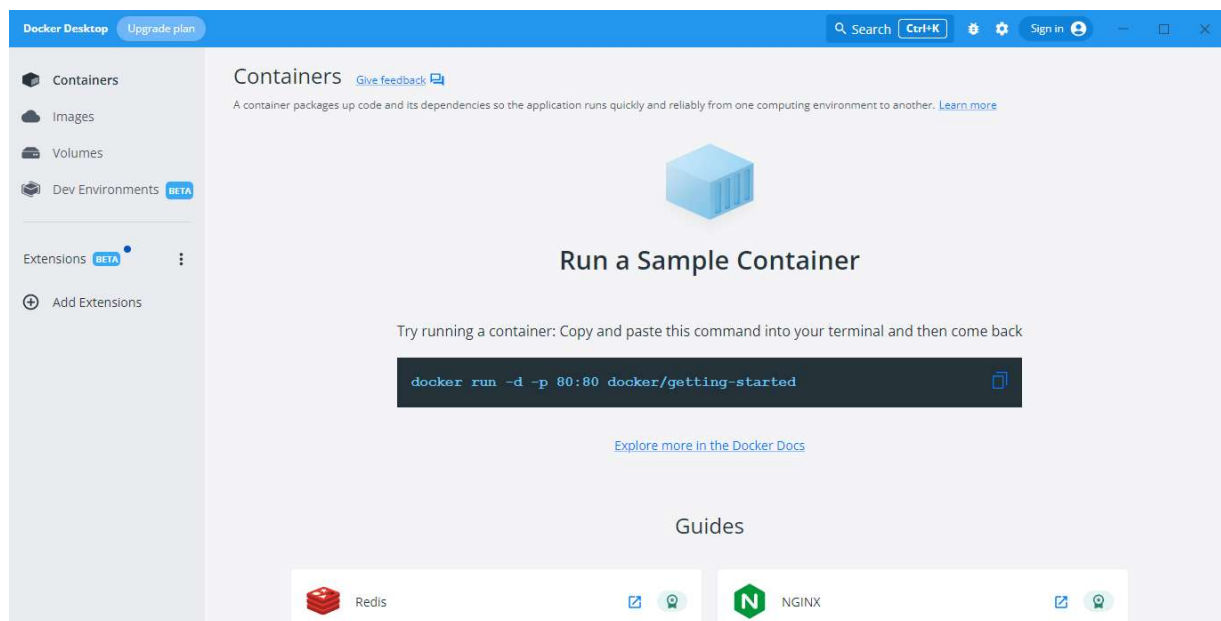
Targeted account Sakthi Sri M K's Account (9872b9511d8043b88a6489892db18d66)

Select a region (or press enter to skip):
1. au-syd
2. in-che
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number> 1
Targeted region au-syd

API endpoint: https://cloud.ibm.com
Region: au-syd
User: 19cs047@syedengg.co.in
Account: Sakthi Sri M K's Account (9872b9511d8043b88a6489892db18d66)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\DELL>
```

DOCKER CLI INSTALLATION



```
Microsoft Windows [Version 10.0.19044.2251]
(c) Microsoft Corporation. All rights reserved.


C:\Users\Admin>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
e96e057aae67: Pull complete
Digest: sha256:4b1d0c4a2d2aaf63b3711f34eb9fa89fa1bf53dd6e4ca954d47caebca4005c2
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest

C:\Users\Admin>docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
ubuntu              latest      a8780b506fa4 11 days ago   77.8MB
k8s.gcr.io/kube-apiserver v1.25.2    97801f839490 7 weeks ago   128MB
k8s.gcr.io/kube-scheduler v1.25.2    ca0ea1ee3cfd 7 weeks ago   50.6MB
k8s.gcr.io/kube-proxy v1.25.2    1c7d8c51823b 7 weeks ago   61.7MB
k8s.gcr.io/pause 3.8         4873874c08ef 5 months ago  711kB
k8s.gcr.io/coredns v1.9.3     5185b96f0bec 5 months ago  48.8MB
docker/desktop-vpnkit-controller v2.0      8c2c38aa676e 18 months ago 21MB
docker/desktop-storage-provisioner v2.0      99f89471f470 18 months ago 41.9MB

C:\Users\Admin>docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
e9995326b091: Pull complete
71689475aec2: Pull complete
f88a23025338: Pull complete
0df440342e26: Pull complete
eef26ceb3309: Pull complete
8e3ed6a9e43a: Pull complete
Digest: sha256:943c25b4b66b332184d5ba6bb18234273551593016c0e0ae906bab111548239f
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest

C:\Users\Admin>
```

CREATE AN ACCOUNT IN SENDGRID



Let's Get Started

Sign up for free. No credit card required.

Email Address *

naagu904792@gmail.com


☒ Use email address as username

Password *

.....

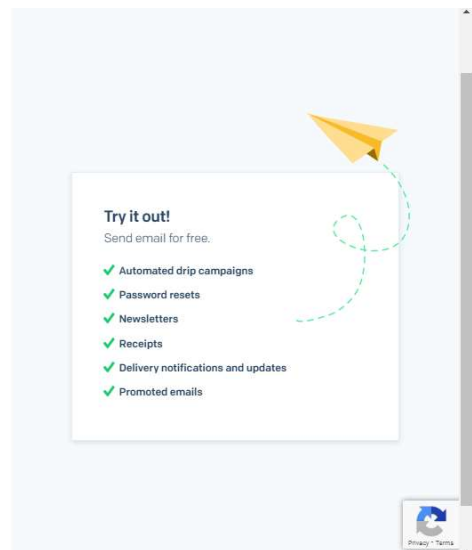
Must have at least 16 characters.

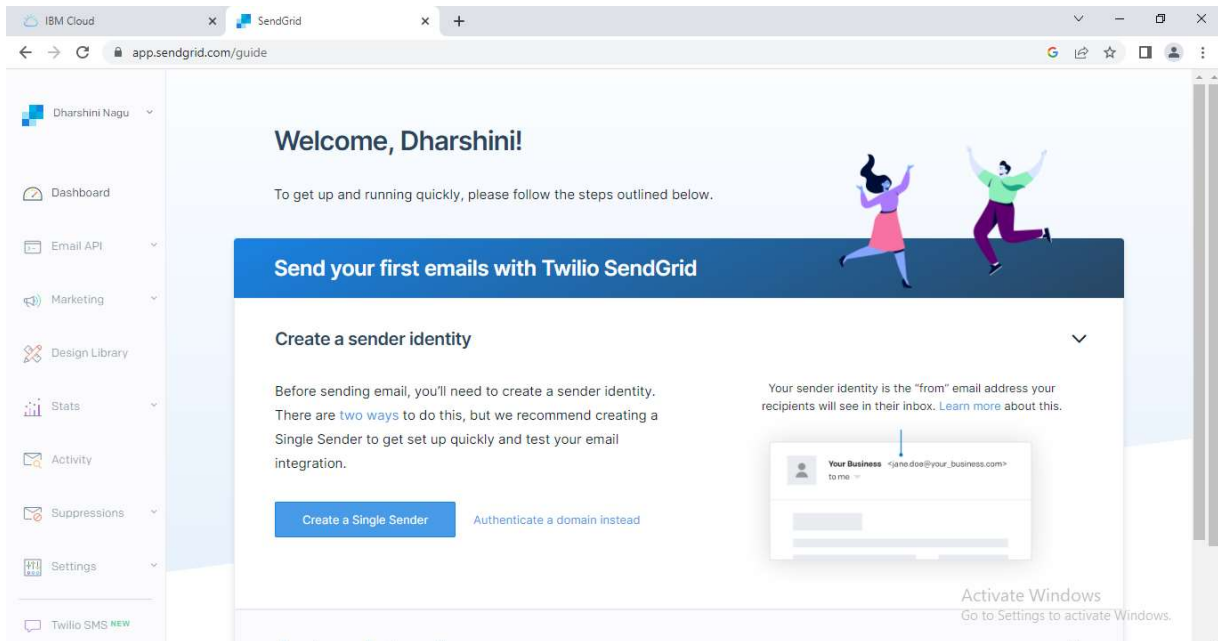
✓ I'm not a robot

 reCAPTCHA
Privacy - Terms

☒ I accept the [Terms of Service](#) and have read the [Privacy Notice](#)

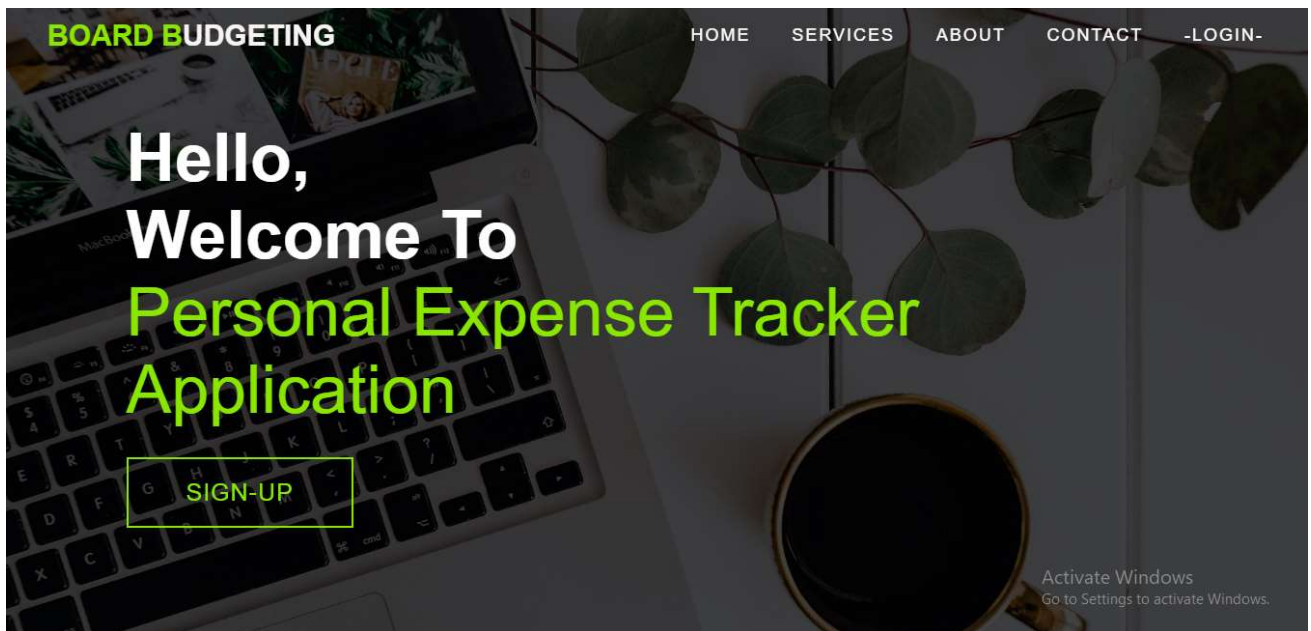
Create Account





III.IMPLEMENTING WEB APPLICATION

CREATE UI TO IMPLEMENT WITH APPLICATION





WELCOME

Username

Password


[Forgot Password?](#)

LOGIN


Don't have an account?


[REGISTER here](#)


Activate Windows
Go to Settings to activate Windows.



Hello, Friend

 Name

 Example@gmail.com


 Password

☐ I read and agree to [Terms & Conditions](#)

CREATE ACCOUNT

Already have an account? [Sign in](#)

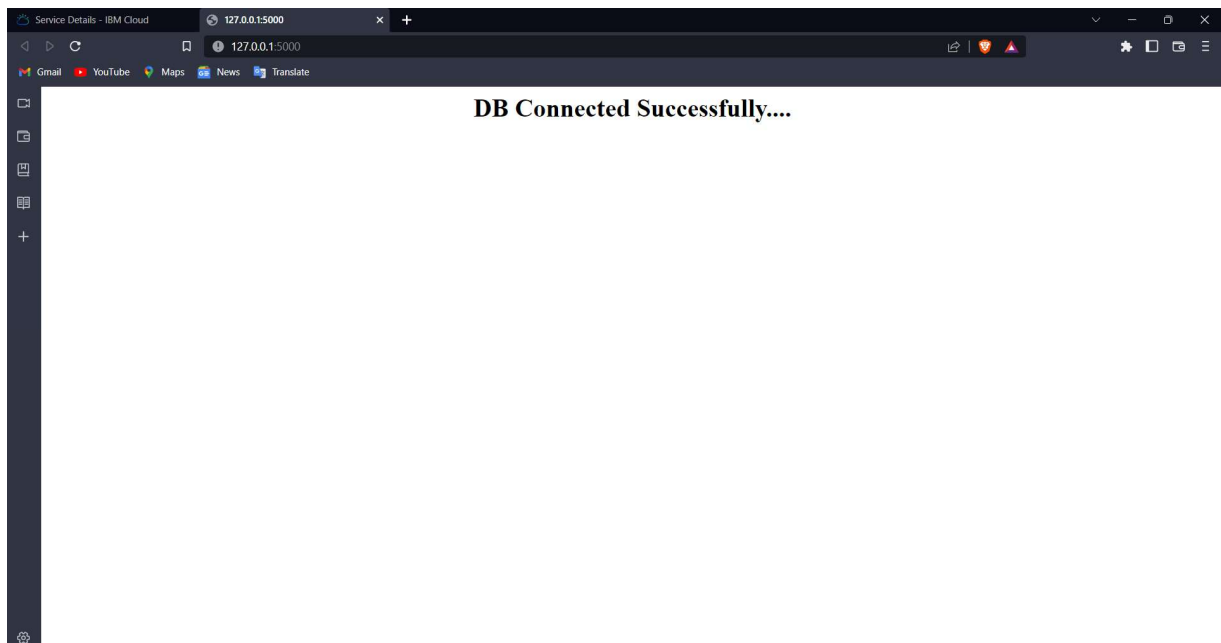
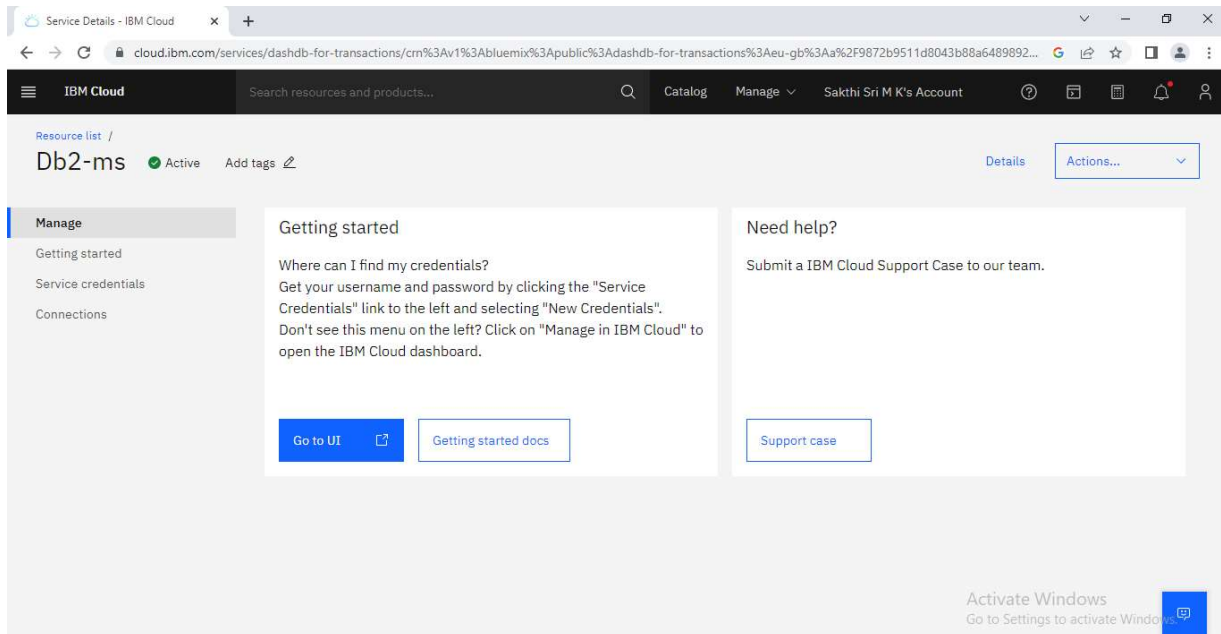
Glad to see you



Welcome, Please Fill in the blanks for sign up

Activate Windows
Go to Settings to activate Windows.

CREATE IBM DB2 & CONNECT WITH PYTHON

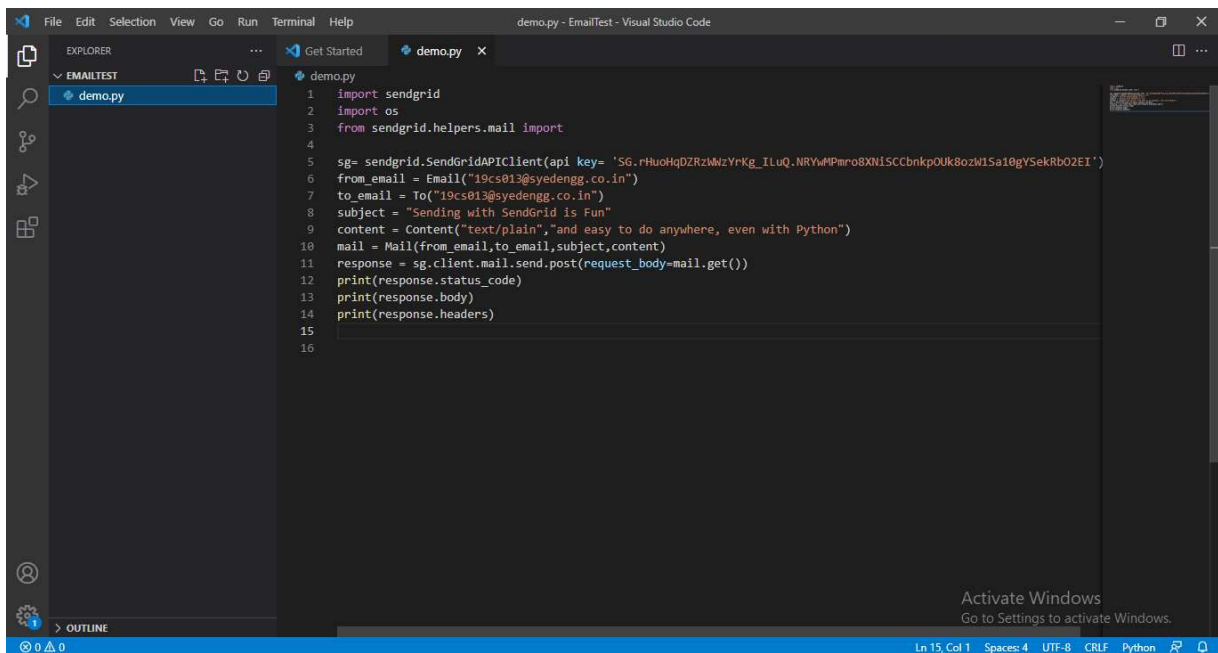



```

1  from flask import Flask
2
3  import ibm_db
4  conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=2d46b6b4-cbf6-40eb-bbce-6251e6ba0300.bs2io90l08kqb1od8lcg.
    databases.appdomain.cloud;PORT=32328;SECURITY=SSL;SSLServerCertified=DigiCertGlobalRootCA.crt;UID=cmm81287;
    PWD=0s470P0fg4C4Yird","", '')
5  print(conn)
6  print("Connection Succesful.....")
7
8
9  app = Flask(__name__)
10
11 @app.route('/')
12 def index():
13     return "<center><h1>DB Connected Successfully....</h1></center>"

```

IV.INTEGRATING SENDGRID SERVICE



The screenshot shows the Visual Studio Code interface with a file named 'demo.py' open. The code imports 'sendgrid' and 'os', then uses 'sendgrid.helpers.mail' to send an email. The email is sent from '19cs013@syedengg.co.in' to '19cs013@syedengg.co.in' with the subject 'Sending with SendGrid is Fun'. The content is 'and easy to do anywhere, even with Python'. The script prints the status code, body, and headers of the response.

```

1  import sendgrid
2  import os
3  from sendgrid.helpers.mail import
4
5  sg= sendgrid.SendGridAPIClient(api key= 'SG.rHuoHqDZR2WzYrKg_ILuQ.NRYwMPmo8XN15CCbnkpOUk8ozW1Sa10gYSekRb02EI')
6  from_email = Email("19cs013@syedengg.co.in")
7  to_email = To("19cs013@syedengg.co.in")
8  subject = "Sending with SendGrid is Fun"
9  content = Content("text/plain", "and easy to do anywhere, even with Python")
10 mail = Mail(from_email,to_email,subject,content)
11 response = sg.client.mail.send.post(request_body=mail.get())
12 print(response.status_code)
13 print(response.body)
14 print(response.headers)
15
16

```

```

b''
Server: nginx
Date: Tue, 15 Nov 2022 07:57:45 GMT
Content-Length: 0
Connection: close
X-Message-Id: UfsTvTgqSoCKPyCSqdILZw
Access-Control-Allow-Origin: https://sendgrid.api-docs.io
Access-Control-Allow-Methods: POST
Access-Control-Allow-Headers: Authorization, Content-Type, On-behalf-of, x-sg-elas-acl
Access-Control-Max-Age: 600
X-No-CORS-Reason: https://sendgrid.com/docs/Classroom/Basics/API/cors.html
Strict-Transport-Security: max-age=600; includeSubDomains

```

V.DEPLOYMENT OF APP IN IBM CLOUD

CONTAINERIZE THE APP

1. DOCKER IMAGE CREATION

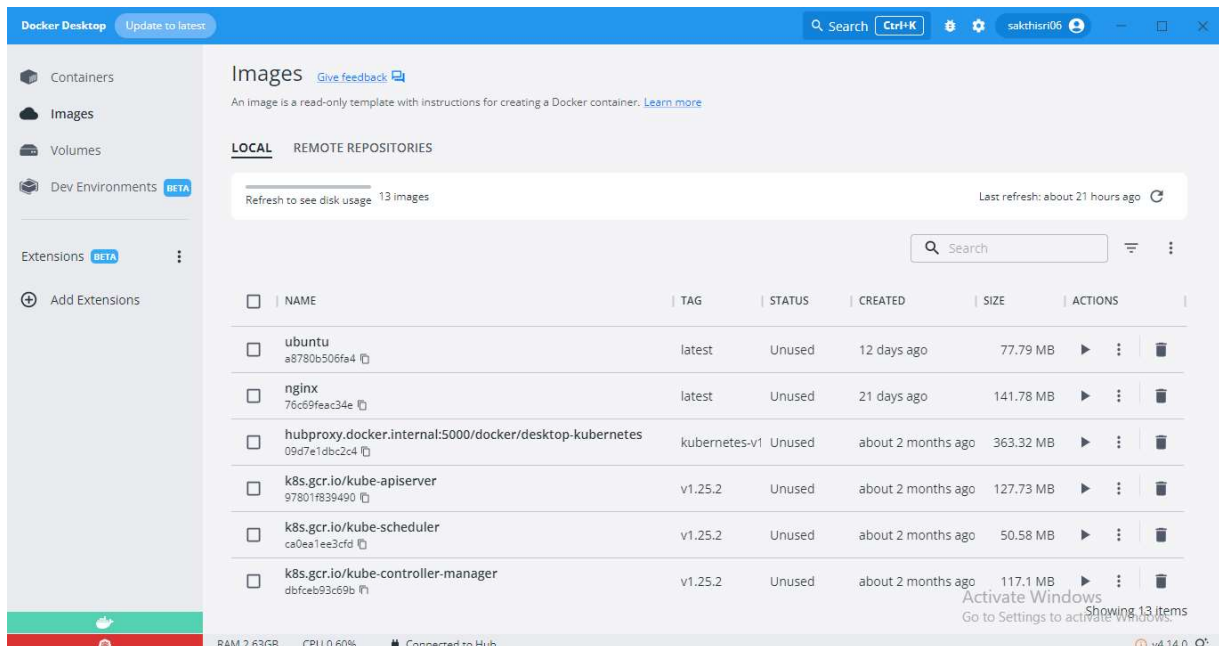
```
Microsoft Windows [Version 10.0.19044.2251]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
Digest: sha256:4b1d0c4a2d2aaf63b3711f34eb9fa89fa1bf53dd6e4ca954d47caebca4005c2
Status: Image is up to date for ubuntu:latest
docker.io/library/ubuntu:latest

C:\Users\Admin>docker pull centos
Using default tag: latest
latest: Pulling from library/centos
Digest: sha256:a27fd08080b517143cbbbab9dfb7c8571c40d67d534bbdee55bd6c473f432b177
Status: Image is up to date for centos:latest
docker.io/library/centos:latest

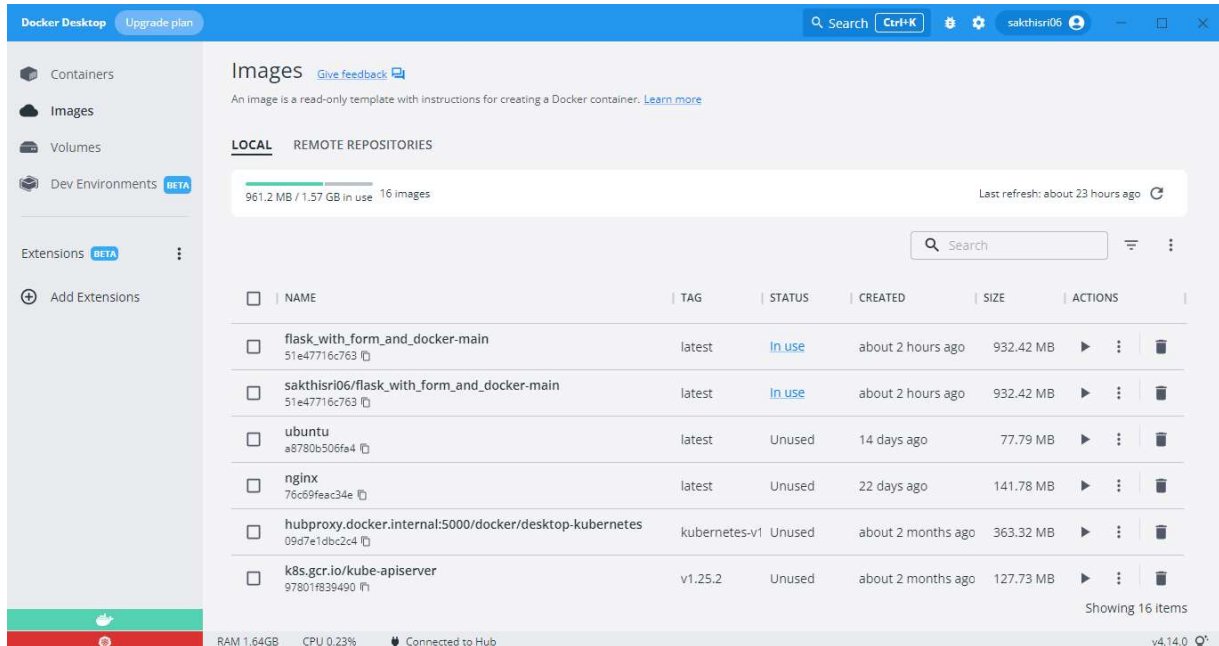
C:\Users\Admin>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ubuntu	latest	a8780b506fa4	12 days ago	77 MB
nginx	latest	76c69feac34e	2 weeks ago	14 MB
hubproxy.docker.internal:5000/docker/desktop-kubernetes	kubernetes-v1.25.2-cni-v1.1.1-critools-v1.24.2-cri-dockerd-v0.2.5-1-debian	09d7e1dbc2c4	7 weeks ago	36 MB
k8s.gcr.io/kube-apiserver	v1.25.2	97801f839490	7 weeks ago	12 MB
k8s.gcr.io/kube-controller-manager	v1.25.2	dbfceb93c69b	7 weeks ago	11 MB
k8s.gcr.io/kube-scheduler	v1.25.2	ca0ea1ee3cfd	7 weeks ago	50 MB
k8s.gcr.io/kube-proxy	v1.25.2	1c7d8c51823b	7 weeks ago	61 MB
k8s.gcr.io/pause	3.8	4873874c08ef	5 months ago	71 MB
k8s.gcr.io/etcd	3.5.4-0	a8a176a5d5d6	5 months ago	30 MB
k8s.gcr.io/coredns	v1.9.3	5185b96f0bec	5 months ago	48 MB
centos	latest	508a5dc9704	14 months ago	23 MB
docker/desktop-vpnkit-controller	v2.0	8c2c38aa676e	18 months ago	21 MB



2. CREATING DOCKER IMAGE FOR FLASK APP

```
Command Prompt - docker build -f flask_with_form_and_docker-main .
D:\Dockerfiles\flask_with_form_and_docker-main>docker build -t flask_with_form_and_docker-main .
[+] Building 2932.1s (11/11) FINISHED
=> [internal] load .dockerignore
=> => transferring context: 2B
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 170B
=> [internal] load metadata for docker.io/library/python:3.10.6
=> [auth] library/python:pull token for registry-1.docker.io
=> [1/5] FROM docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35ae93e8979a240d29677cb03e6aa91052
=> => resolve docker.io/library/python:3.10.6@sha256:745efdfb7e4aac9a8422bd8c62d8bc35ae93e8979a240d29677cb03e6aa91052
=> => sha256:745efdfb7e4aac9a8422bd8c62d8bc35ae93e8979a240d29677cb03e6aa91052 2.35kB / 2.35kB
=> => sha256:8d1f943ceaff3b3ce05d5f5c0926e7958836b048b700176bf9c56d8f37ac13fca 2.22kB / 2.22kB
=> => sha256:d25ae6380b10283603ff606d777bba5c8b1b0126fb0be7d118b9574946bcf84 8.53kB / 8.53kB
=> => sha256:1671565cc8d8f8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 55.01MB / 55.01MB
=> => sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 5.16MB / 5.16MB
=> => sha256:fa9c7528c685216129e8e7bf362a7702e7b1daa585ab85546a41508830657d6 10.88MB / 10.88MB
=> => sha256:52ad072f9cd16fc0e93b182b20e75ae11acc0ef60b0abef09f1043c08de1901a 54.58MB / 54.58MB
=> => sha256:d0b08311753b718374f1701ef59d422fae613c7908c6553ba82a150e44da3 106.70MB / 106.70MB
=> => sha256:d8092d55ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbc7581e24a6c 6.29MB / 6.29MB
=> => sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 20.02MB / 20.02MB
=> => sha256:864a10b3c704553e08cb5fcd12fbdee1c07040f6365f0fa35e84a285413da40b 234B / 234B
=> => sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 3.04MB / 3.04MB
=> => extracting sha256:1671565cc8d8f8c365c9b661d3fbc164e73d01f1b0430c6179588428f99a9da2e 28.15
=> => extracting sha256:3e94d13e55e7a4ef17ff21376f57fb95c7e1706931f8704aa99260968d81f6e4 4.85
=> => extracting sha256:fa9c7528c685216129e8e7bf362a7702e7b1daa585ab85546a41508830657d6 8.95
=> => extracting sha256:52ad072f9cd16fc0e93b182b20e75ae11acc0ef60b0abef09f1043c08de1901a 49.25
=> => extracting sha256:d0b08311753b718374f1701ef59d422fae613c7908c6553ba82a150e44da3 1624.55
=> => extracting sha256:d8092d55ded5476fe7c302256eb4dc6ff495ae8fb4dd28aa18dbc7581e24a6c 122.55
=> => extracting sha256:c71afc637d59adc44c5fd3c348504df82b35bbb204f0057ea22c6ac8a1d285a5 93.15
=> => extracting sha256:864a10b3c704553e08cb5fcd12fbdee1c07040f6365f0fa35e84a285413da40b 0.15
=> => extracting sha256:4334b2fe8293d19ddc1c3559093aae88f21601a7c85a31c6da6c0dc48fb6ed3c 21.25
=> [internal] load build context
=> => transferring context: 11.48kB
=> [2/5] WORKDIR /app
=> [3/5] COPY requirements.txt ./
=> [4/5] RUN pip install -r requirements.txt
=> [5/5] COPY . .
=> exporting to image
=> => exporting layers
=> => writing image sha256:51e47716c763505ac006f9c8a437800ea048c5b9cfde69f8410bdd0bf828ab
=> => naming to docker.io/library/flask_with_form_and_docker-main
Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
```



UPLOAD IMAGE TO CONTAINER REGISTRY

```
Command Prompt

C:\Users\Dell>ibmcloud cr login
Logging 'docker' in to 'uk.icr.io'...
Logged in to 'uk.icr.io'.

OK

C:\Users\Dell>docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
Digest: sha256:faa03e786c97f07ef34423fccceec2398ec8a5759259f94d99078f264e9d7af
Status: Image is up to date for hello-world:latest
docker.io/library/hello-world:latest

C:\Users\Dell>docker tag hello-world uk.icr.io/app1_flask/hello-world:latest

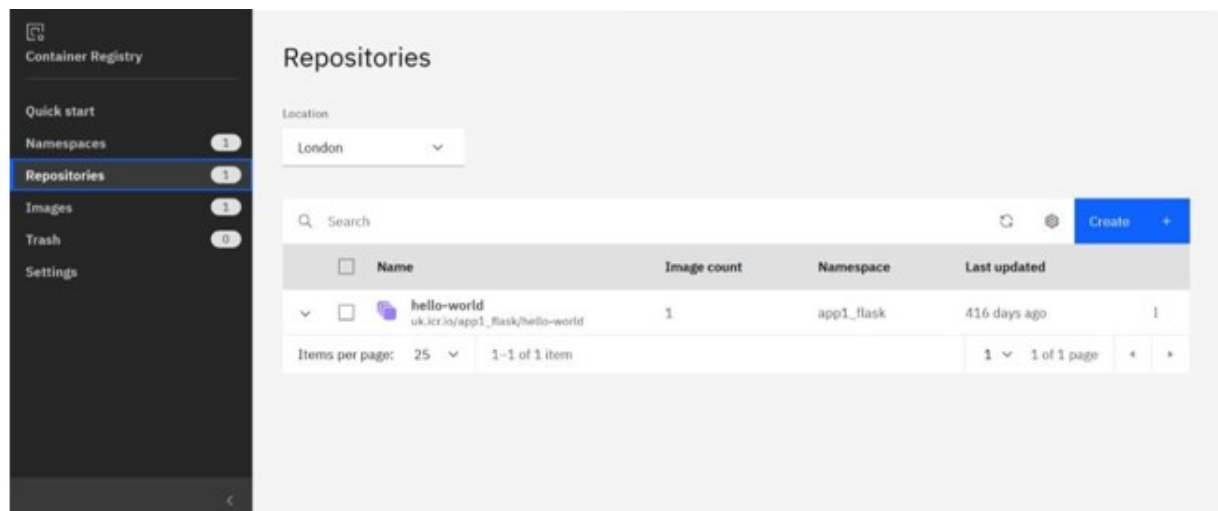
C:\Users\Dell>docker push uk.icr.io/app1_flask/hello-world:latest
The push refers to repository [uk.icr.io/app1_flask/hello-world]
e07eelbaac5f: Pushed
latest: digest: sha256:f54a58bc1aac5ea1a25d796ae155dc228b3f0e11d046ae276b39c4bf2f13d8c4 size: 525

C:\Users\Dell>ibmcloud cr image-list
Listing images...

Repository                                Tag      Digest              Namespace    Created      Size      Security status
uk.icr.io/app1_flask/hello-world          latest   f54a58bc1aac        app1_flask   1 year ago   2.5 kB    -

OK

C:\Users\Dell>
```



DEPLOY IN KUBERNETES CLUSTER

cloud.ibm.com/kubernetes/clusters/cdr7kf04hgo02kv30/nodes

IBM Cloud Search resources and products... Catalog Manage Sakthi Sri M K's Account

Clusters / mycluster-free Normal Expires in 30 days Add tags Help Kubernetes dashboard Actions...

Overview Worker nodes Worker pools DevOps New

Pool: Filter... Search Add +

Name	Status	Worker pool	Zone	Private IP	Public IP	Version
00000002	Normal	default	Milan 01	10.144.228.68	159.122.175.160	1.24.7_1543

ID
kube-cdr7kf04hgo02kv30-myclusterfr-default-00000002

Status -- Flavor Free - 2 vCPUs 4GB RAM Private VLAN 2218181 Public VLAN 2218179

Items per page: 25 1-1 of 1 item 1 1 of 1 page

Activate Windows
Go to Settings to activate Windows.

kubernetes kubernetes-das... Search +

Workloads

Workloads Cron Jobs Daemon Sets Deployments Jobs Pods Replica Sets Replication Controllers Stateful Sets Service Ingresses Ingress Classes Services Config and Storage Config Maps

Deployments

Name	Images	Labels	Pods	Created
dashboard-metrics-scraper	kubernetesui/metrics-scraper-v1.0.8	k8s-app: dashboard-metrics-scraper	1 / 1	a day ago
kubernetes-dashboard	kubernetesui/dashboard-v2.6.1	k8s-app: kubernetes-dashboard	1 / 1	a day ago

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
dashboard-metrics-scraper-64bcc67c9c-5ln6w	kubernetesui/metrics-scraper-v1.0.8	k8s-app: dashboard-metrics-scraper pod-template-hash: 64bcc67c9c	docker-desktop	Running	3	-	-	a day ago
kubernetes-dashboard-66c887f759-kqdzv	kubernetesui/dashboard-v2.6.1	k8s-app: kubernetes-dashboard pod-template-hash: 66c887f759	docker-desktop	Running	3	-	-	a day ago

VI.IDEATION PHASE

LITERATURE SURVEY ON THE SELECTED PROJECT AN INFORMATION GATHERING

Author: Prof Miriam Thomas, Lakshmi P, Dr.Mahalakshmi T (2022)

- Budgeting systematically and Expense Tracking takes a crucial role in managing the expenses of business organizations.
- By using software for managing expense tracking will help to control unnecessary expenses.
- The project what we have developed is work more efficient than the other income and expense tracker.
- Modules are designed to be highly flexible so that any failure requirement can be easily added to the modules without facing many problems.

Author: Adepegba O.A., Fayemiwo M.A., Oduwole O.A.,Onamade A.A (2019)

The use of this application will among other things help to monitor rate of spending, refresh information and give warning notifications among other things.

- The wide use of these android mobile phones and their ability to run software applications, make a lot of sense in making this application android based.
- Great advantages of the use of Information technology in the financial sector of our growing economy in such a way that enhances expenses monitoring and financial life in general.

Author: Atiya Kaz11, Praphulla, S KheradeRaj, S.Vilankar, Parag MSawant (2021)

- The “Expense Tracker” is developed using Angular 8 for front end and SQL lite for back end.
- The application keeps the track of the Income and Expenses both of user on a day-to-day basis.
- When the month’s end is arrived at the complete pay, all out past expense and all-out future expense are determined and shown for the user.

Author: Velmurugan A, Albert Mayan J, NiranjaaP and Richard Francis (2020)

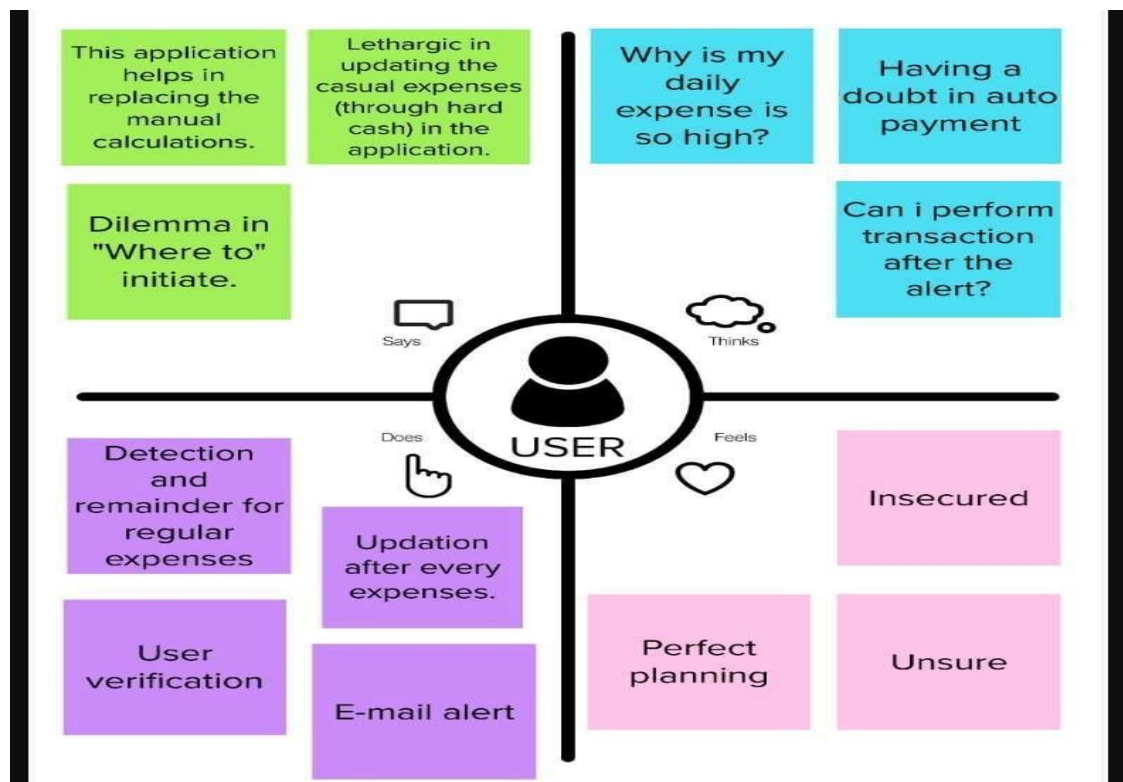
- The main aim of this paper is to manage personal and group expenses. Not many applications provide a variety of features within a single application.

- We develop an android application that keeps record of user personal expenses, his/her personal contribution towards group expenses, top investment options , view stock market , read authenticated news and grab the best ongoing offers in the market in popular categories.
- It is designed efficiently to give you the best suggestions for finance planning. The application size is less than 10 MB.

Author: Saumya Dubey, Pragya Dubey, Rignved Rishabh Kumar, AaishaKhatoon (2022)

- “STUDENT EXPENSE TRACKING APPLICATION” app marks all the expenses and helps the user to keep an eye on his/her expenses so that the user is on financially stable path.
- The conclusion can be derived using some basic techniques such as clustering, classification and association.
- In this world of growing technologies everything is digitalized. With large number of money transaction and many more things done by the students related to money.

PREPARE EMPATHY MAP



BRAINSTORM & IDEA PRIORITIZATION

1 Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and use the pencil tool to draw shapes to start drawing!

2 Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

IDEA PRIORITIZATION

Quick add-ons

- A** Share the mural
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.
- E** Export the mural
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

- Strategy blueprint**
Define the components of a new idea or strategy.
[Open the template →](#)
- Customer experience journey map**
Understand customer needs, motivations, and obstacles for an experience.
[Open the template →](#)
- Strengths, weaknesses, opportunities & threats**
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.
[Open the template →](#)

[Share template feedback](#)

PROBLEM STATEMENT

In simple words, personal finance entails all the financial decisions and activities that a finance app makes your life easier by helping you to manage your finances efficiently. A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management. Personal finance application will ask users to add their expenses and based on their expenses wallet balance will be updated which will be visible to the user. Also, user can get an analysis of their expenditure in graphical forms. They have an option to set a limit for the amount to be used for that particular month if the limit is exceeded the user will be notified with an email alert.

VII.PROJECT DESIGN PHASE-I

PROPOSED SOLUTION

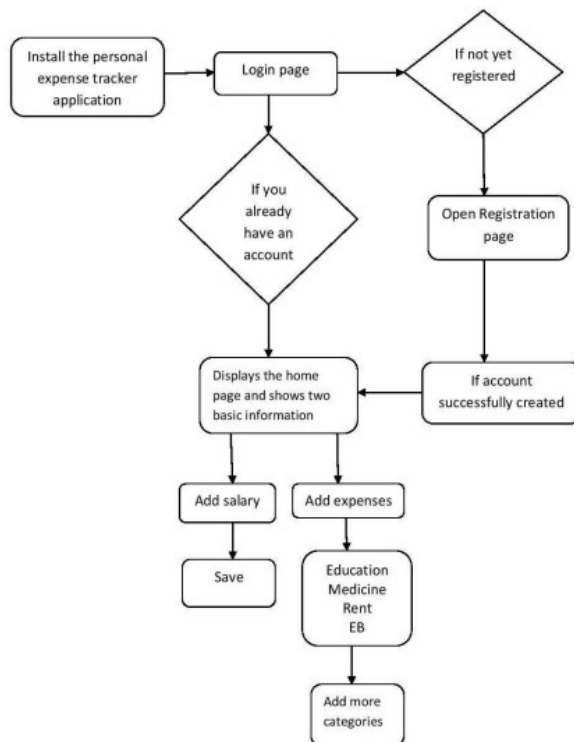
In this proposed system, Personal Expense Tracker is an application which will make things easier and efficient at crucial times and to solve our problem statement. Some of the features are:

- ✓ This application makes user know about their expenses by keeping track of them and make them alert by exceeding them.
- ✓ Group expenses like family couple or business can also be tracked. This makes data better visualization.
- ✓ This application helps people tack expenses and alert themselves from extra spending their easily manage their financial decisions on their spending and savings.
- ✓ This application designed in such a way that any organization can use it for managing their financial issues.

PROBLEM SOLUTION FIT

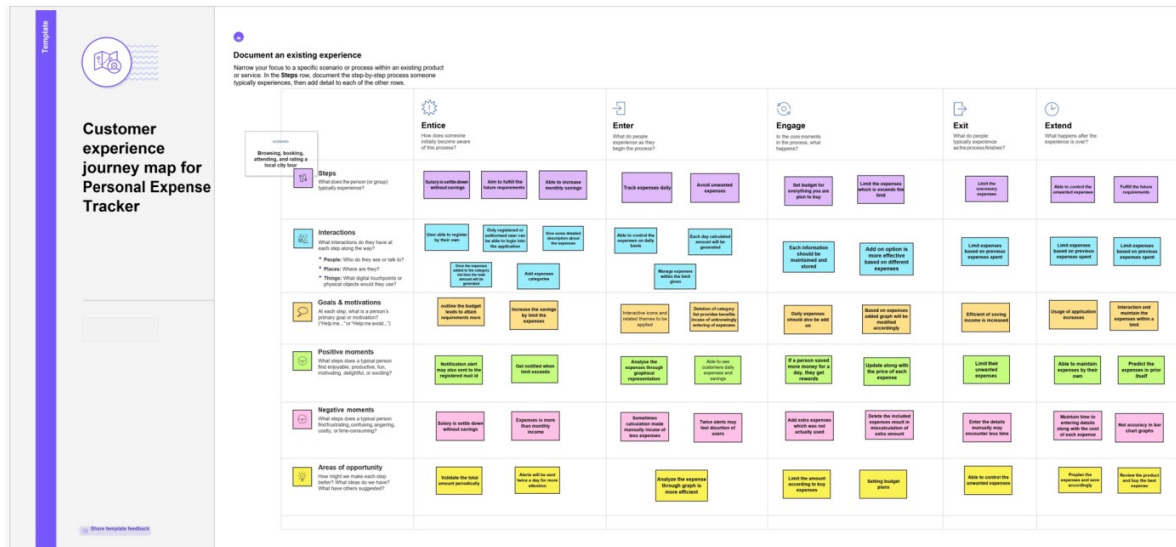
Define CS, fit into CL	1. CUSTOMER SEGMENT(S) CS Individuals who want to track their expenses (Working professionals, Students, etc.)	6. CUSTOMER LIMITATIONS EG. BUDGET, DEVICES CL <ul style="list-style-type: none"> Device with internet connection Subscription payment 	5. AVAILABLE SOLUTIONS PROS & CONS AS <ul style="list-style-type: none"> Goodbudget - free but manual entry of transactions Mint - free & wrong categorization Spendee - many kind of integration but paid 	Explore AS, differentiate
	2. PROBLEMS / PAINS + ITS FREQUENCY PR <ul style="list-style-type: none"> People want to track their expenses everyday and Some people also want to track it especially on some occasions 	9. PROBLEM ROOT / CAUSE RC <ul style="list-style-type: none"> Its hard for the people to manage their financial expenses by keep tracking manually. This makes them to exceed the actual budget that they made. 	7. BEHAVIOR + ITS INTENSITY BE <ul style="list-style-type: none"> People tend to avoid tracking the spendings and worry when they come to know about it. People who try to do it manually will end up leaving some spendings. 	Focus on PR, tap into BE, understand RC
Identify strong TR & EM	3. TRIGGERS TO ACT TR <ul style="list-style-type: none"> People are not aware about the existing solutions especially in India. Providing a visualization about how they spend makes the people to decide easily. Free for sometime and show the results.(retain & premium users) 	10. YOUR SOLUTION SL <ul style="list-style-type: none"> Build an application to track their expenses seamlessly. Allow users to access it for free and make them realize how useful to save money. 	8. CHANNELS of BEHAVIOR CH ONLINE <ul style="list-style-type: none"> Social media advertisements (especially LinkedIn as the users are more of working professionals and students) Lifestyle influencers would be a great choice OFFLINE <ul style="list-style-type: none"> Word of mouth 	Extract online & offline CH of BE
	4. EMOTIONS BEFORE / AFTER EM <ul style="list-style-type: none"> People are worried when the exceed the actual budget and not for saving it. People will be able to track their expenses and bad situations related to financial management. 			

SOLUTION ARCHITECTURE



VIII.PROJECT DESIGN PHASE-II

CUSTOMER JOURNEY MAP



FUNCTIONAL REQUIREMENTS

FR-1 (User Registration): Registration through Form.

FR-2 (User Confirmation): Confirmation via Email.

FR-3 (Dashboard Panel): Insights about the overall expenses with neat graphical representation.

FR-4 (Expense Panel): Add their expense details and get the detailed reports.

FR-5 (Forget Password): Reset the password of the user by sending the link to their email address.

FR-6 (Notifications): Notify the user via their email address about their expense alerts.

NON-FUNCTIONAL REQUIREMENTS

NFR-1(Usability): Used to keep a record of their expense spent.

NFR-2(Security): Use TLS protocol to encrypt the data packets of the application.

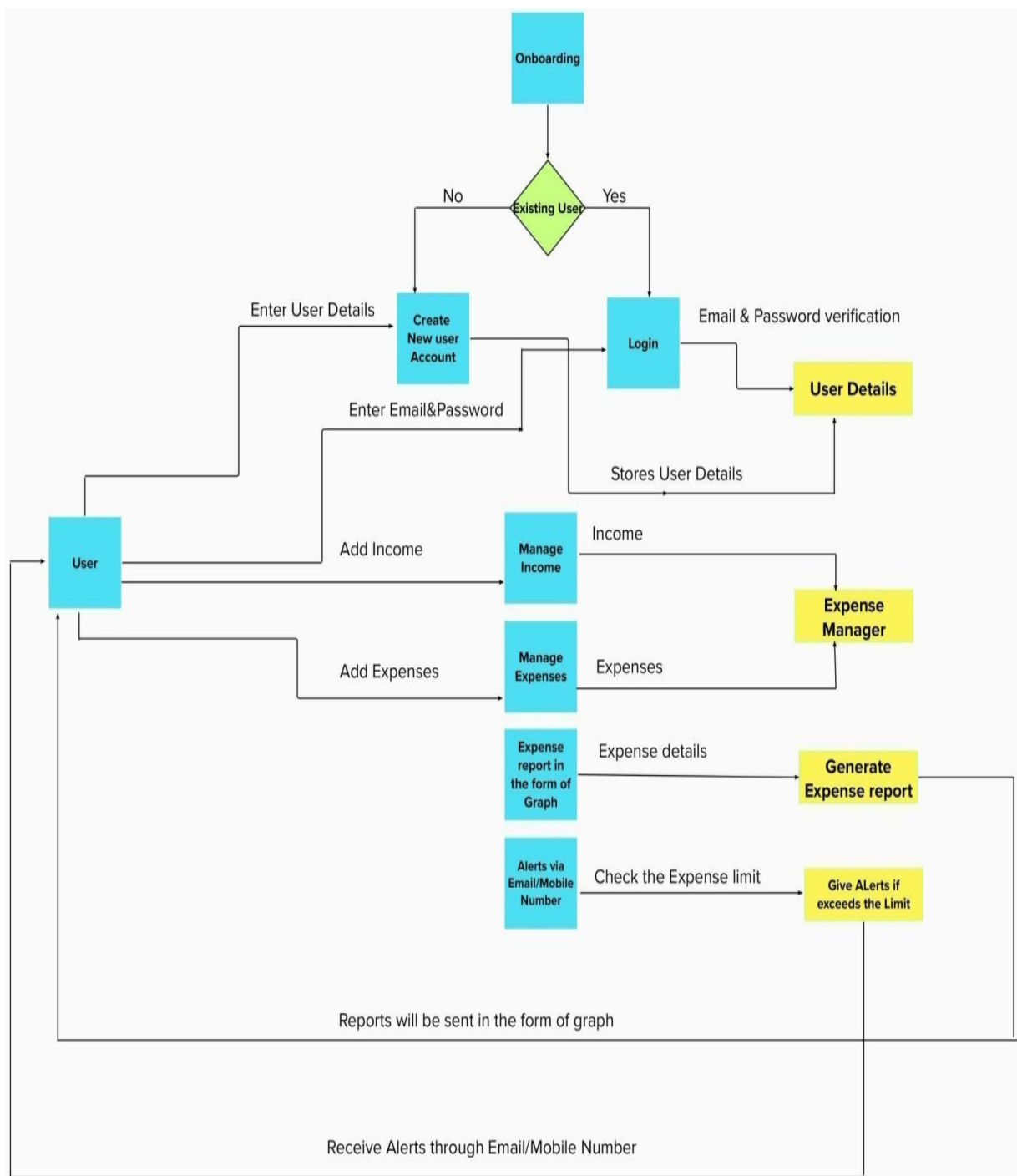
NFR-3(Reliability): Email support for technical assistance.

NFR-4(Performance): Performance of the overall application is constant for all devices including low-end specific devices.

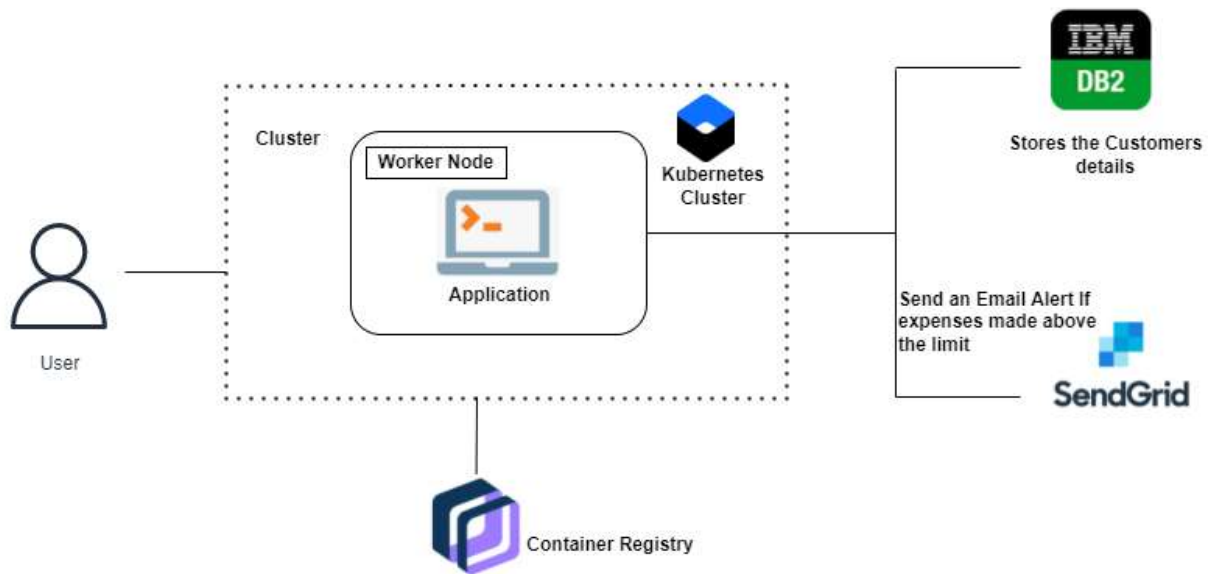
NFR-5(Availability): Available 24/7 for the user.

NFR-6(Scalability): Load balance the application in the cloud, so performance doesn't affect even in the peak hours.

DATA FLOW DIAGRAMS



TECHNOLOGY ARCHITECTURE



IX.PROJECT PLANNING PHASE

PREPARE MILESTONE & ACTIVITY LIST

TITLE	DESCRIPTION	DATE
Literature Survey & Information Gathering	Literature survey on the selected project & gathering information by referring the technical papers, research publications, etc.	21 September 2022
Prepare Empathy Map	Prepare Empathy Map in mural to capture the user pains & gains, Prepare list of problem Statements.	22 September 2022
Ideation	Organising Brainstorming session and prioritize the top 4 ideas based on the feasibility & importance.	20 September 2022

Proposed Solution	Prepare the Proposed Solution document, which includes the Problem Statement, idea, novelty, business model, social impact, scalability of solution.	26 September 2022
Problem Solution Fit	Prepare Problem–Solution Fit document.	26 September 2022
Solution Architecture	Prepare Solution Architecture document.	27 September 2022
Customer Journey	Prepare the Customer Journey Maps to understand the user interactions & experiences with the application (entry to exit).	3 October 2022
Functional Requirement	Prepare the functional requirement document.	5 October 2022
Data Flow Diagrams	Draw the Data Flow Diagrams and submit for review.	4 October 2022
Technology Architecture	Prepare the technology architecture diagram.	7 October 2022
Prepare Milestones & Activity list	Prepare the milestones & activity list of the project.	1 November 2022
Project Development-Delivery of Sprint-1,2,3,4	Develop & submit the developed code by testing it.	WORK IN PROGRESS

SPRINT DELIVERY PLAN

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-2		USN-3	As a user, I can register for the application through the help send grid, database	2	Low	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-3	Dashboard	USN-6	As a user I can see the expenditure details on the application, using IBM Cloud, Kubernetes.	3	High	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-3	Limits	USN-6	As a user I can set my monthly expense limit so that I receive a mail on exceeding that	4	High	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U
Sprint-4	Reports	USN-6	As a user I can view the graphical form of my expenses category wise	5	Medium	SAKTHI SRI M K DHARSHINI N MADHUMITHA N SUGUNA S VISHNU PRIYA U

X.CONCLUSION

Monitoring your everyday expenses can set aside you cash, yet it can likewise help you set your monetary objectives for what's to come. On the off chance that you know precisely where your sum is going much of a stretch see where a few reductions and bargains can be made. Personal Expense Tracker Project is for keeping our day-to-day expenditures will help us to keep record of our money daily. The project what we have created is work more proficient than the other income and expense tracker. This application effectively keeps away from the manual figuring for trying not to ascertain the pay and cost each month. It's a user-friendly application.

XI.REFERENCES

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