AURAL SUPPORT FOR VISUALLY IMPAIRED

An end-to-end cloud implementation

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01. AURAL SUPPORT

To assist individuals by audio who are blind to read & on improving the competence of blind people by providing them with a reliable solution through cloud

02.
Why ?

86% of every 300

Visually impaired face accident every year

285 000 000

million people are visually impaired worldwide

100 % ACCURACY

Almost 100% accurate document reader

“ Using the technologies available in the right way is the solution of all available problems. ”

Cloud - Next-gen solutions provider

Project Idea

01

Image

Capture image through the camera module

02

Cloud

Send the image to cloud and pass to detection

03

Detect

From the image obtained extract text

04

Raspberry pi

Retrieves text and converts to speech

RASPBERRY PI

IR - Sensor

Notifies the user when there is an obstacle

Camera module

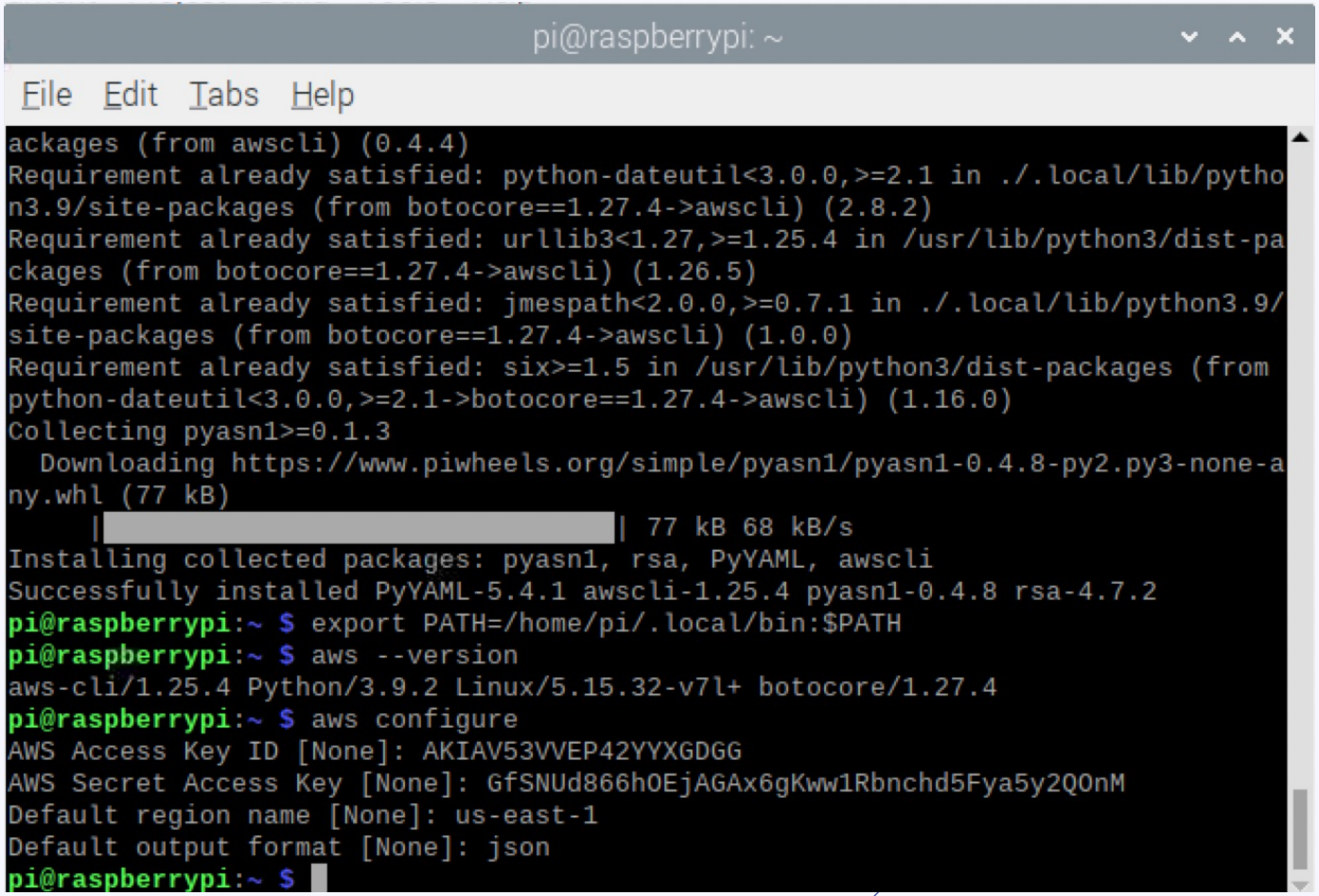
Captures the document and sends to cloud

Bucket access

Send & receive data to / from cloud using boto3

Text to speech

Convert the text to speech using gTTs


pi@raspberrypi: ~
File Edit Tabs Help
ackages (from awscli) (0.4.4)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in ./.local/lib/python3.9/site-packages (from botocore==1.27.4->awscli) (2.8.2)
Requirement already satisfied: urllib3<1.27,>=1.25.4 in /usr/lib/python3/dist-packages (from botocore==1.27.4->awscli) (1.26.5)
Requirement already satisfied: jmespath<2.0.0,>=0.7.1 in ./.local/lib/python3.9/site-packages (from botocore==1.27.4->awscli) (1.0.0)
Requirement already satisfied: six>=1.5 in /usr/lib/python3/dist-packages (from python-dateutil<3.0.0,>=2.1->botocore==1.27.4->awscli) (1.16.0)
Collecting pyasn1>=0.1.3
Downloading https://www.piwheels.org/simple/pyasn1/pyasn1-0.4.8-py2.py3-none-any.whl (77 kB)
| 77 kB 68 kB/s
Installing collected packages: pyasn1, rsa, PyYAML, awscli
Successfully installed PyYAML-5.4.1 awscli-1.25.4 pyasn1-0.4.8 rsa-4.7.2
pi@raspberrypi:~ $ export PATH=/home/pi/.local/bin:$PATH
pi@raspberrypi:~ $ aws --version
aws-cli/1.25.4 Python/3.9.2 Linux/5.15.32-v7l+ botocore/1.27.4
pi@raspberrypi:~ $ aws configure
AWS Access Key ID [None]: AKIAV53VVEP42YYXGDGG
AWS Secret Access Key [None]: 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
Default region name [None]: us-east-1
Default output format [None]: json
pi@raspberrypi:~ $

CLOUD SERVICE - AWS

IAM

Creation of policies
for administrator
S3 bucket access

S3

Policies for API
requests ,
Public access

LAMBDA

Event triggering
Code
Deploy

CLOUDWATCH

Monitor and
Logging of data

TEXTRACT

Convert image - text
And retrieve output

JSON OUTPUT

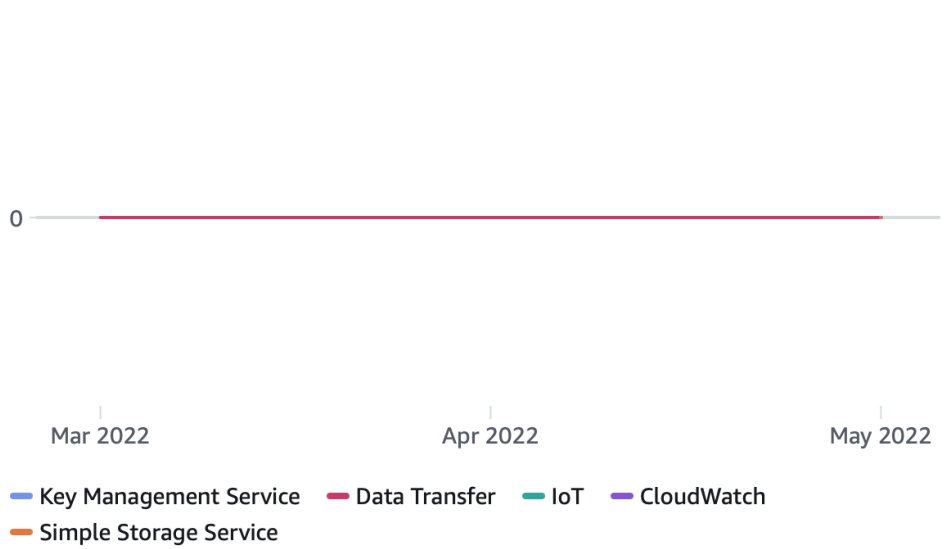
Extract the output
and put the data in
S3 bucket

Cost trend by top five services Info

Viewing data over a period of 3 months.

Line | Last 3 months by service

Total cost in USD



Cost by service

May 2022 total spent compared to previous 3 month average.

Service	Average	May t...
Key Management Service	USD 0.00	USD 0.00
Data Transfer	USD 0.00	USD 0.00
IoT	USD 0.00	USD 0.00
CloudWatch	USD 0.00	USD 0.00
Simple Storage Service	USD 0.00	USD 0.00

View your bill

Other use cases & Future

Any document

OMR sheet / any image
Object detection & identification

Other services

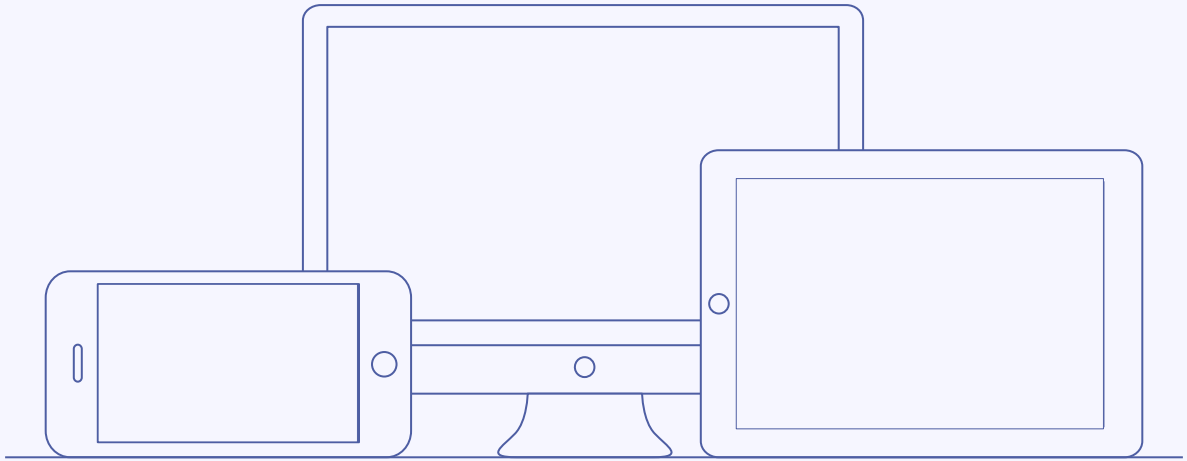
AWS Rekognition
SNS
AWS - IoT

Tight Integration

Adding more features and integrating with cloud

Benefits of cloud

Since AWS cloud is one of the most reliable cloud service and is available 24*7 , the data logged can be accessed anywhere



THANKS !

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