FAKULTI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

BITI 3533: ARTIFICIAL INTELLIGENCE

PROJECT MANAGEMENT

PROJECT GROUP H

TITLE:
FIRE DETECTION SYSTEM PROJECT MANAGEMENT

NAME	MATIC NUMBER
KAW ZI JIAN	B032010029
MD FAWZUL KABIR BADHAN	B031910459
YUSUF ATHALLAH ADRIANSYAH	B032010459

Context

1.0 Defining Project pg 1

1.1 Project Summary pg 1

2.0 Planning the Project pg 2

2.1 Project Management Life Cycle pg 2

2.1.1 Work Breakdown Structure pg 2

2.1.2 Gantt Chart pg 2

2.2 Risk Identification Chart pg 3

2.3 Responsibility Assignment Matrices (RAM) pg 3

2.3.1 Responsibility Assignment Matrices (RAM) Table pg 3

2.3.2 Roles and Responsibility pg 4

2.4 Project Planning Summary pg 5

2.4.1 Modules/Components pg 5

2.4.2 Budget pg 5

3.0 Implementing the Project Plan pg 6

3.1 Task and Estimated Cost pg 6

3.1.1 Acquisition pg 6

3.1.2 Design Projects pg 6

3.1.3 Restoration pg 7

3.1.4 Cumulative Totals pg 7

3.2 Milestone Chart pg 8

4.0 Executing the Project pg 9

4.1 Design/Diagrams pg 9

4.1.1 Flowchart pg 9

4.1.2 Fire Detection Algorithm pg 9

4.2 Coding pg 10

4.2.1 Customized CNN Architecture pg 10

4.2.2 Inception V3 Model pg 10

4.2.3 Real Time Testing pg 11

4.3 Output pg 11

4.3.1 Motion Detection pg 11

4.3.2 Detecting Fire Pixels pg 12

4.3.3 Motion and Colour pg 12

5.0 Completing the Project pg 13
5.1 Acceptance / Project Completion Form pg 13
5.2 Lesson Learnt Document pg 14

1.0 Defining Project

1.1 Project Summary

a) Customer

Tech-Solution

b) Project Name

Fire Detection System

c) Team Members

- Kaw Zi Jian
- Md Fawzul Kabir Badhan
- Yusuf Athallah Adriyansyah

d) Objective

i. To detect fire by using the computer vision technology that will alert people by early detection of fire,

ii. To protect human lives, material assets and the environment from the danger and the effect of fire,

iii. To detect fire with a different approach rather than using an existing system.

2.0 Planning the Project

2.1 Project Management Life Cycle

2.1.1 Work Breakdown structure

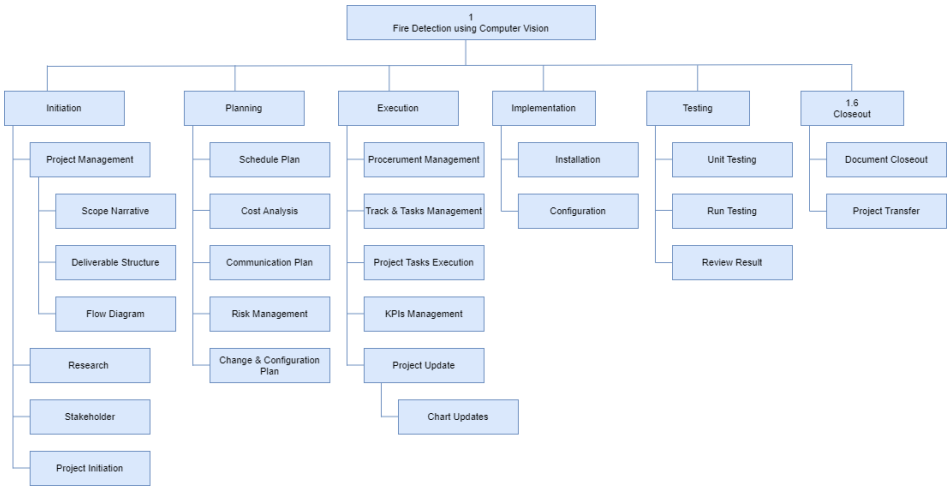


Figure 2.1.1 WBS

2.1.2 Gantt Chart

Activities	Start	End	Duration(Day/Days)
Start	11/11/2021	11/11/2021	1
PROJECT INITIATION	**11/11/2021**	**29/03/2022**	**138**
Project Management	11/11/2021	24/11/2021	13
Scope Narrative	25/11/2021	28/11/2021	3
Deliverable Structure	30/11/2021	04/12/2021	4
Flow Diagram	07/12/2021	11/12/2021	4
Research	14/12/2021	12/02/2022	60
Stakeholder	15/02/2022	04/03/2022	17
Project Initiation	05/03/2022	29/03/2022	24
PROJECT PLANNING	**30/03/2022**	**20/05/2022**	**51**
Schedule Plan	30/03/2022	02/04/2022	3
Cost Analysis	05/04/2022	13/04/2022	8
Communication Plan	14/04/2022	26/04/2022	12
Risk Management	27/04/2022	07/05/2022	10
Change and Configuration Plan	10/05/2022	20/05/2022	10
PROJECT EXECUTION	**21/05/2022**	**12/08/2022**	**83**
Procurement Management	21/05/2022	25/05/2022	4
Track and Task Management	26/05/2022	28/05/2022	2
Project Task Execution	31/05/2022	04/06/2022	4
KPIs Management	07/06/2022	30/06/2022	23
Project Updates	01/07/2022	02/07/2022	1
Chart Updates	05/07/2022	12/08/2022	38
PROJECT IMPLEMENTATION	**13/08/2022**	**02/12/2022**	**111**
Installation	13/08/2022	11/11/2022	90
Configuration	12/11/2022	02/12/2022	20
PROJECT TESTING	**03/12/2022**	**11/12/2022**	**8**
Unit Testing	03/12/2022	16/12/2022	13
Run Testing	17/12/2022	23/12/2022	6
Review Testing	24/12/2022	31/12/2022	7
PROJECT CLOSEOUT	**03/01/2023**	**10/01/2023**	**7**
Document Closeout	03/01/2023	06/01/2023	3
Project Trasfer	07/01/2023	10/01/2023	3
Finish	11/01/2023	11/01/2023	1

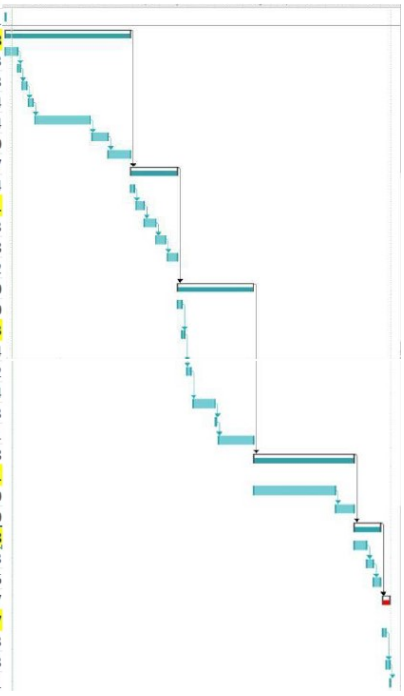


Figure 2.1.2 Gantt Chart

2.2 Risk Identification Chart

Measure of Success	Expectations	Guidelines
Time	Has been scheduled realistically and need to be delivered on time.	Stakeholders need to be alert if there are any changes of timeline.
Cost	Using lower cost materials while still making sure the quality is good.	Cost needs to be limited but if additional financial is needed, project manager has to tell the sponsor.
Quality	Need to be top notch to satisfy the customer.	Quality standards have to be followed.

2.3 Responsibility Assignment Matrices (RAM)

2.3.1 Responsibility Assignment Matrices (RAM) table

Resource Responsibility P - Primary Responsibility A - Approval Authority S - Supporting Responsibility (Contributor or Reviewer) I - Information Only *(Select from drop down list)*	Project Manager	System Designer	Programmer
Primary Planning			
Develop WBS	P	I	I
Perform Schedule Planning	P	S	S
Plan Risk Management	A	S	P
Plan Change and Configuration	A	S	P
Execution and Control			
Manage Communications	P	S	S
Manage Procurement	A	P	S
Manage Changes	A	S	P
Track and Manage Tasks	P	S	S
Execute Project Tasks	A	P	P
Prepare Test Sites			
Installation	S	S	P
Configuration	S	I	P
Conduct Testing			
Preparation	S	S	P
Run Testing	A	S	P
Review Test Result	A	S	P
Closeout			
Document Closeout	A	P	S
Transfer Project	P	S	S

Figure 2.3.1 RAM Table

2.3.2 Roles and Responsibility

a) Project Manager

A project manager is someone who has the overall responsibility for initiating, planning, designing, carrying out, monitoring, controlling, and successfully closing a project.

The project manager will organise the project calendar for the stakeholders, make sure that each step is carried out, conduct budget planning and process control, and troubleshoot any issues that arise. The project manager needs to possess more general managerial abilities as well as the capacity to ask widespread questions, recognise unintentional assumptions, and settle conflicts.

b) System Designer

The system designer's job is to create a detailed blueprint and instructions that the programmers can follow. The specification of specifications that the system or business analyst has developed is the primary input document used by the system designer.

To guarantee that the system is thoroughly tested, the system designer must also create test schedules and collaborate with a group of users and system testers.

c) Programmer

A coevolutionary neural network has been used to construct an algorithm and a system, and the duty of the programmer is to define, develop, instal, and test a software framework that uses it. The software can be updated and maintained to make sure that security flaws are fixed and that it works with new databases once the final development environment has been given to the programmer.

On a computer or smartphone, programmers will create features that let users carry out basic operations, while other programmers will create the underpinning systems that manage networks.

2.4 Project Planning Summary

2.4.1 Modules/Components

Item/Service	Justification
CCTV	Needed for installation 1; we do not make this item
Configuration service	Find service company to configure the CCTV at the housing area
Installation service	Needed for transferring data to CCTV; we do not have the skill for installation.
Internet service	To do research
Google Clouds	For storage, big data, can be used for cloud AI.

Table 2.4.1 Module and Components of Project

2.4.2 Budget

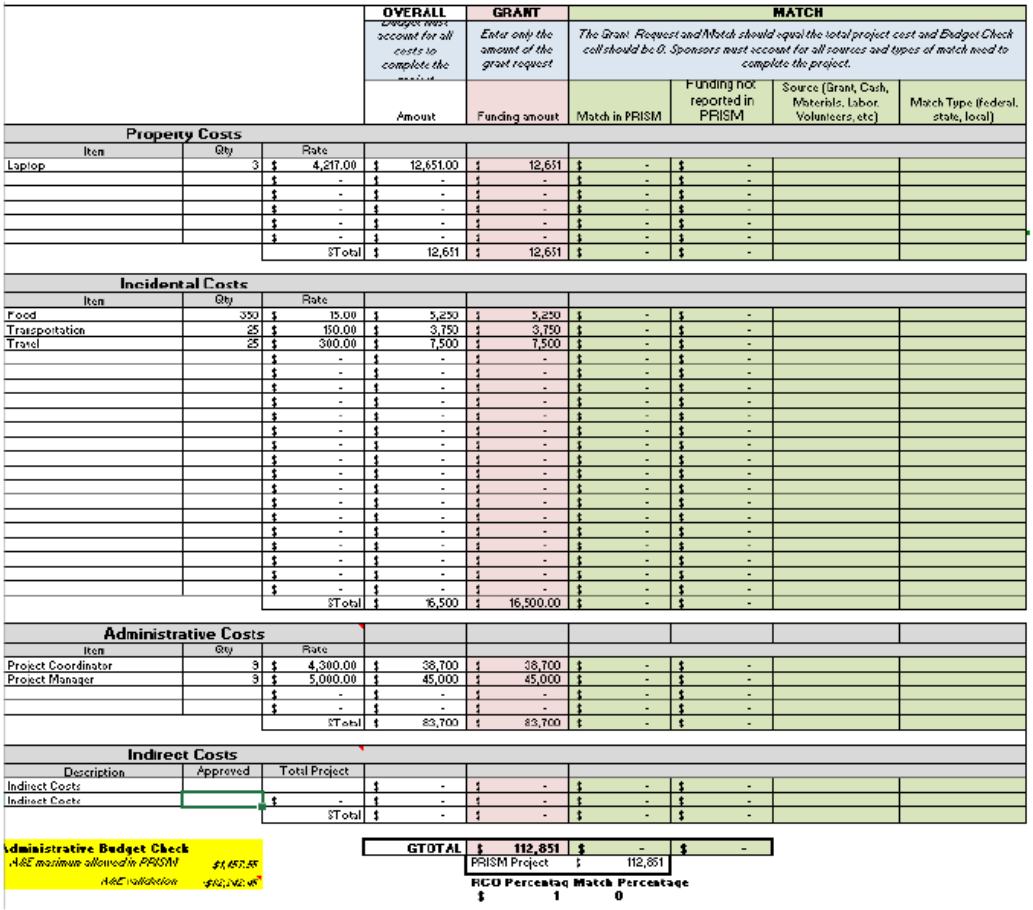
				FUSION TECH SDN BHD				
				CALCULATE NET PRESENT VALUE (NPV) FOR INVESTMENT				
		2020	2021	2022	2023	2024	2025	2026
		Actuals	Plan	Plan	Plan	Plan	Plan	Plan
		Investment						
Cash Flows	Total	($3,000,000)	$250,000	$395,000	$405,750	$450,500	$500,200	$6,635,605
Discounted Rate (Risk)	10%							
NPV (Manual)	$ 2,786,167.77		$ 80,646.16	$ 127,421.35	$ 130,890.10	$ 145,326.58	$ 161,359.84	$ 2,140,523.74
NPV (Formula)	$5,222,473.43							
The higher the VPN, the better	$ 2,222,473.43							
Means the return from a project	79.77%				ACCEPTED			
exceeds the cost of capital								

Figure 2.4.2 Budget of Project

3.0 Implementing the Project Plan

3.1 Task and Estimated Cost

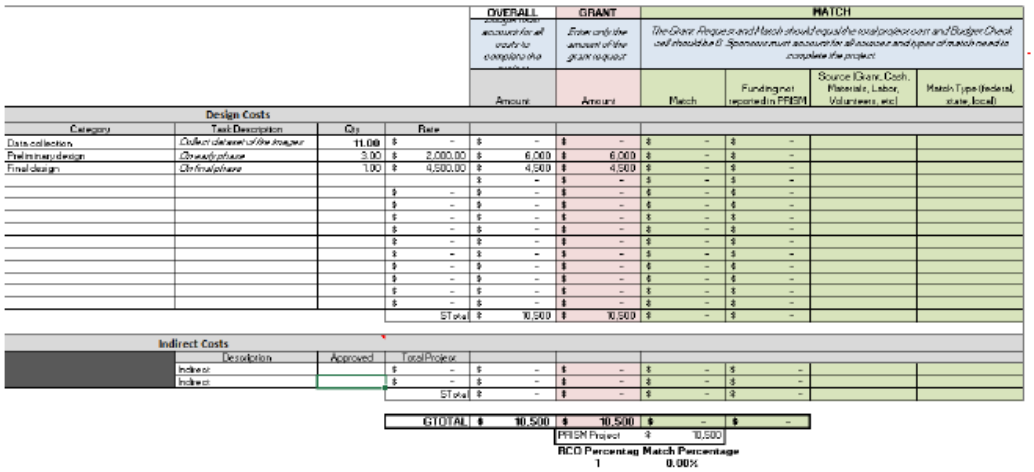
3.1.1 Acquisition



			OVERALL	GRANT	MATCH			
			Budget must account for all costs to complete the project	Enter only the amount of the grant request	The Grant Request and Match should equal the total project cost and Budget Check cell should be 0. Sponsors must account for all sources and types of match need to complete the project.			
			Amount	Funding amount	Match in PRISM	Funding not reported in PRISM	Source (Grant, Cash, Materials, Labor, Volunteers, etc)	Match Type (federal, state, local)
Property Costs								
Item	Qty	Rate						
Laptop	3	$ 4,217.00	$ 12,651.00	$ 12,651	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$Total	$ 12,651	$ 12,651	$ -	$ -		
Incidental Costs								
Item	Qty	Rate						
Food	350	$ 15.00	$ 5,250	$ 5,250	$ -	$ -		
Transportation	25	$ 150.00	$ 3,750	$ 3,750	$ -	$ -		
Travel	25	$ 300.00	$ 7,500	$ 7,500	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$Total	$ 16,500	$ 16,500.00	$ -	$ -		
Administrative Costs								
Item	Qty	Rate						
Project Coordinator	3	$ 4,300.00	$ 38,700	$ 38,700	$ -	$ -		
Project Manager	3	$ 5,000.00	$ 45,000	$ 45,000	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$ -	$ -	$ -	$ -	$ -		
		$Total	$ 83,700	$ 83,700	$ -	$ -		
Indirect Costs								
Description	Approved	Total Project						
Indirect Costs			$ -	$ -	$ -	$ -		
Indirect Costs		$ -	$ -	$ -	$ -	$ -		
		$Total	$ -	$ -	$ -	$ -		
Administrative Budget Check				GTOTAL	$ 112,851	$ -	$ -	
A&E maximum allowed in PRISM	$14,857.65			PRISM Project	$ 112,851			
A&E validation	#REF!			RCO Percentag	Match Percentage			
				$ 1	0			

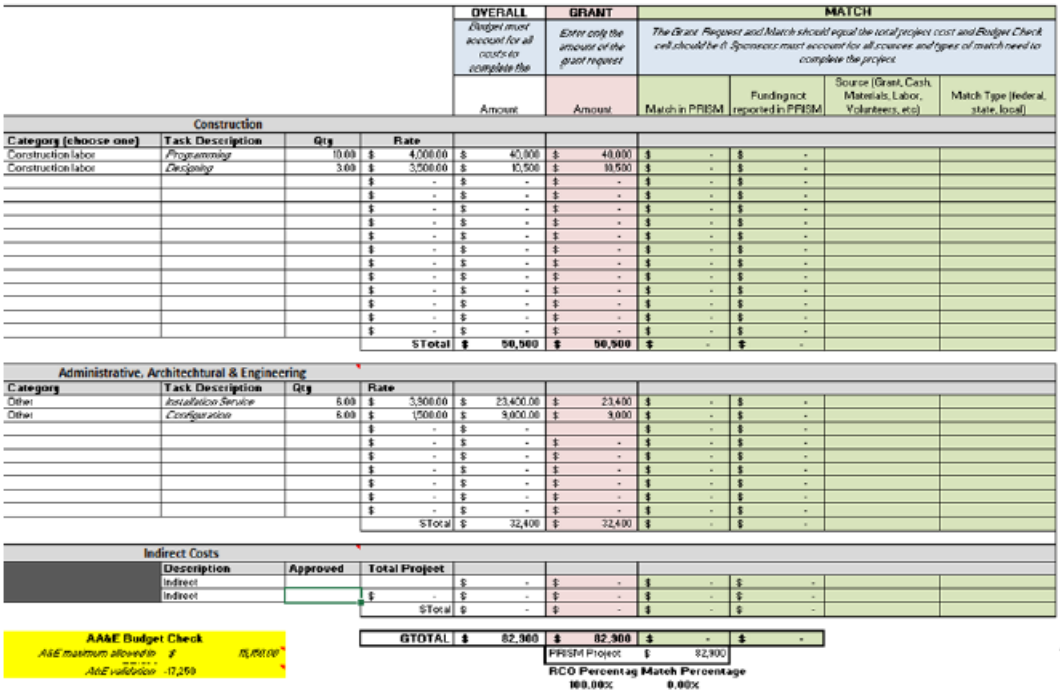
Figure 3.1.1 Budget for acquisition

3.1.2 Design Projects



			OVERALL	GRANT	MATCH			
			Budget must account for all costs to complete the project.	Enter only the amount of the grant request	The Grant Request and Match should equal the total project cost and Budget Check cell should be 0. Sponsors must account for all sources and types of match need to complete the project.			
			Amount	Amount	Match	Funding not reported in PRISM	Source (Grant, Cash, Materials, Labor, Volunteers, etc)	Match Type (federal, state, local)
Design Costs								
Category	Task Description	Qty	Rate					
Data collection	Collect dataset of the project	11.00	$ -	$ -	$ -	$ -	$ -	
Preliminary design	Design phase	3.00	$ 2,000.00	$ 6,000	$ 6,000	$ -	$ -	
Final design	Final phase	1.00	$ 4,500.00	$ 4,500	$ 4,500	$ -	$ -	
				$ -	$ -	$ -	$ -	
			$ -	$ -	$ -	$ -	$ -	
			$ -	$ -	$ -	$ -	$ -	
			$ -

3.1.3 Restoration



				OVERALL	GRANT	MATCH			
				Budget must account for all costs to complete the	*Enter only the amount of the grant request*	*The Grant Request and Match should equal the total project cost and Budget Check cell should be 0. Sponsors must account for all sources and types of match need to complete the project.*			
				Amount	Amount	Match in PRISM	Funding not reported in PRISM	Source (Grant, Cash, Materials, Labor, Volunteers, etc)	Match Type (federal, state, local)
Construction									
Category (choose one)	**Task Description**	**Qty**	**Rate**						
Construction labor	*Programming*	10.00	$ 4,000.00	$ 40,000	$ 40,000	$ -	$ -		
Construction labor	*Designing*	3.00	$ 3,500.00	$ 10,500	$ 10,500	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			STotal	$ 50,500	$ 50,500	$ -	$ -		
Administrative, Architechtural & Engineering									
Category	**Task Description**	**Qty**	**Rate**						
Other	*Installation Service*	6.00	$ 3,900.00	$ 23,400.00	$ 23,400	$ -	$ -		
Other	*Configuration*	6.00	$ 1,500.00	$ 9,000.00	$ 9,000	$ -	$ -		
			$ -	$ -		$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			STotal	$ 32,400	$ 32,400	$ -	$ -		
Indirect Costs									
	Description	**Approved**	**Total Project**						
	Indirect			$ -	$ -	$ -	$ -		
	Indirect		$ -	$ -	$ -	$ -	$ -		
			STotal	$ -	$ -	$ -	$ -		
			GTOTAL	**$ 82,900**	**$ 82,900**	**$ -**	**$ -**		
					PRISM Project	$ 82,900			
					RCO Percentag	**Match Percentage**			
					100.00%	**0.00%**			

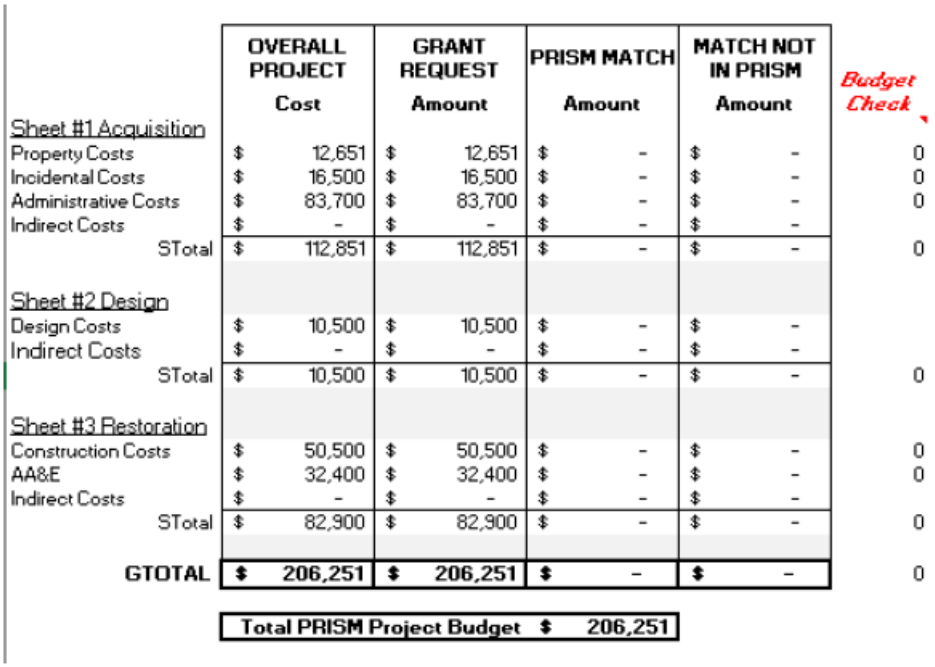
AA&E Budget Check

A&E maximum allowed in $ 15,150.00

A&E validation -17,250

Figure 3.1.3 Budget for Restoration

3.1.4 Cumulative Totals



	OVERALL PROJECT Cost	GRANT REQUEST Amount	PRISM MATCH Amount	MATCH NOT IN PRISM Amount	*Budget Check*
Sheet #1 Acquisition					
Property Costs	$ 12,651	$ 12,651	$ -	$ -	0
Incidental Costs	$ 16,500	$ 16,500	$ -	$ -	0
Administrative Costs	$ 83,700	$ 83,700	$ -	$ -	0
Indirect Costs	$ -	$ -	$ -	$ -	
STotal	$ 112,851	$ 112,851	$ -	$ -	0
Sheet #2 Design					
Design Costs	$ 10,500	$ 10,500	$ -	$ -	
Indirect Costs	$ -	$ -	$ -	$ -	
STotal	$ 10,500	$ 10,500	$ -	$ -	0
Sheet #3 Restoration					
Construction Costs	$ 50,500	$ 50,500	$ -	$ -	0
AA&E	$ 32,400	$ 32,400	$ -	$ -	0
Indirect Costs	$ -	$ -	$ -	$ -	
STotal	$ 82,900	$ 82,900	$ -	$ -	0
GTOTAL	**$ 206,251**	**$ 206,251**	**$ -**	**$ -**	0

Total PRISM Project Budget $ 206,251

Figure 3.1.4 Cumulative Total of Budget

3.2 Milestone Chart

Activities	Start	End	Duration(Day/Days)
Start	11/11/2021	11/11/2021	1
PROJECT INITIATION	**11/11/2021**	**29/03/2022**	**138**
Project Management	11/11/2021	24/11/2021	13
Scope Narrative	25/11/2021	28/11/2021	3
Deliverable Structure	30/11/2021	04/12/2021	4
Flow Diagram	07/12/2021	11/12/2021	4
Research	14/12/2021	12/02/2022	60
Stakeholder	15/02/2022	04/03/2022	17
Project Initiation	05/03/2022	29/03/2022	24
PROJECT PLANNING	**30/03/2022**	**20/05/2022**	**51**
Schedule Plan	30/03/2022	02/04/2022	3
Cost Analysis	05/04/2022	13/04/2022	8
Communication Plan	14/04/2022	26/04/2022	12
Risk Management	27/04/2022	07/05/2022	10
Change and Configuration Plan	10/05/2022	20/05/2022	10
PROJECT EXECUTION	**21/05/2022**	**12/08/2022**	**83**
Procurement Management	21/05/2022	25/05/2022	4
Track and Task Management	26/05/2022	28/05/2022	2
Project Task Execution	31/05/2022	04/06/2022	4
KPIs Management	07/06/2022	30/06/2022	23
Project Updates	01/07/2022	02/07/2022	1
Chart Updates	05/07/2022	12/08/2022	38
PROJECT IMPLEMENTATION	**13/08/2022**	**02/12/2022**	**111**
Installation	13/08/2022	11/11/2022	90
Configuration	12/11/2022	02/12/2022	20
PROJECT TESTING	**03/12/2022**	**11/12/2022**	**8**
Unit Testing	03/12/2022	16/12/2022	13
Run Testing	17/12/2022	23/12/2022	6
Review Testing	24/12/2022	31/12/2022	7
PROJECT CLOSEOUT	**03/01/2023**	**10/01/2023**	**7**
Document Closeout	03/01/2023	06/01/2023	3
Project Trasfer	07/01/2023	10/01/2023	3
Finish	11/01/2023	11/01/2023	1

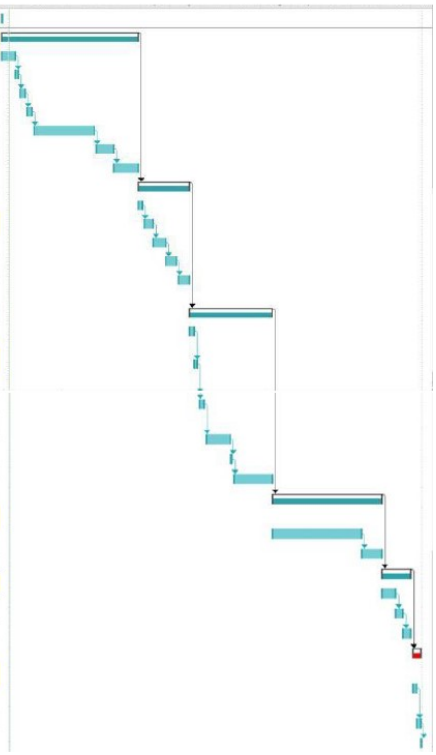


Figure 3.2 Milestone Chart

4.0 Executing the Project

4.1 Design/Diagrams

4.1.1 Flowchart

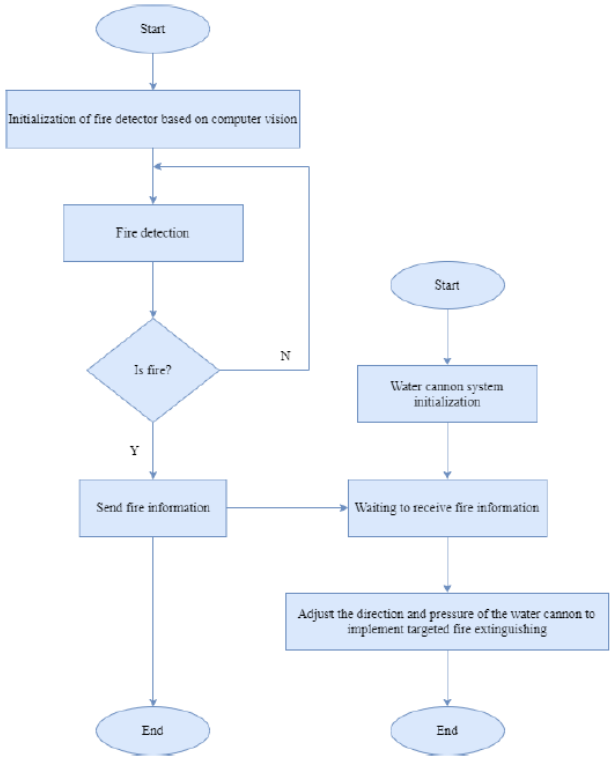


Figure 4.1.1 Automatic Fire Detection System

4.1.2 Fire Detection Algorithm

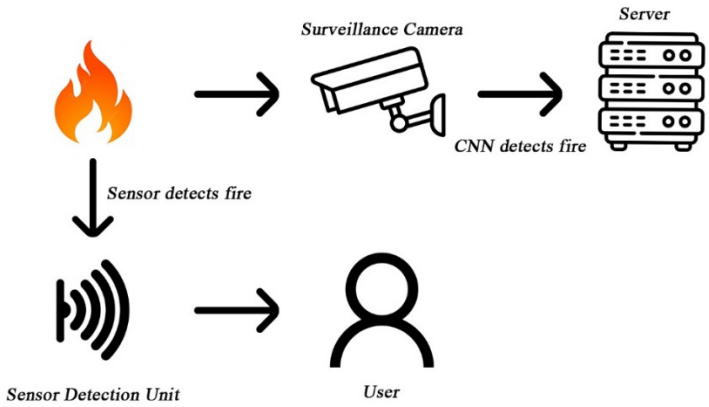


Figure 4.2.2 Fire detection algorithm outline

4.2 Coding

4.2.1 Customized CNN Architecture

```
import tensorflow as tf
import keras_preprocessing
from keras_preprocessing import image
from keras_preprocessing.image import ImageDataGenerator
TRAINING_DIR = "Train"
training_datagen = ImageDataGenerator(rescale = 1./255,
                                      horizontal_flip=True,
                                      rotation_range=30,
                                      height_shift_range=0.2,
                                      fill_mode='nearest')
VALIDATION_DIR = "Validation"
validation_datagen = ImageDataGenerator(rescale = 1./255)
train_generator = training_datagen.flow_from_directory(TRAINING_DIR,
                                    target_size=(224,224),
                                    class_mode='categorical',
                                    batch_size = 64)
validation_generator = validation_datagen.flow_from_directory(
                                      VALIDATION_DIR,
                                      target_size=(224,224),
                                      class_mode='categorical',
                                      batch_size= 16)

from tensorflow.keras.optimizers import Adam
model = tf.keras.models.Sequential([
tf.keras.layers.Conv2D(96, (11,11), strides=(4,4), activation='relu', input_shape=(224, 224, 3)), tf.keras.layers.MaxPooling2D(pool_size = (3,3), strides=(2,2)),
tf.keras.layers.Conv2D(256, (5,5), activation='relu'),
tf.keras.layers.MaxPooling2D(pool_size = (3,3), strides=(2,2)),
tf.keras.layers.Conv2D(384, (5,5), activation='relu'),
tf.keras.layers.MaxPooling2D(pool_size = (3,3), strides=(2,2)),
tf.keras.layers.Flatten(),
tf.keras.layers.Dropout(0.2),
tf.keras.layers.Dense(2048, activation='relu'),
tf.keras.layers.Dropout(0.25),
tf.keras.layers.Dense(1024, activation='relu'),
tf.keras.layers.Dropout(0.2),
tf.keras.layers.Dense(2, activation='softmax')])
model.compile(loss='categorical_crossentropy',
optimizer=Adam(lr=0.0001),
metrics=['acc'])
history = model.fit(
train_generator,
steps_per_epoch = 15,
epochs = 50,
validation_data = validation_generator,
validation_steps = 15
)
```

4.2.2 Inception V3 Model

```
import tensorflow as tf
import keras_preprocessing
from keras_preprocessing import image
from keras_preprocessing.image import ImageDataGenerator
TRAINING_DIR = "Train"
training_datagen = ImageDataGenerator(rescale=1./255,
zoom_range=0.15,
horizontal_flip=True,
fill_mode='nearest')
VALIDATION_DIR = "/content/FIRE-SMOKE-DATASET/Test"
validation_datagen = ImageDataGenerator(rescale = 1./255)
train_generator = training_datagen.flow_from_directory(
TRAINING_DIR,
target_size=(224,224),
shuffle = True,
class_mode='categorical',
batch_size = 128)
validation_generator = validation_datagen.flow_from_directory(
VALIDATION_DIR,
target_size=(224,224),
class_mode='categorical',
shuffle = True,
batch_size= 14)

from tensorflow.keras.applications.inception_v3 import InceptionV3
from tensorflow.keras.preprocessing import image
from tensorflow.keras.models import Model
from tensorflow.keras.layers import Dense, GlobalAveragePooling2D, Input, Dropout
input_tensor = Input(shape=(224, 224, 3))
base_model = InceptionV3(input_tensor=input_tensor, weights='imagenet', include_top=False)
x = base_model.output
x = GlobalAveragePooling2D()(x)
x = Dense(2048, activation='relu')(x)
x = Dropout(0.25)(x)
x = Dense(1024, activation='relu')(x)
x = Dropout(0.2)(x)
predictions = Dense(2, activation='softmax')(x)
model = Model(inputs=base_model.input, outputs=predictions)
for layer in base_model.layers:
  layer.trainable = False
model.compile(optimizer='rmsprop', loss='categorical_crossentropy', metrics=['acc'])
history = model.fit(
train_generator,
steps_per_epoch = 14,
epochs = 20,
validation_data = validation_generator,
validation_steps = 14)

#To train the top 2 inception blocks, freeze the first 249 layers and unfreeze the rest.
for layer in model.layers[:249]:
  layer.trainable = False
for layer in model.layers[249:]:
  layer.trainable = True
#Recompile the model for these modifications to take effect
from tensorflow.keras.optimizers import SGD
model.compile(optimizer=SGD(lr=0.0001, momentum=0.9), loss='categorical_crossentropy', metrics=['acc'])
history = model.fit(
train_generator,
steps_per_epoch = 14,
epochs = 10,
validation_data = validation_generator,
validation_steps = 14)
```

4.2.3 Real Time Testing

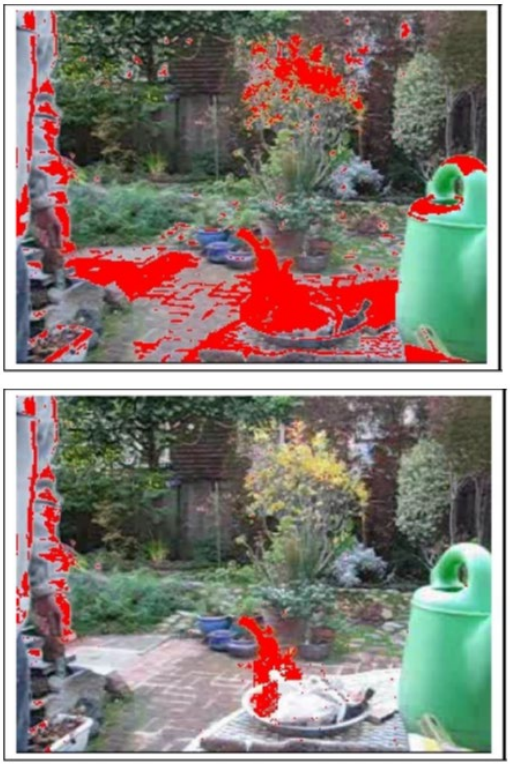
```
import cv2
import numpy as np
from PIL import Image
import tensorflow as tf
from keras.preprocessing import image
#Load the saved model
model = tf.keras.models.load_model('InceptionV3.h5')
video = cv2.VideoCapture(0)
while True:
        _, frame = video.read()
#Convert the captured frame into RGB
        im = Image.fromarray(frame, 'RGB')
#Resizing into 224x224 because we trained the model with this image size.
        im = im.resize((224,224))
        img_array = image.img_to_array(im)
        img_array = np.expand_dims(img_array, axis=0) / 255
        probabilities = model.predict(img_array)[0]
        #Calling the predict method on model to predict 'fire' on the image
        prediction = np.argmax(probabilities)
        #if prediction is 0, which means there is fire in the frame.
        if prediction == 0:
                frame = cv2.cvtColor(frame, cv2.COLOR_RGB2GRAY)
                print(probabilities[prediction])
cv2.imshow("Capturing", frame)
        key=cv2.waitKey(1)
        if key == ord('q'):
                break
video.release()
cv2.destroyAllWindows()
```

4.3 Output

4.3.1 Motion Detection

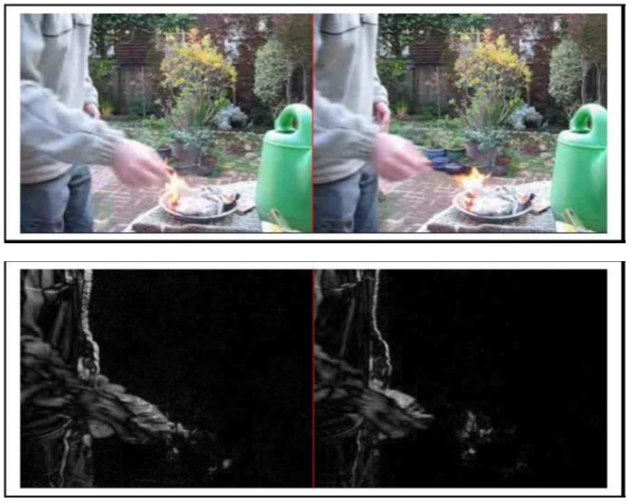
Coloured Pixel Detection

4.3.2 Detecting Fire Pixels



Motion and Colour Detection

4.3.3 Motion and Colour



Motion Detection

5.0 Completing the Project

5.1 Acceptance / Project Completion Form

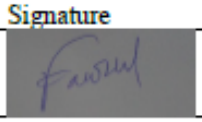
Customer Acceptance/Project Completion Form

10 January 2023

Project Name : Fire Detection System

Project Manager : Kaw Zi Jian

I (We), the undersigned, acknowledge and accept the delivery of the work completed for this project on behalf of our organisation. My (Our) signature(s) attest to my (our) agreement that this project has been completed. No further work should be done on this project.

Name	Title	Signature	Date
Md Fawzul Kabir Badhan	System Designer		10 January 2023
Yusuf Athallah Adriyansyah	Programmer		10 January 2023

1. Was this project completed to your satisfaction? Yes / ~~No~~

2. Please provide the main reason of satisfaction or dissatisfaction with this project.

   The key reward for finishing this project is the extraordinary strength of the quality management plan deliverable. Additionally, the project plan was amended in light of the team leader's criticism, and a training programme was developed to make this project more engaging.

3. Please provide suggestions on how our organisation could improve its project delivery capability in the future.

   To increase the project delivery capability in the future, my recommendations are to communicate more effectively, work more efficiently, and achieve quick results. Additionally, with the goal of having better integration and strategic alignment, the focus is on how the initiatives are integrated throughout the organisation.

Thank you for your input.

5.2 Lesson Learnt Document

Lesson Learnt Report

10 January 2023

Project Name : Fire Detection System

Project Sponsor : Professor Burhanuddin bin Mohd Aboobaider

Project Manager : Kaw Zi Jian

Final Budget : RM 206,251

1. Did the project meet scope, time and cost goals?

   We did succeed in meeting the scope and time objectives, but we had to ask for an extra RM 15,000, which the sponsor graciously granted. By having more people than anticipated enrol in training courses, especially the online ones, we exceeded scope goals.

2. What was the success criteria listed in the project in the scope statement?

   The project's scope and success criteria were outlined in the following statement: "According to our sponsor, the project will be considered a success if all of the new training courses are made available within a year, the average course evaluation score is at least 3.0 on a scale of 1 to 5, and the company recovers the project's costs through lower training costs within two years of the project's conclusion."

3. Reflect on whether you meet the project success criteria.

   Within a year, all of the new training courses were made available, and they received an average rating of 3.4 out of 5.0. If the project's costs are recovered within the anticipated two years is unknown. We are convinced that the cost will be recovered in less than two years because the Web-based training is more cost-effective than the instructor-led training.

4. What were the main lessons your team learnt from this project?

   The following were some of the key lessons discovered:
   - Effective communication was essential to the project's success. For stakeholder communications, we had a dedicated item in the WBS, which was crucial. We made a huge transition from traditional training to largely Web-based training, so effective communication was essential.