**COMPUTER PROJECT**

“KAI“

AS A PART OF12th BOARD PRACTICAL EXAMINATION CONDUCTED BY C.B.S.E.

ALL INDIA SENIOR SECONDARY CERTIFICATE EXAMINATION

Submitted by:

**<name>**

Roll no:

UNDER THE SUPERVISION OF:

Ms. Pavithra R

**NATIONAL ACADEMY FOR LEARNING**

**BENGALURU**

(Affiliated to C.B.S.E No.830060)

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LABORATORY CERTIFICATE

This is to certify that **<name>** of class **XII A** during the academic year 2022-23, has satisfactorily completed his Computer Science Project entitled “” under my guidance. he has taken proper care and shown at most sincerity in completing his project.

I certify that the project is up to my expectations and follows the guidelines as prescribed by CBSE, AISSCE.

**Teacher-in-Charge:**

**PAVITHRA R                                                                             ----------------**

**(Signature)**

**Mr. /Mrs. -----------------------                                                      ----------------**

**(External Examiner)                                                                    (Signature)**

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**(Signature)**

**Ms. HEMALATA PILLAI**

**Principal**

**National Academy For Learning - North Bengaluru**

ACKNOWLEDGEMENT

It is with pleasure that I acknowledge my sincere gratitude to our teacher, Ms. Pavithra R, who undertook the responsibility of teaching Computer Science. I have been greatly benefited from her classes.

I am especially indebted to our Principal Ms. Hemalata Pillai who has always been a source of encouragement and support, without whose inspiration this project would not have been a successful. I would like to place on record heartfelt thanks to her.

Finally, I would like to express my sincere appreciation for my teammates - <names> who worked tirelessly to bring this project to fruition.

DECLARATION CERTIFICATE

This is to certify that <<YOUR NAME HERE>> of class XII A of National Academy For Learning, North has done her project on ‘Kai’ under my supervision. She has taken interest and has shown utmost sincerity in completion of this project.

I certify this project up to my expectation & as per guidelines issued by CBSE, NEW DELHI.

Internal Examiner External Examiner

Principal

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PROJECT AIM AND OBJECTIVES

The project aims and objectives that will be achieved after completion of the game is as follows:

* To create a game that invokes nostalgia among children of our age group.
* To design a user friendly graphical user interface which suits the users.
* To complete the game according to project schedule.
* To produce technical report that documents the phases, tasks and deliverables in the project.
* Future objective is to make this game available to masses via the internet.
* To bring a smile to the users’ faces.

OVERVIEW OF PYTHON AND MYSQL

Python is a high level, interpreted, interactive, dynamic-typed and object oriented scripting language.  It is designed to be highly readable with English keywords and has lesser syntactical constructions compared to other languages.

Python was developed by Guido van Rossum in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands and was named after the famous comedy show – ‘Monty Python’.

Python is derived from many other languages, including ABC, C, C++ and other scripting languages.

As of June 2022, the Python Package Index (PyPI), the official repository for third-party Python software, contains over 380,000 packages with a wide range of functionality, from scientific computing to data analytics and image processing.

DEVELOPMENT ENVIRONMENT

**Software**:

1. Operating System: Microsoft Windows 10 and above
2. Database: We have used MySQL 8.0+ for the storage of players’ information. MySQL is a free and open source relational database management software
3. Programming language: We have used Python 3.8+, which is a free and open source language to code this project.

**Hardware**:

1. RAM: 4 GB or more
2. Screen Resolution: Monitor with screen resolution minimum 1024x768
3. Hard disk: Minimum 10 GB of space is required for database

BACKGROUND

Our game is inspired by the original ‘Paddle Game’ on BlackBerry phones in the early 2010s and fills us with nostalgia. We have put our own spin on this famously popular game, to create, Kai.

The idea for this game came up when we were discussing old games that we grew up with and one of them being the iconic ‘Paddle Game’. We wanted to recreate this game with our own spin on it, utilising newer technology and creativity to show our transformation from players of the game to creators of games.

Kai, is centered around the cute view of a seal playing with a beach ball. Our mascot seal, Cap’n Kai, is controlled by the user who has to move the seal with the arrow keys to bounce the beach ball to catch sea-gulls that will come to attack the seal’s food. If the user fails to keep the seal’s food safe, the user loses that round.

Users need to create an account to use the game and the information of the user will be securely stored on MySQL databases. These databases are solely accessible to the admin.

Our game has two modes – Classic and Arcade. The classic mode has 5 levels, with increasing difficulty, whereas the arcade mode has randomised difficulty levels.

After the player has finished playing one round of any game mode, they enter the leader board. The leader board shows the user’s ranking among other players.

The creators of the game have admin access to the game via the admin user interface.

Features-

1. Account creation and authentication – storage on SQL
2. Home Page
3. Classic mode
4. Arcade mode
5. Leader board

bUILT-IN FUNCTIONS AND MODULES

The modules used in this game are:

1. Built-in functions:
   1. Time
   2. OS
   3. Random
   4. Math
2. Modules:
   1. PyGame
   2. Python MySQL Connector
   3. PySimpleGUI

Project scope

1. Account creation and Authentication module

This module is used for creating an account by entering necessary details (name, password, username, email, etc.) which will be saved on a secure MySQL database. Upon account creation, the user can log into the system by providing username and password and the database will begin to keep track of the user’s points.

1. Home Page

Once the user’s details are authenticated when they login, or account is created when they sign up, their personalised home page opens. From their home page, the user can navigate to the levels pages, instructions page, leader board, credits page or chose to log out.

1. Classic Mode

This module is activated when the user chooses the classic mode on their homepage, upon login. The user chooses the level they want to play, ranging from levels 1 to 4 in increasing difficulty.

1. Arcade Mode

This module is activated when the user chooses the arcade mode on their homepage, upon login. In this mode, the user has to beat the clock and gain as many points as possible while the level of difficulty is randomised.

1. Leader Board

The leader board displays the usernames of the players with the highest points.