CENTRAL BOARD OF SECONDARY EDUCATION

ARAVALI INTERNATIONAL SCHOOL

Sec-43, Badhkal Suraj Kund Road,
FaridabadSession 2022-23

INFORMATICS PRACTICES

Project File

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CLASS: XII S1
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DECLARATION

I Aditya Prasad Dash bearing roll no 17623976, a student of Class XII ARAVALI INTERNATIONAL SCHOOL hereby declare that I own the full responsibility for the information, results etc. provided in this PROJECT titled “Tasks Management System”. It has been developed successfully by using the Data Handling concepts like data management. Provided in the programming language Python at The ARAVALI INTERNATIONAL School in complete fulfillment of project (curriculum of Central Board of Secondary Education CBSE of Informatics Practices (065) conducted by CBSE, New Delhi for the academic session 2022-23. I also declare that this project work has neither been submitted to any other board nor published at any time by me in the past.

NAME: Aditya Prasad Dash
Roll No: 17623976
Class: 12

CERTIFICATE

This is to certify that the Informatics Practices project on ***Inventory Management System*** *has been successfully completed by* _____ *of* ***Class XII, ARAVALI INTERNATIONAL School*** *for consideration in partial fulfillment of curriculum of Central Board of Secondary Education (CBSE) of Informatics Practices (065) for the award of AISSCE Practical Examination 2022-23.*

I certify that this project is up to my expectation and as per the guidelines issued by the CBSE.

_____ _____

(Internal Examiner) **(External Examiner)**

ACKNOWLEDGEMENT

I take this opportunity to express my deep sense of gratitude to all those who have been instrumental in preparation of this project.

I feel great pleasure to express my obligation to Ms.Reema Rai, Principal of The ARAVALI INTERNATIONAL School.

I am also sincerely grateful to Ms. Vibha Vij PGT (Informatics Practices), ARAVALI INTERNATIONAL School for his encouragement and valuable guidance during the entire period of work.

I would also thank all of my parents and friends for their whole hearted support and encouragement without with this project would not have been successful.

I could not forget Internet, Textbooks which provided me with sufficient matter for reference.

INTRODUCTION

Tasks refer to the day to day work we do. It is essential to plan them and do them on time for the highest productivity.

Task Management refers to the tracking of tasks, giving them priority and finishing them on the basis of priority, from the most prior to the least important tasks.

Task Management System, commonly known as Project Management Tools are applications that help us note what tasks we have left to complete and in planning what could be the best order to prioritize tasks such that the productivity gets to maximum.

Such systems and tools are essential in schools and offices to maximize productivity and track the completeness of a task.

PROBLEM STATEMENT

Small corporates try to make more and more profit but they do not focus much on projects they are working on as **the existing tools are**:

1. Too complex for small projects
2. Too expensive for small projects
3. Too hard to maintain

OBJECTIVE

Build an application to:

1. Display old tasks
2. Make new tasks
3. Remove tasks
4. Keep tasks saved locally
5. Prioritize task
6. Change priority of tasks manually

Application Conditions:

- Application to be able to be used by non programmers.

PROJECT SCOPE

Small corporations and people will be using this tool to manage their tasks and projects. **This would help them to**:

- Maximize productivity
- Better organizing of projects
- Track completion of tasks and projects
- Save time by good planning

SYSTEM REQUIREMENTS

Software Requirements:

- **Operating System**: *Window 7* or later
- **Language: *Python***
- **Platform**: *Python 3.7* or newer

Hardware Requirements:

- **Processor**: *Pentium Dual Core* (min) 32 bit / 64 bit
- **Hard Disk**: 16GB (min)
- **RAM**: 1GB (min)

I/O Requirements:

- **Inputs**: Keyboard(at least) and Mouse
- **Outputs**: Monitor(at least)

OVERVIEW OF PYTHON

Python is a general purpose, dynamic, high-level, and interpreted programming language. It supports Object Oriented programming approach to develop applications. It is simple and easy to learn and provides lots of high-level data structures. Guido Van Rossum is known as the founder of Python programming.

Features of Python:

- Python is a high level language. It is a free and open source language.
- It is an interpreted language, as Python programs are executed by an interpreter.
- Python programs are easy to understand as they have a clearly defined syntax and relatively simple structure.
- Python is case-sensitive. For example, NUMBER and number are not the same in Python.
- Python is portable and platform independent, meaning it can run on various operating systems and hardware platforms.
- Python has a rich library of predefined functions.
- Python is also helpful in web development. Many popular web services and applications are built using Python.
- Python uses indentation for blocks and nested blocks.

PROJECT MODULES

Local Modules:
Due to the simplicity of application this project provides, the code is short enough to fit in one module without any issues, hence *no other local modules are required*, which makes it easy to share too.

Built-In Modules:
This project uses only *one built-in python module*:

- **os**

Installed Modules:
This projects uses only *one installed module*:

- **pandas** - *pip install pandas*

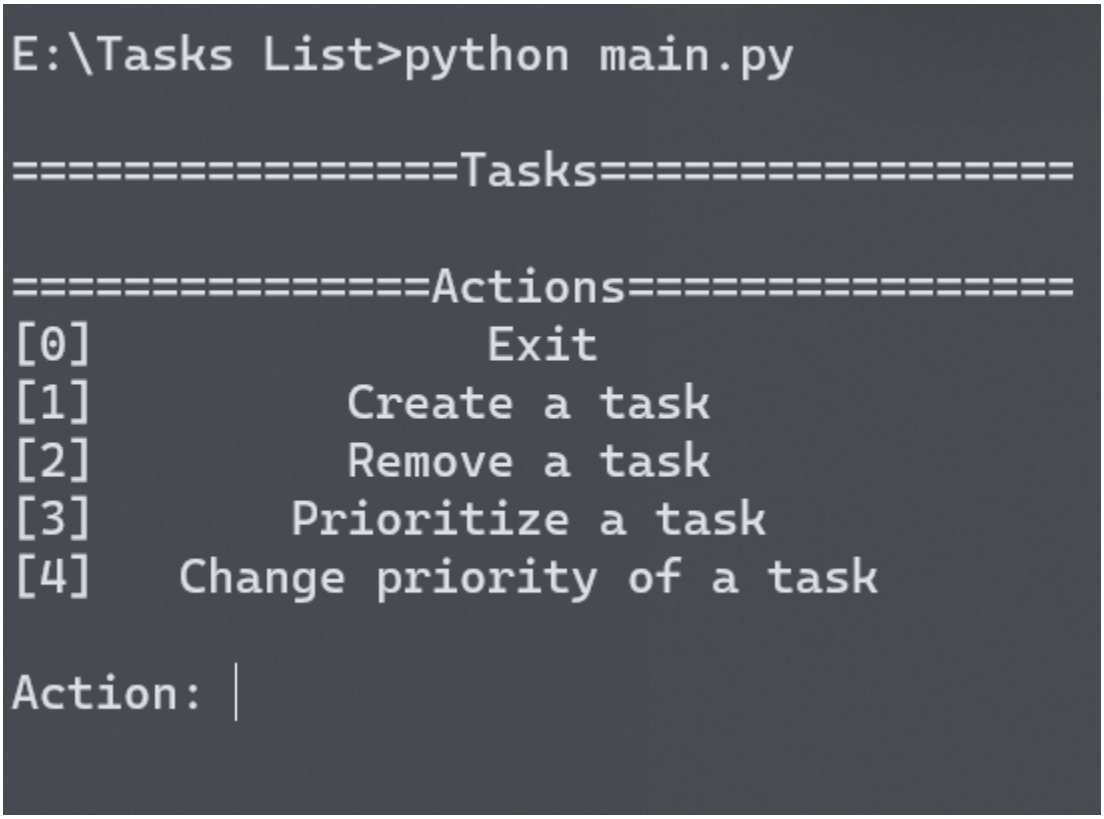
CODE

```
import pandas as pd
import os

SAVE_FILE = "data.csv"

tasks = pd.Series(dtype="str")
if os.path.isfile(SAVE_FILE):
	data = pd.read_csv(SAVE_FILE, header=0, index_col=0)
	tasks = pd.Series([i for _, i in data.to_records()], dtype="str")

while True:
	print()
	print(f"""{"Tasks":=^38}""")
	for task_id, task in enumerate(tasks):
		print(f"[{task_id}]", task, sep=" ")

	print()
	print(f"""{"Actions":=^38}""")
	print(f"""[0] {"Exit": ^30}""")
	print(f"""[1] {"Create a task": ^30}""")
	print(f"""[2] {"Remove a task": ^30}""")
	print(f"""[3] {"Prioritize a task": ^30}""")
	print(f"""[4] {"Change priority of a task": ^30}""")
	print()

	action = input("Action: ")

	if action ==  "0":
		print("Bye!")
		break
	elif action ==  "1":
		task = pd.Series([input("Create New Task: ")])
		tasks = pd.concat([task, tasks])
		tasks.index = [x for x in range(len(tasks))]
		print("Added task!")
		tasks.to_csv(SAVE_FILE)
	elif action == "2":
		task_id = input("ID of task to remove: ")
		try:
			tasks = tasks.drop([int(task_id)])
			tasks.index = [x for x in range(len(tasks))]
			print(f"Removed task at {task_id}!")
			tasks.to_csv(SAVE_FILE)
		except:
			print("Invalid id!")
	elif action == "3":
		task_id = input("ID of task to prioritize: ")
```

```
        try:
                task = pd.Series([tasks[int(task_id)]])
                tasks = tasks.drop([int(task_id)])
                tasks = pd.concat([task, tasks])
                tasks.index = [x for x in range(len(tasks))]
                print(f"Prioritized task at {task_id}!")
                tasks.to_csv(SAVE_FILE)
        except:
                print("Invalid id!")
elif action == "4":
        task_id = input("ID of task to change priority: ")
        task_priority = input("Priority: ")
        try:
                task = pd.Series([tasks[int(task_id)]], index=[int(task_priority)])
                tasks = tasks.drop([int(task_id)])
                tasks:pd.Series = pd.concat([task, tasks])
                tasks = tasks.sort_index()
                tasks.index = [x for x in range(len(tasks))]
                print(f"Set task at {task_id} to {task_priority}!")
                tasks.to_csv(SAVE_FILE)
        except:
                print("Invalid id!")
else:
        print("Invalid action!")
```

PROGRAM OUTPUT

First time opening the application:



Adding a new task:

```
Action: 1
Create New Task:
```

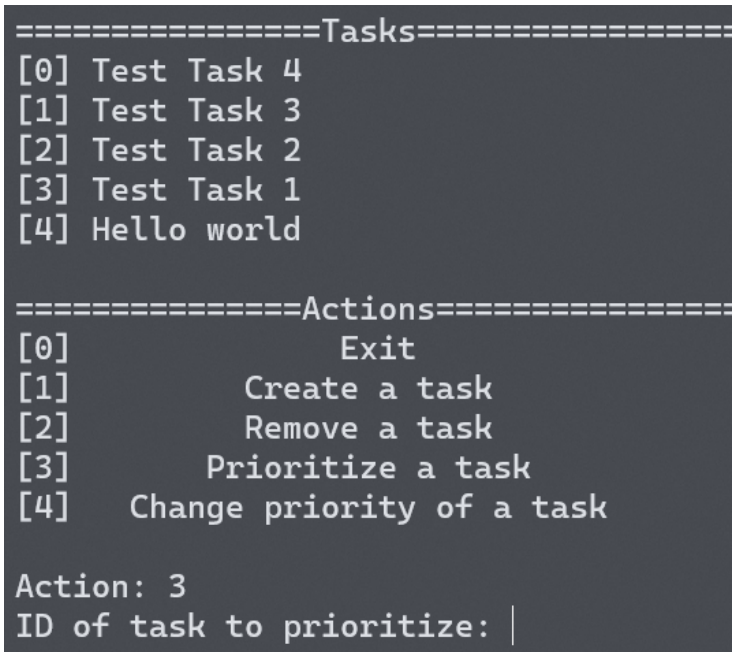
```
Action: 1
Create New Task: Hello world
Added task!

================Tasks================
[0] Hello world

===============Actions===============
[0]                Exit
[1]         Create a task
[2]         Remove a task
[3]       Prioritize a task
[4]   Change priority of a task

Action:
```

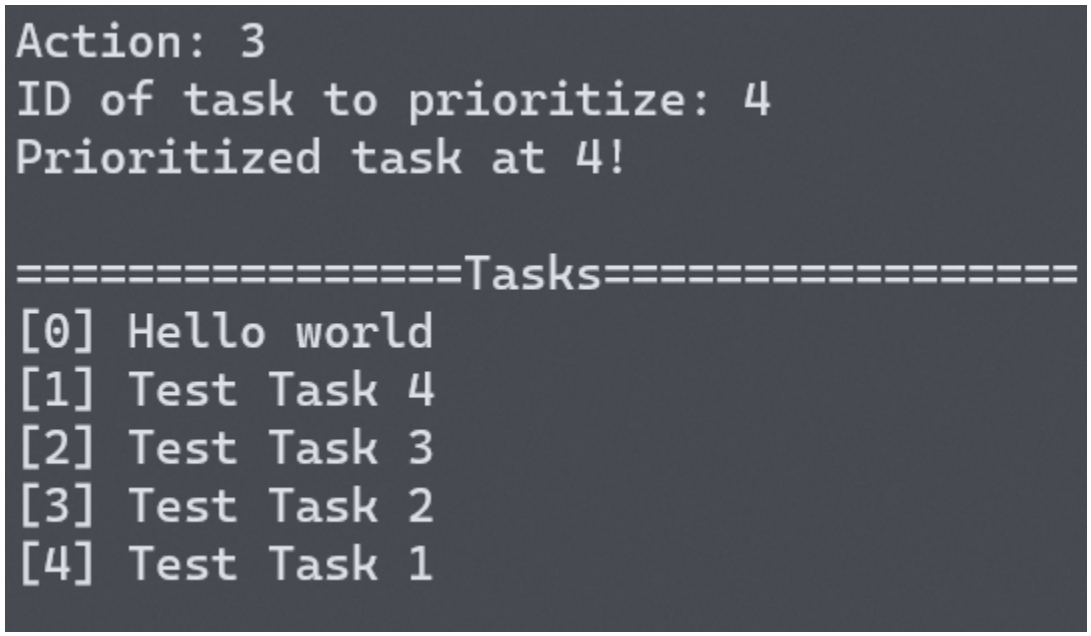
Exiting and loading again:

```
Action: 0
Bye!
```

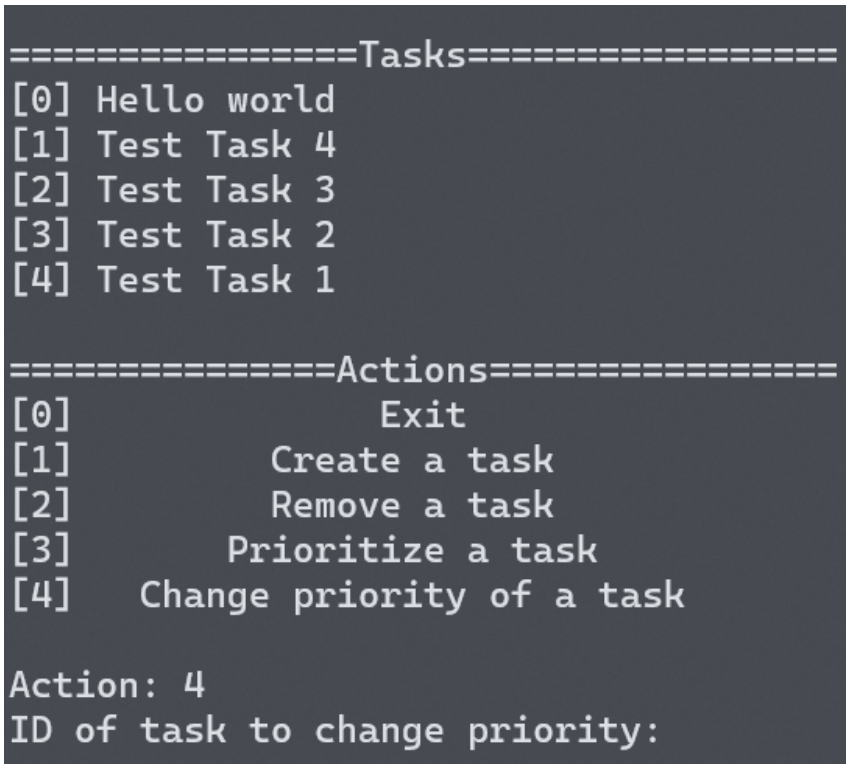
```
================Tasks================
[0] Hello world

===============Actions===============
[0]               Exit
[1]         Create a task
[2]         Remove a task
[3]       Prioritize a task
[4]   Change priority of a task

Action: 0
Bye!

E:\Tasks List>python main.py

================Tasks================
[0] Hello world

===============Actions===============
[0]               Exit
[1]         Create a task
[2]         Remove a task
[3]       Prioritize a task
[4]   Change priority of a task

Action:
```

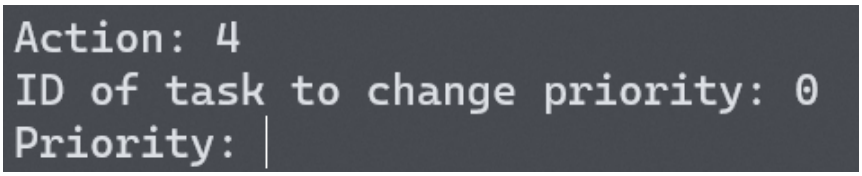
Prioritizing task:

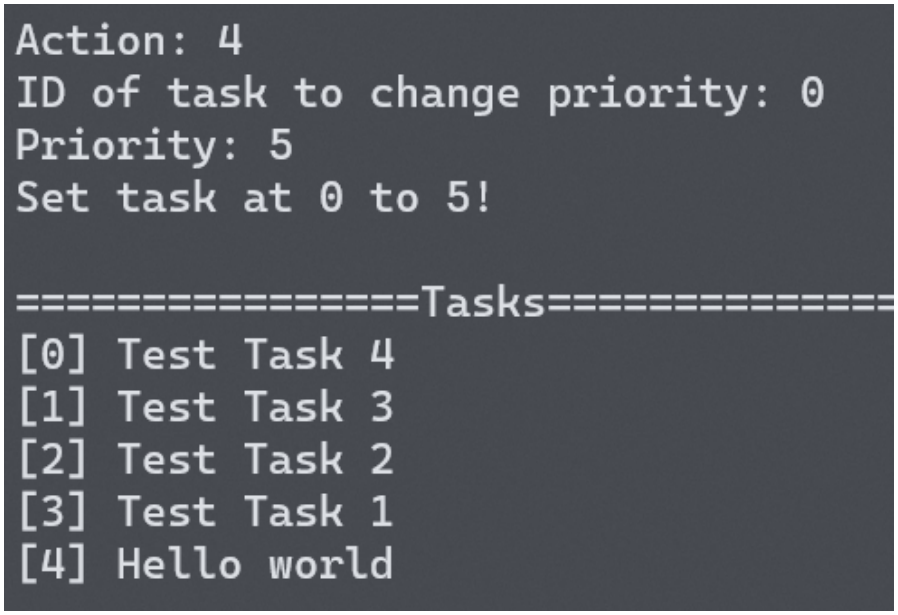




Prioritizing task to custom priorities:







CONCLUSION

The application made, “Task Management System” is a simple program suitable for individuals and small corporations. It consists of all basic and necessary tools and requirements for tasks and project management. We were successful in making new tasks, delete tasks, prioritize tasks to maximum and custom priorities, save tasks data and finally, retrieve saved tasks data later.

We strongly believe that the implementation of this system will surely benefit organizations and individuals who use it.

BIBLIOGRAPHY

References and Bibliography:

- Informatics Practices Class-XII NCERT Publication
- Informatics Practices Class-XII by Sumita Arora
- Think Python by Allen B Downey
- Python for everybody by Charles Severance
- https://ncert.nic.in/
- https://pandas.pydata.org/docs/index.html
- https://github.com/

The final application is available on *GitHub*:

- https://github.com/AttAditya/TasksList