KGISL MICROCOLLEGE

PY MED BILLING

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ABSTRACT

Hospital billing involves various complex processes, including patient registration, service billing, and bill generation. Manual systems are prone to errors, time-consuming, and often result in inaccurate billing. With the increasing demand for automation in healthcare, this project seeks to provide a basic yet effective solution.

This beginner-friendly project aims to design a simple hospital billing system using Python and Tkinter. The system will enable hospital staff to efficiently manage patient billing information, calculate total costs, and generate bills.

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INTRODUCTION:

The Hospital Billing System is a simple and user-friendly application designed to manage patient billing information efficiently. This project aims to create a computerized system that replaces traditional manual billing methods, reducing errors and increasing productivity.

Objectives:

1. Design a user-friendly graphical user interface (GUI) using Tkinter.
2. Implement patient registration and billing information management.
3. Develop a system to calculate total costs and generate bills.

Scope:

This project focuses on the core functionality of hospital billing, including:

1. Patient registration
2. Service billing (consultation, medication, lab tests, etc.)
3. Bill generation and display

SOFTWARE REQUIREMENT AND SPECIFICATION:

Python can be used in healthcare for a variety of purposes, including data analysis, management, and predictive modeling .Hospitals have a variety of expenses.Python and Tkinter offer a powerful combination for developing hospital billing systems. Python's readability, versatility, and extensive libraries make it an ideal choice for handling complex data processing and calculations. Tkinter, a GUI toolkit, provides a simple and intuitive interface for interacting with the system.

PROJECT PLAN:

- Improves patient satisfaction
- Helps facilities run more efficiently
- Improves cash flow
- Ensures accurate payments
- Reduces debts

Objectives for the Users:

1. Hospital administrators: Efficiently manage patient billing information.
2. Hospital staff: Easily generate accurate bills and reduce manual errors.
3. Patients: Receive clear and transparent billing information.

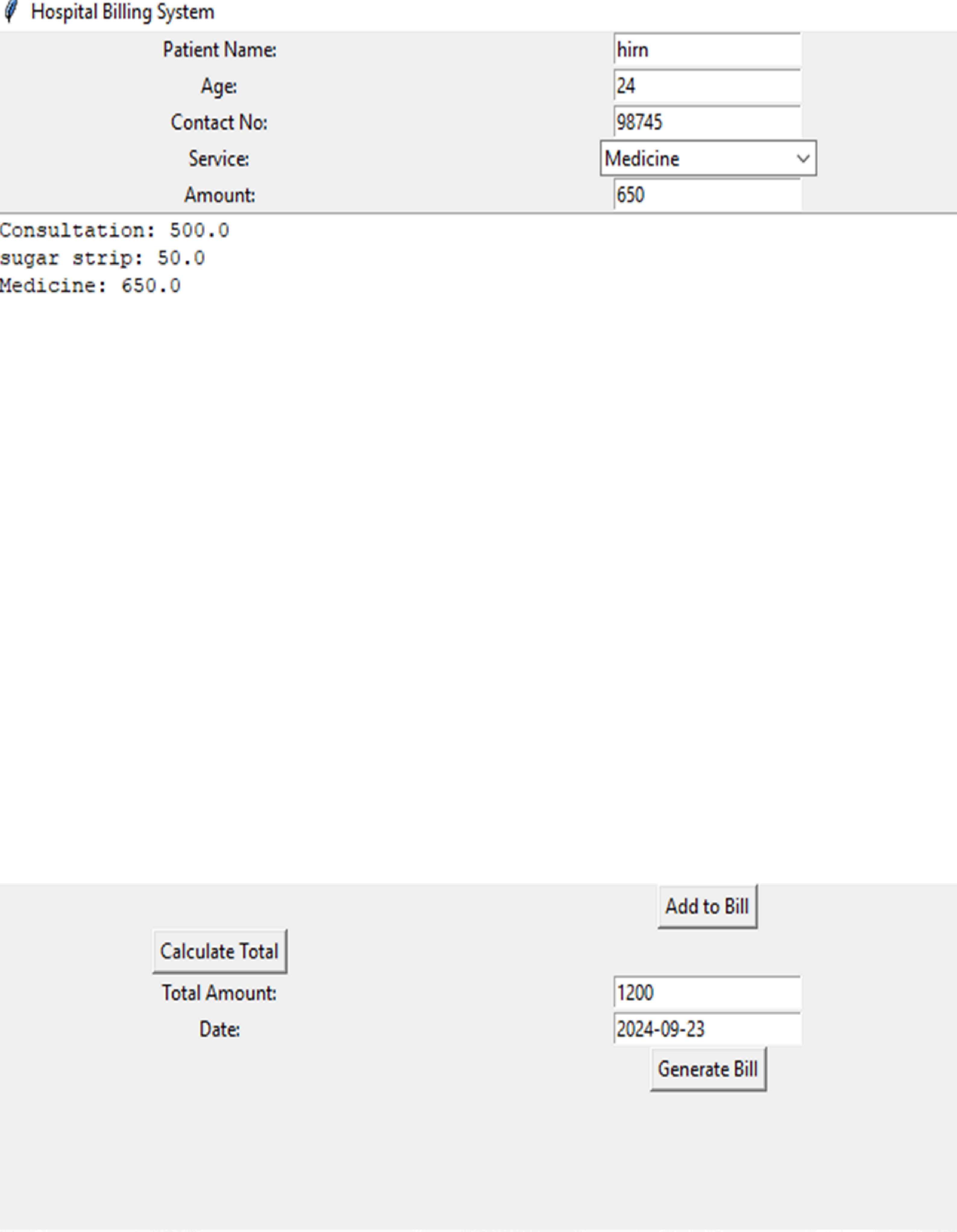
Technical Specifications:

1. Programming Language: Python 3.x
2. GUI Library: Tkinter

CODE:

```
import tkinter as tk
from tkinter import ttk, messagebox
from datetime import datetime

class HospitalBillingSystem:
    def __init__(self, root):
        self.root = root
        self.root.title("Hospital Billing System")

        self.patient_name = tk.StringVar()
        self.age = tk.StringVar()
        self.contact_no = tk.StringVar()
        self.service = tk.StringVar()
        self.amount = tk.StringVar()
        self.total_amount = tk.StringVar()
        self.date = tk.StringVar()
        self.date.set(datetime.now().strftime("%Y-%m-%d"))

        self.create_widgets()

    def create_widgets(self):
        tk.Label(self.root, text="Patient Name:").grid(column=0, row=0)
        tk.Entry(self.root, textvariable=self.patient_name).grid(column=1, row=0)

        tk.Label(self.root, text="Age:").grid(column=0, row=1)
        tk.Entry(self.root, textvariable=self.age).grid(column=1, row=1)

        tk.Label(self.root, text="Contact No:").grid(column=0, row=2)
        tk.Entry(self.root, textvariable=self.contact_no).grid(column=1, row=2)
tk.Label(self.root, text="Service:").grid(column=0, row=3)
            ttk.Combobox(self.root, textvariable=self.service, values=["Consultation", "Surgery",
"Medicine"]).grid(column=1, row=3)

        tk.Label(self.root, text="Amount:").grid(column=0, row=4)
        tk.Entry(self.root, textvariable=self.amount).grid(column=1, row=4)

        self.bill_text = tk.Text(self.root)
        self.bill_text.grid(column=0, row=5, columnspan=2)

        tk.Button(self.root, text="Add to Bill", command=self.add_to_bill).grid(column=1, row=6)
        tk.Button(self.root, text="Calculate Total", command=self.calculate_total).grid(column=0,
row=7)

        tk.Label(self.root, text="Total Amount:").grid(column=0, row=8)
        tk.Entry(self.root, textvariable=self.total_amount).grid(column=1, row=8)

        tk.Label(self.root, text="Date:").grid(column=0, row=9)
        tk.Entry(self.root, textvariable=self.date).grid(column=1, row=9)

            tk.Button(self.root, text="Generate Bill", command=self.generate_bill).grid(column=1,
row=10)
    def add_to_bill(self):
        try:
            service = self.service.get()
            amount = float(self.amount.get())
            self.bill_text.insert(tk.END, f"{service}: {amount}\n")
        except ValueError:
            messagebox.showerror("Error", "Amount must be a number")
```

```
 def calculate_total(self):
 try:
 total = 0
 for line in self.bill_text.get("1.0", tk.END).splitlines():
 total += float(line.split(":")[1].strip())
 self.total_amount.set(str(total))
 except ValueError:
 messagebox.showerror("Error", "Invalid bill items")

 def generate_bill(self):
 bill = f"Patient Name: {self.patient_name.get()}\nAge: {self.age.get()}\nContact No:
{self.contact_no.get()}\nDate: {self.date.get()}\n\n{self.bill_text.get('1.0',
tk.END)}\nTotal Amount: {self.total_amount.get()}"
 print(bill)
 messagebox.showinfo("Success", "Bill generated successfully")

root = tk.Tk()
hospital_billing_system = HospitalBillingSystem(root)
root.mainloop()
```



Patient Name: hirn

Age: 24

Contact No: 98745

Service: Medicine

Amount: 650

```
Consultation: 500.0
sugar strip: 50.0
Medicine: 650.0
```

Total Amount: 1200

Date: 2024-09-23

Expected Outcomes:

1. A functional hospital billing system with GUI.
2. Improved efficiency and accuracy in patient billing.
3. Enhanced user experience for hospital staff and patients.

Limitations:

1. Basic security measures (no encryption).
2. Limited scalability.
3. No integration with existing hospital management systems.

Project Timeline:

- Planning and design: 2 days
- Implementation: 7 days
- Testing and debugging: 3 days
- Documentation and reporting: 2 days

Project Objectives and Success Criteria:

- Successful implementation of patient registration and billing functionality.
- Accurate calculation and generation of bills.
- User-friendly GUI with clear navigation.
- Timely completion within the specified timeline.

Conclusion and Future Enhancements

User-Friendly Interface
The Tkinter-based GUI provided an intuitive and easy-to-navigate interface for both administrators and patients.

Patient Management:
The system effectively managed patient records, including personal information, medical history, and insurance details.

Billing Calculations:
Accurate calculations were implemented for various billing components such as consultations, procedures, medications, and hospital stays

Reports and Analytics:
Detailed reports were generated to provide insights into billing trends, identify areas for improvement, and support financial decision-making.