

# **PROJECT REPORT**

**ON**

## **InterviewAgent**

Submitted in partial fulfillment of the requirements for the degree of

**Master of Computer Applications (MCA)**

**Submitted By:**

[Your Name]

# **Contents (for Application Oriented Projects)**

1. Introduction	00
1.1 Project Description (2-4 Pages)	00
1.2 Company Profile (1-3 Pages)	00
2. Literature Survey	00
2.1 Existing And Proposed System (2-3 Pages)	00
2.2 Feasibility Study (2-3 Pages)	00
2.3 Tools And Technologies Used (2-4 Pages)	00
2.4 Hardware And Software Requirements (1 Page)	00
3. Software Requirements Specification	00
3.1 Users (2-3 Pages)	00
3.2 Functional Requirements (2-3 Pages)	00
3.3 Non-functional Requirements (2-3 Pages)	00
4. System Design	00
4.1 System Perspective (1-2 Pages)	00
4.2 Context Diagram (1-2 Pages)	00
5. Detailed Design	00
5.1 Use Case Diagram (4-6 Pages)	00
5.2 Sequence Diagrams (4-6 Pages)	00
5.3 Collaboration Diagrams (3-5 Pages)	00
5.4 Activity Diagram (4-6 Pages)	00
5.5 Database Design (3-4 Pages)	00
6. Implementation	00
6.1 Screen Shots (15-20 Pages)	00
7. Software Testing (6-8 Pages)	00
8. Conclusion (1 Page)	00
9. Future Enhancements (1 Page)	00
Appendix A Bibliography (1 Page)	00
Appendix B User Manual (2-10 Pages)	00

## **1. Introduction**

### **1.1 Project Description**

InterviewAgent is a state-of-the-art AI-powered platform...

The platform is designed to help students and professionals...

Key features include...

## **Project Description (Cont.)**

Detailed Feature Breakdown:

- AI Interviewer: Real-time voice/chat interaction.
- Coding Arena: Integrated IDE with test cases.
- Dashboard: Analytics and progress tracking.

## **1.2 Company Profile**

Developed as an academic project at [College Name].

## **2. Literature Survey**

### **2.1 Existing And Proposed System**

Existing Systems: LeetCode, HackerRank...

## Proposed System: InterviewAgent...

## **2.2 Feasibility Study**

Technical Feasibility...

Economic Feasibility...

## 2.3 Tools And Technologies Used

Backend Dependencies (requirements.txt):

```
fastapi
uvicorn
sqlalchemy
pydantic
pydantic-settings
python-jose[cryptography]
passlib[bcrypt]
bcrypt==4.0.1
python-multipart
openai
python-dotenv
asyncpg
psycopg2-binary
email-validator
```

## Frontend Dependencies (package.json):

```
{  
  "name": "frontend",  
  "version": "0.1.0",  
  "private": true,  
  "scripts": {  
    "dev": "next dev",  
    "build": "next build",  
    "start": "next start",  
    "lint": "eslint"  
  },  
  "dependencies": {  
    "@monaco-editor/react": "^4.7.0",  
    "@radix-ui/react-avatar": "^1.1.11",  
    "@radix-ui/react-dropdown-menu": "^2.1.16",  
    "@radix-ui/react-label": "^2.1.8",  
    "@radix-ui/react-radio-group": "^1.3.8",  
    "@radix-ui/react-select": "^2.2.6",  
    "@radix-ui/react-switch": "^1.2.6",  
    "@radix-ui/react-tabs": "^1.1.13",  
    "axios": "^1.13.2",  
    "chart.js": "^4.5.1",  
    "class-variance-authority": "^0.7.1",  
    "clsx": "^2.1.1",  
    "framer-motion": "^12.23.25",  
    "lucide-react": "^0.555.0",  
    "next": "16.0.7",  
    "react": "19.2.0",  
    "react-chartjs-2": "^5.3.1",  
    "react-dom": "19.2.0",  
    "tailwind-merge": "^3.4.0"  
  },  
  "devDependencies": {  
    "@tailwindcss/postcss": "^4",  
    "@types/node": "^20",  
    "@types/react": "^19",  
    "@types/react-dom": "^19",  
    "eslint": "^9",  
    "eslint-config-next": "16.0.7",  
    "tailwindcss": "^4",  
    "typescript": "^5"  
  }  
}
```

## **2.4 Hardware And Software Requirements**

Hardware: i5/i7, 16GB RAM...

### **3. Software Requirements Specification**

#### **3.1 Users**

User Class 1: Candidate...

User Class 2: Administrator...

### **3.2 Functional Requirements**

FR1: Authentication...

FR2: Assessment...

### **3.3 Non-functional Requirements**

NFR1: Performance...

NFR2: Security...

## **4. System Design**

### **4.1 System Perspective**

Client-Server Architecture...

## **4.2 Context Diagram**

[Context Diagram Placeholder]

## **5. Detailed Design**

### **5.1 Use Case Diagram 1**

[Use Case Diagram Placeholder]

## **5.1 Use Case Diagram 2**

[Use Case Diagram Placeholder]

## **5.1 Use Case Diagram 3**

[Use Case Diagram Placeholder]

## **5.1 Use Case Diagram 4**

[Use Case Diagram Placeholder]

## 5.2 Sequence Diagram 1

[Sequence Diagram Placeholder]

## 5.2 Sequence Diagram 2

[Sequence Diagram Placeholder]

## 5.2 Sequence Diagram 3

[Sequence Diagram Placeholder]

## 5.2 Sequence Diagram 4

[Sequence Diagram Placeholder]

### **5.3 Collaboration Diagram 1**

[Collaboration Diagram Placeholder]

### **5.3 Collaboration Diagram 2**

[Collaboration Diagram Placeholder]

### **5.3 Collaboration Diagram 3**

[Collaboration Diagram Placeholder]

## **5.4 Activity Diagram 1**

[Activity Diagram Placeholder]

## **5.4 Activity Diagram 2**

[Activity Diagram Placeholder]

## **5.4 Activity Diagram 3**

[Activity Diagram Placeholder]

## **5.4 Activity Diagram 4**

[Activity Diagram Placeholder]

## 5.5 Database Design

### User Model:

```
from sqlalchemy import Boolean, Column, Integer, String
from app.db.base_class import Base

class User(Base):
    id = Column(Integer, primary_key=True, index=True)
    email = Column(String, unique=True, index=True, nullable=False)
    hashed_password = Column(String, nullable=False)
    full_name = Column(String, index=True)
    is_active = Column(Boolean(), default=True)
    is_superuser = Column(Boolean(), default=False)
```

## Coding Model:

```
from sqlalchemy import Column, Integer, String, ForeignKey, DateTime, Text
from sqlalchemy.orm import relationship
from datetime import datetime
from app.db.base_class import Base

class CodingProblem(Base):
    id = Column(Integer, primary_key=True, index=True)
    title = Column(String, index=True)
    description = Column(Text, nullable=False)
    difficulty = Column(String) # Easy, Medium, Hard
    test_cases = Column(Text) # JSON string of test cases

class CodingSubmission(Base):
    id = Column(Integer, primary_key=True, index=True)
    user_id = Column(Integer, ForeignKey("user.id"))
    problem_id = Column(Integer, ForeignKey("codingproblem.id"))
    code = Column(Text, nullable=False)
    language = Column(String, default="python")
    status = Column(String) # Passed, Failed
    timestamp = Column(DateTime, default=datetime.utcnow)
```

Assessment Model (Snippet):

[Assessment Model Schema Placeholder]

## **6. Implementation**

### **6.1 Screenshot 1**

[Screenshot 1 Placeholder]

Figure 6.1: Description of Screenshot 1

## **6.1 Screenshot 2**

[Screenshot 2 Placeholder]

Figure 6.2: Description of Screenshot 2

## **6.1 Screenshot 3**

[Screenshot 3 Placeholder]

Figure 6.3: Description of Screenshot 3

## **6.1 Screenshot 4**

[Screenshot 4 Placeholder]

Figure 6.4: Description of Screenshot 4

## **6.1 Screenshot 5**

[Screenshot 5 Placeholder]

Figure 6.5: Description of Screenshot 5

## **6.1 Screenshot 6**

[Screenshot 6 Placeholder]

Figure 6.6: Description of Screenshot 6

## **6.1 Screenshot 7**

[Screenshot 7 Placeholder]

Figure 6.7: Description of Screenshot 7

## **6.1 Screenshot 8**

[Screenshot 8 Placeholder]

Figure 6.8: Description of Screenshot 8

## **6.1 Screenshot 9**

[Screenshot 9 Placeholder]

Figure 6.9: Description of Screenshot 9

## **6.1 Screenshot 10**

[Screenshot 10 Placeholder]

Figure 6.10: Description of Screenshot 10

## **6.1 Screenshot 11**

[Screenshot 11 Placeholder]

Figure 6.11: Description of Screenshot 11

## 6.1 Screenshot 12

[Screenshot 12 Placeholder]

Figure 6.12: Description of Screenshot 12

## 6.1 Screenshot 13

[Screenshot 13 Placeholder]

Figure 6.13: Description of Screenshot 13

## 6.1 Screenshot 14

[Screenshot 14 Placeholder]

Figure 6.14: Description of Screenshot 14

## 6.1 Screenshot 15

[Screenshot 15 Placeholder]

Figure 6.15: Description of Screenshot 15

## **7. Software Testing**

### **Test Case Suite 1**

Test Case ID | Description | Expected | Actual | Status

TC001 | Test Feature 1 | Success | Success | Pass

## **Test Case Suite 2**

Test Case ID | Description | Expected | Actual | Status

TC002 | Test Feature 2 | Success | Success | Pass

### **Test Case Suite 3**

Test Case ID | Description | Expected | Actual | Status

TC003 | Test Feature 3 | Success | Success | Pass

## **Test Case Suite 4**

Test Case ID | Description | Expected | Actual | Status

TC004 | Test Feature 4 | Success | Success | Pass

## **Test Case Suite 5**

Test Case ID | Description | Expected | Actual | Status

TC005 | Test Feature 5 | Success | Success | Pass

## **Test Case Suite 6**

Test Case ID | Description | Expected | Actual | Status

TC006 | Test Feature 6 | Success | Success | Pass

## **8. Conclusion**

The InterviewAgent project has successfully achieved...

## **9. Future Enhancements**

Future work includes...

## **Appendix A: Bibliography**

References...

## **Appendix B: User Manual**

User Manual Page 1...

User Manual Page 2...