**FINAL YEAR PROJECT PROPOSAL   
[FALL 2015]**

**Summary Table**

|  |  |
| --- | --- |
| **Title of Project** | **Efficient System for Restraining Criminal Activities - ( ESRCA-PROMIS)** |
| **Nature of End Product** | Desktop App |
| **Team Organization** | Democratic Decentralized |
| **Programming Environment** | 32-bit windows |
| **Programming Languages** | Java |
| **Software Tools** | Eclipse SDK, Netbeans , Oracle |
| **Software Development Model** | Component Assembly Model / Iterative/ Agile |
| **Data Link Model** | RDBMS |
| **Project Management Techniques** | Ganttcharts/Program Evaluation and Review Technique/ System Development Life Cycle |
| **Project Costing** | COCOMO / Cost & Benefit Analysis /Critical Success Factor |
| **Fault Tolerance** | Verification and Data Validation through White/Black/Grey Box testing |
| **Team Members** | Safee Sultan Sheikh (56390)  Shahzeb Pirzada (5701) |

**Accepted / Rejected:**­­ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Total Marks:**­­ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Committee Review:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
  
**Committee Signatures:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Abstract**

We will make an desktop application that will store the information of all the prisoners in Karachi Central jail, assign them a category, the staff at jail and the visitor logs to determine the criticality and potential of further crime. The system will be maintain all internal activities of Central Jail and furthermore a heuristic function will highlight the critical visitor that might be involve in some possible attacks in near future.

1. **Introduction**
   1. **Background**

There are no current management systems for Central Jail Karachi that keep a record of visitors and co-relate their frequency of visits to check if a certain criminal might be about to cause more trouble or alarm the prison guards and ensure they are more watchful. Our PRO-MIS will do that using AI.

* 1. **Aim of Project /Motivation**

The aim of the project is to apply heuristics to the database and show red alert for the most dangerous categories of criminals that have been frequently visited to stop further crimes from happening.

These logs will be maintained and the categories will be decided according to the crime committed and this way we will make sure the potential of a danger is averted in due time.

* 1. **Comparative survey of Past Work and Current Objective**

|  |  |  |
| --- | --- | --- |
| **#** | **Current Features** | **Proposed Features** |
| 01 | **Manual Logs** | **Categorize criminals** |
| 02 | **No database for criminal records** | **Save relevant personnel and staff information** |
| 03 | **No category of criminals** | **Save criminal records and visitor logs for each criminal** |
| 04 |  | **Apply heuristics to the frequency of visits and guess further criminal activities** |

1. **Features / Challenges presented by the project**
   1. **Your project has ability to do this**
      1. Identify frequently visited criminals
      2. Gauge potential threat of a crime
      3. Store criminal records and jail staff records
   2. **Inputs / Data Collection methods**
      1. Law and order agencies
      2. Logs of visitors manually updated
   3. **Data processing / Calculation procedures**
      1. Implementation of Algorithms. Heuristics
      2. Usage of 3rd-party APIs: Webcam\_Capture.dll for using camera inside Application unterface
   4. **Results and Reports**
      1. Alert for dangerous criminals
      2. Show frequency of visits
      3. Guess future crimes
2. **Nature of End-Product**
   1. **Type:** It will be a desktop application capable of running on Windows based Computer. It will have information updates of visits to criminals and the frequency of those visits.
   2. **Applicability / Impact on People’s life**: The product is aimed for law and order agencies to be able to anticipate crimes.
3. **Learning Out Comes**

It is a project that incorporates Windows application development and a bit of artificial intelligence to help a very moral and social cause.

1. **Methodology**
   1. **Software Development:**  
      Project will be developed using CAM, CASE, Waterfall and Agile Development
   2. **Code Pattern:**  
       Object Oriented Programming, Module Based Programming, Structured Programming, and Object Oriented Analysis.
2. **Testing Criteria**
   1. **Test Environment:** Automated and Manual Testing
   2. **Testing Approach:** White Box, Black Box& Grey Box.
   3. **Testing Type:** Regression Testing, Scalability Testing, Load Testing, Software Performance Testing, Volume Testing, Reliability Testing, Compatibility Testing, Usability Testing And Graphical User Interface Testing.
3. **Project Planning & WBS**
   1. **Time per activity - division in weeks &percentage**

|  |  |  |
| --- | --- | --- |
| **Activity** | **Weeks** | **%age of time** |
| Requirement Analysis | 4 weeks | 15% |
| Design | 4 weeks | 15% |
| Implementation | 8 weeks | 25% |
| Testing | 4 weeks | 13.75% |
| Evaluation | 4 weeks | 12.5% |
| Documentation | 6 weeks | 18.75% |

* 1. **Milestones for Semester One**

|  |  |  |
| --- | --- | --- |
| Week 1 | Find criminal records format | Find criminal records format |
| Week 2 | Find the list of staff at jail | Find the list of staff at jail this forum |
| Week 3 | Set up and install required tools | Set up and install required tools |
| Week 4 | Find out the manual logs for visitors | Find out the manual logs for visitors |
| Week 5 | Feasibility of structure | Feasibility of structure |
| Week 6 | Analyzing documents | Analyzing documents |
| Week 7 | JAD (joint application development) | JAD (joint application development) |
| Week 8 | Prototyping - paper prototype (Pictive) | Prototyping - paper prototype (Pictive) |
| Week 9 | Data flow diagrams | Logic modeling |
| Week 10 | Decision trees | ERD |
| Week 11 | Incorporate environmental information | Incorporate environmental information |
| Week 12 | Application Designing | Application Designing |
| Week 13 | Creating database tables | Creating database tables |
| Week 14 | Project Management knowledgebase | Project Management knowledgebase |
| Week 15 | Mobile Application Designing | Mobile Application Designing |
| Week 16 | Incorporate internal  Information | Incorporate internal information |

**c. Milestones for Semester Two**

|  |  |  |
| --- | --- | --- |
| **Week** | **Student 1 Task** | **Student 2 Task** |
| Week 1 | Object Oriented Research | Object Oriented Research |
| Week 2 | Object Oriented Implementation | Object Oriented Implementation |
| Week 3 | Testing | Testing |
| Week 4 | Setting user rights | Setting user rights |
| Week 5 | Creating Databases & Testing | Creating Databases & Testing |
| Week 6 | Store visitor entries | Store visitor entries |
| Week 7 | Creating Databases & Testing | Creating Databases & Testing |
| Week 8 | Apply heuristics | Apply heuristics |
| Week 9 | Creating Databases & Testing | Creating Databases & Testing |
| Week 10 | Report potential criminal activities | Report potential criminal activities |
| Week 11 | Creating Databases & Testing | Creating Databases & Testing |
| Week 12 | Store staff details and prerogatives | Store staff details and prerogatives |
| Week 13 | Creating Databases & Testing | Creating Databases & Testing |
| Week 14 | SQA Testing | SQA Testing |
| Week 15 | Documentation | Documentation |
| Week 16 | Finalizing | Finalizing |

* 1. **Project Budget & Costing**
  2. **Budget &Costing Model**

The project is expected to cost at least PKR 30,000

* 1. **Revenue Generation**

The expenses would be split in two and the partners would bear them at their own discretion.

* 1. **Project Sponsor**

There are no current sponsors however we might have a software house on board that could either sell or use our system and be willing to invest in exchange of our product.

There is no current sponsors however we are in talk with the central jail authorities to purchase our system. If they refused to do so then we will give them for free but will charge them for installation fees.

**Hardware & Software Requirements**

* 1. **Hardware**
     1. Android
     2. Tablet
     3. General PC
  2. **Software**
     1. Eclipses SDK
     2. Photoshop
     3. Oracle
     4. Netbeans

1. **Language & Skills**

|  |  |
| --- | --- |
| **Language / Skill** | **Expertise Level** (out of 10) |
| JAVA | 8 out of 10 |
| XML | 7 out of 10 |
| Graphics Designing | 7 out of 10 |

1. **References**