

PARIKSHRAN

FOR
TRAINING IN VR
BY
FORTMINERS

FROM



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ABSTARCT

The Personnel working at mining enterprises must be prepared to overcome professional difficulties and to possess the professional competencies required not only for the implementation of processes, but above all their safety. Modern digital modeling technologies used in mining activities expand the boundaries of practical training not only for future mining engineers, but also for working specialists. As part of the training process, it is important that the simulation of the mining environment be of a high quality almost indistinguishable from the actual environment. In this context, the development of process solutions based on virtual and augmented reality (VR/AR technologies) is most relevant. Process automation in the conditions of large-scale digital transformation laid the foundations for the development of VR/AR in mining industry. Data analysis shows that VR/AR technologies are the major consumer of IT solutions. They are in fact the integrator, or the highest "IT-transformation", which in practical terms create digital parallel production objects and processes. Further developments in this area may also change some of the existing traditional entities or create new ones, in the training system as well.

The diversity of areas in the development of VR/AR technologies, the maximum effect of their implementation is manifested in the development of special skills of personnel in equipment operation. This clearly relates to the need to ensure the efficiency and reliability of technological operations and processes. The interaction between the personals and objects in VR/AR world together with mining industries will allows a number of problems related to the formation of competencies in the future generation of specialists to be resolved.



01

PAST SURVEYS

Existing or Past
System Surveys

02

PROPOSITION

Our Proposed
System

03

OUTCOME

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describe the topic of
the section



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Tools and
Technologies used
and needed

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CHALLENGES

Limitations and
Challenges to be
faced

06

FUTURE SCOPE

Conclusion and
Future Scope



01

PAST SURVEYS

Surveys and Stats of Existing Systems

Statistics of VR over Existing System !

- **Four time faster** in VR training than in conventional classroom training
- **275%** more confident with the skills acquired with VR training
- **3.75 times** more connected emotionally with the content learned by VR. This is due the fact that people in general understand better when there is emotional involvement
- **4 times** more focused than learning by e-learning.
- Ensuring accuracy and detail of planning.
- Improving safety procedures.
- Increasing speed of operations.





02

PROPOSITION

Our Proposed System for Problem &
Innovation

IDEA AND SOLUTION

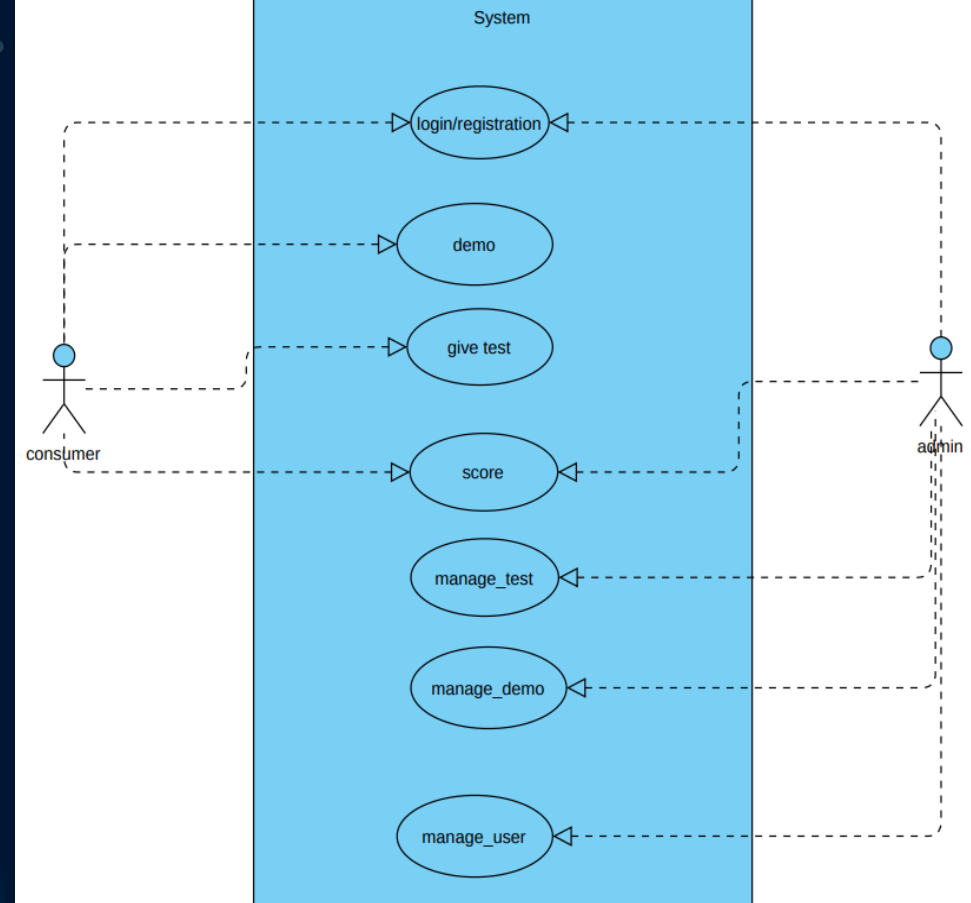
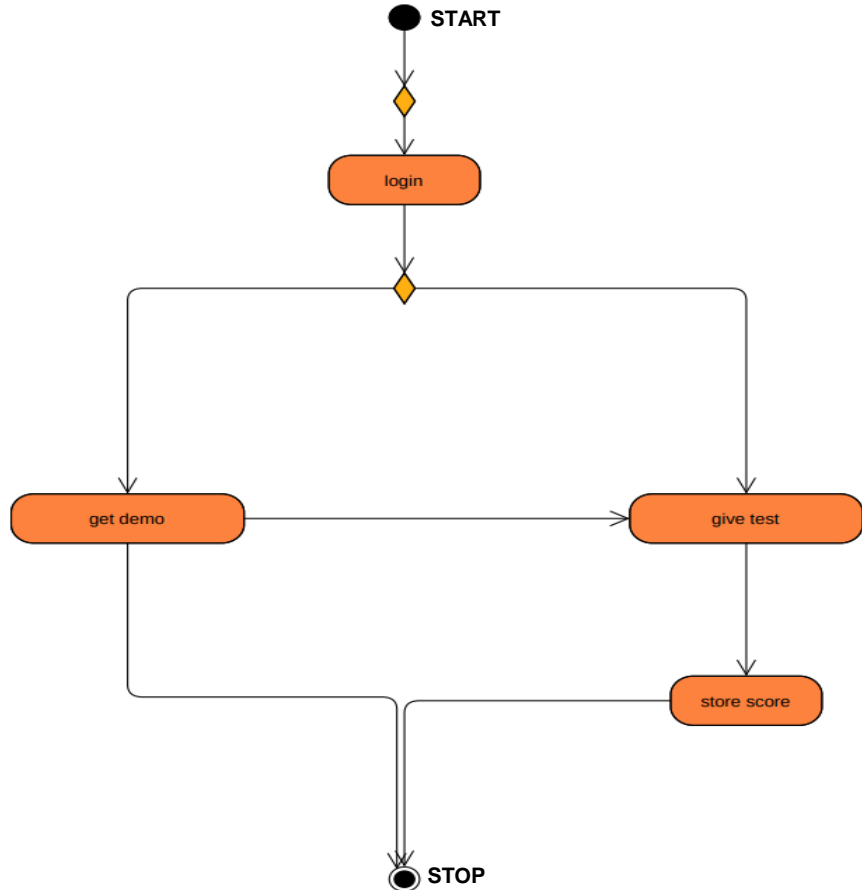
The proposal is to develop a desktop or Web application that runs on the capable Windows platform or Web Browser to provide a new way of understanding every step of mining & construction, from the initial state to the final state, in order to increase working efficiency, better understand machineries and tools, also ensure that all factors are considered (workers, admin, training and tests, etc.).

The application will aid in the understanding of the building project prior to the start of mining work, and will be beneficial to both mining experts and non-experts in the field.

The software test consists of five parts, each of which performs a particular function. New trainee, their training, their impact on the tools and the environment, and other information that is impossible to examine throughout the training process can all be presented using an Virtual Reality application.

As a result, the new visual tools have the potential to improve the quality of training in future mining projects by involving the entire community in picking the best alternative. It's also worth emphasizing that the viewing mode will be based on either real-time change created by overlapping virtual objects or a virtual image over which virtual items will be overlaid.

PROCESS FLOW & USECASE DIAGRAM



Some Snaps



Model Snap



Simulation Snap



03

OUTCOMES

Possible Growth and Outcomes



VIRTUAL VIEW OF SITES FOR TRAINEES

TRACKING THE TRAINEE PROGRESS

SKILLS TRAINING FOR WORKERS

TRACING THE WORK DONE

DECISIONS TO UPGRADE SITES AND WORK

SAFE EXPERIMENTALS FOR MACHINES



04

TOOLS

Technologies and Tools been used



Unity 3D



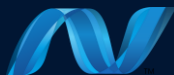
Scripting



Blender



Visual Basics



DotNET



SQL Server



05

CHALLENGES

Limitations and Challenges to be faced



STATISTICS

PROVIDING
REALTIME USER
STATISTICS



OPTIMIZATION

OPTIMIZATION OF
ALL OBJECTS &
ENVIRONMENTS



FILE SIZE

SIZE OF THE
DATASETS AND
3D MODELS



STORAGE

DB STORAGE
FOR DYANAMIC
PROCESS



06

FUTURE SCOPE

Future Scope and Conclusions

FUTURE SCOPES TO UPGRADE !



DATA ON CLOUD

DEPLOYING
DATA ON
CLOUD



OPTIMIZATION

OPTIMIZATION OF
ALL OBJECTS &
ENVIRONMENTS



AI BOT

3D BOT FOR
GUIDE &
TRAINING

OUR TEAM

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THANKS😊

