# Section – 2

# 2.1 Introduction

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| **Challenges:**  The challenges which are faced by our team are given below: |
| * The big challenge for us is to train the model with big data to detect the face and recognize the voice of the user. * Facing camera issue in the dark room. * Voice recognition. * Some of the components are not available in the market, so we ordered online. * The one big challenge is the disconnecting the wifi. * Making the frame of smart mirror. * Integrating hardware in the frame is very challenging. * Sometimes installing the AI libraries in Raspberry. * Network failure, smart mirror is an IOT based device so network should be fluent. |
| **Motivation and Need:** *(Please describe the motivation and need for this work.* ***Maximum 500 words.****)* |
| As technology advances, we have a tendency to still realize a lot of and a lot of uses for it that may previously be unimaginable. Originally, technology was primarily helpful for performing tasks humans struggle with, however, nowadays it's employed in even the foremost mundane tasks in a trial to simplify our lives. With the industrial revolution, we have been ready to save time in an exceeding variety of ways; but, as media consumption has raised, we have a tendency to also lose time. Because of this, saving time in our daily routines is often useful. a way technology has been enforced to avoid wasting time is by integrating computers into various components in our home, thus creating “Smart Home” devices. The “Smart Mirror” project relies upon this concept.  The smart Mirror can merge technology with a mirror to supply users with info while they use their mirror. The first motivation behind the smart mirror is to improve the quality of life. Providing info to users within the most convenient manner possible maybe a driving motivation behind the bulk of technological development for smartphones and tablets. The smart mirror can give convenient info to users on their mirror a day. Permitting the user to multitask by intense media whereas making ready for the day can save folks time nationwide. The goal of  the mirror is to supply folks with the info they'll need within the morning while preparing for the day or at night before attending to bed. This may save users time a day and facilitate to confirm they're conscious of vital details for his or her day. A user is going to be ready to check their calendar for any forthcoming events, peek at the weather forecast, and to not mention, consult the mirror for ancient personal appearance changes.  The motivation for this project stems from multiple sources. Within the Iron Man films, the main character utilizes holographic displays around the home to perform a variety of activities. a few years back, Corning released a video regarding their product called Glass that is meant to permit a sensible surface anyplace within the home. While these examples, and a mess of others, square measure well on the far side the scope of this mirror, their realization conjointly looks to be into the longer term. One benefit to the smart mirror is that, whereas it doesn't give the advanced capabilities of those examples, it's without delay possible. Another driving considers this project is that the indisputable fact that smart home technology has been developed for several components of the house however smart mirrors square measure lacking. whereas their square measure lots of tinkerers come to announce round the web, no absolutely accomplished implementation has been marketed to users up to now |

# 2.2 Aim and Objectives

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| *(Please describe the measurable objectives of the project and define the expected results. Use results-oriented wording with verbs such as ‘to develop..’, ‘to implement..’, ‘to research..’, ‘to determine..‘, ‘to identify..’* ***The objectives should not be statements and should actually specify in simple words what the project team intends to achieve (something concrete and measurable/ deliverable). Fill only those objectives that are applicable to the proposed project****.)* |
| **Research Objectives:** *(if any)*   * We want to research on the face detecting and voice recognition algorithms and want to make an efficient smart mirror.   **Academic Objectives:** *(if any)*  **Commercial Objectives:** *(if any)*   * <type here>   **Other Objectives:** *(if any)*   * <type here> |

# 2.3 Benefits

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| Expected Outcomes: *(Provide a list of proposed project outputs including publications, databases etc.)*It will detect the face of user and execute the instructions of user via voice.It can also be operate by touching the screen using IR frame.User can set he to-do list in the smart mirror.The display of the smart mirror will show the weather forecast, calender, time, daily news, traffic updates.User can play the music on smart mirror by connecting mobie with it and also by using web.Smart mirror will also play the vvideos on it.user can set the display of smart mirror according to the interest.There will be also temperature detecting sensor in the mirror to detect the temperature of the place. |
| Key Benefits and Beneficiaries: *(Please identify clearly the benefits and potential customers/beneficiaries of the project.)* **1. Saving time :**  This smart mirror aims to reduce and possibly eliminate the need for the user to make time in their daily morning or nightly routine to check their PC, tablet, or smartphone for the information they need. The mirror will provide the information with little to no effort from the user with the goal of not being a burden that he or she must maintain. The mirror wouldn’t be another activity, rather an enhancement to the already common use of mirrors in most modern bathrooms.  **2. Easy to use:**  The use of touch-less gestures will keep things simple and easy to use. No keyboards to try to keep dry and clean. The gestures will also allow the user to still use the mirror despite whether their hands are wet or dirty.  **3. Daily routine:**  It helps person to remind daily routine. The mirror will do the thinking for the user. First, it will turn on and off by itself. Then, it will update with the user’s calendar schedule, to-do lists, Twitter, news, and weather. This allows the users to read, think, and plan their day while getting ready in the morning or night.  **4. Entertainment:**  We can also connect mobile with it to enjoy music and videos. Beneficiaries:Smart mirror will give benefits to many peoples like:It can use in cloths shop, where there will be no need to wear the dress person can just select the dress and can check how it looks like on him/her on mirror.It will help almost every person. People can updated at the morning while getting ready for the offices or etc.Students can set there to-do. It will help them to finished their work at time. |
| Technology Transfer/Diffusion Approach: *(Please describe how the outputs of the project will be transferred to the beneficiaries/customers. Maximum 500 words.)*Smart mirror is a hardware and software integrated device.It is a hardware device so user can buy it from the market.Smart mirror is easy to use, user first need to login in it and then can be operated by the instructions of user.It can also be operating by using he gestures and there is a camera in the mirror which will detect the gestures of user.There will be also the IR frame through which it can be operating by touching it. **Functional Requirements:**  The functional requirements define features that must be done for the project to be considered a success.   * Must be able to display information on screen. * Must be controlled by something without requiring direct input * Must be connected to the web to receive incoming data * Must be connected to the web to receive incoming data * System defaults in low power sleep mode * Must be able to scale to multiple screen sizes * Controlled by alternative input methods(Gestures, voice API) * Integrate more advanced web modules, perhaps a browser * Sleeps when certain time has passed * Allow users to integrate their own web modules.   **Non-Functional Requirements:**  Non-functional requirements define how the functional requirements are achieved.   * A simpler user interface than a computer * System has good performance for users * System maintains good reliability for users * Display disappears and becomes a mirror * A friendly user interface that works by selecting modules * System remembers user name and can reply to user by name * Ability to augment a reflection |
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