**Model Development Phase Template**

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| Date | 30/06/2025 |
| Team ID | LTVIP2025TMID47084 |
| Project Title | Revolutionizing Liver care : Predicting Liver cirrhosis using Advanced machine learning Techniques |
| Maximum Marks | 5 Marks |

**Feature Selection Report Template**

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

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| **Feature** | **Description** | **Selected (Yes/No)** | **Reasoning** |
| age | Patient's age in years | Yes | Age is a significant risk factor for liver cirrhosis, and older adults are more likely to develop the disease. |
| Gender | Patient's gender (male/female) | Yes | Gender affects liver cirrhosis risk, with males being more likely to develop the disease. |
| Place | Patient's geographic location | NO | While geographic location may affect access to healthcare, it is not a direct risk factor for liver cirrhosis**.** |

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| Duration of alcohol  consumptio n | Number of years the patient has been consuming alcohol | Yes | Prolonged alcohol consumption is a significant risk factor for liver cirrhosis. |
| Quantity of alcohol  consumptio n | Amount of alcohol consumed per day | Yes | Amount of alcohol consumed per day |
| Type of alcohol consumed | Type of alcoholic beverage (e.g., beer, wine, spirits) | NO | Not as significant as overall consumption duration and quantity. |
| Hepatitis B/C  infection | Presence/absence of Hepatitis B/C infection | Yes | Hepatitis B/C infection is a significant risk factor. |
| Diabetes Result | Presence/absence of diabetes | YES | Diabetes is a risk factor for liver cirrhosis. |
| Blood pressure | Patient's blood pressure in  mmHg | NO | Not as directly relevant to liver cirrhosis as other features. |
| Obesity | Presence/absence of obesity | Yes | Presence/absence of obesity |
| Family history of cirrhosis/he reditary | Presence/absence of family history of cirrhosis or hereditary liver disease | Yes | Family history is a risk factor for liver cirrhosis. |

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| TCH, TG, LDL, HDL | Lipid profile measurements | Yes | | Abnormal lipid profiles are associated with liver cirrhosis. |
| Hemoglobi n, PCV, RBC,  MCV,  MCH,  MCHC | Red blood cell indices | Yes | | Anemia and red blood cell abnormalities are associated with liver cirrhosis. |
| Total  Count,  Polymorph  s,  Lymphocyt  es,  Monocytes  ,  Eosinophil  s,  Basophils | Complete Blood Count (CBC) parameters | Yes | | Abnormal CBC parameters are associated with liver cirrhosis. |
| Platelet  Count | Number of  platelets in the blood | Yes | | Low platelet count is associated with liver cirrhosis. |
| Total  Bilirubin,  Direct  Bilirubin,  Indirect  Bilirubin | Liver function test (LFT) measurements | Yes | | Elevated bilirubin levels are associated with liver cirrhosis. |
| Total  Protein,  Albumin, | LFT measurements | Yes | | Abnormal protein levels and A/G ratio are associated with liver cirrhosis. |
| Globulin, A/G Ratio |  |  |  |  |
| ALP,  SGOT/AS  T,  SGPT/ALT | LFT measurements | Yes |  | Elevated enzyme levels are associated with liver cirrhosis. |
| USG  Abdomen | Ultrasound findings (diffuse liver disease or not) |  | Yes | Ultrasound findings can indicate liver cirrhosis. |
| Predicted Value | Predicted outcome | Yes |  | Prediction of disease |